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Icebound frontiers of exploitation

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Icebound frontiers of exploitation; Networks for whaling in the Polar regions, 1904-1931

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**Icebound frontiers of exploitation;
 Networks for whaling in the Polar regions, 1904-1931**

PhD thesis

to obtain the degree of PhD at the
 University of Groningen
 on the authority of the
 Rector Magnificus Prof. E. Sterken
 and in accordance with
 the decision by the College of Deans.

This thesis will be defended in public on

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Acknowledgements

Our common industrial heritage provide insights into the complex relationship between scientific knowledge, technological development, industrial exploitation and society. One of the cornerstones within industrial archaeology, are the combination of written documents, photos and maps, with the systematic study of structures and artefacts. By combining these two sources- of sets of data (as I have done in this book), we can test the validity of the written sources, but perhaps more importantly, we gain knowledge of how and why actors in the past have interacted with – and used the surrounding landscape for different purposes and in different ways. This approach opens up new, interesting and multifaceted perspectives and explanations to historical processes in the polar regions and elsewhere. I hope that more scholars and professionals see the importance and value of this approach – and that the preservation, experience and research of our industrial heritage not only is relevant today, but important for future generations.

I have enjoyed studying and working with polar history, natural resource exploitation and industrial heritage research since 1999, and along the way, I have had the great pleasure to work together with some outstanding people - many of whom I regard as close friends. Many of these have contributed greatly to the outcome of this book. I am however sadly aware of the fact that I cannot mention you all here. I am nonetheless very grateful to you all.

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1. Introduction

In 1993, the Norwegian historian Thor Bjørn Arlov wrote an article where he hypothesised that the modern whaling industry played a geo-political role in the Norwegian government's secret struggle to gain sovereignty over the Arctic Archipelago (then known as Spitsbergen, today Svalbard).¹ In many ways, this hypothesis was the seed for this PhD project. In previous research on the history of the polar regions, historians seeking to explain the growth of polar science and resource exploitation there have revealed a complex web of scientific, economic, and political interests that play a role. Together, these formed a framework of larger social and cultural trends that rendered polar science and resource exploitation legitimate and desirable. However, the whaling industry – one of the largest economic utilisations of the polar regions – has rarely been explained in the same way. Whaling in the polar regions has been seen as yet another quick profit-making activity of an industry that is always ready to move to new hunting grounds all over the world. However, there are more factors than economic interests and markets to explain modern whaling activities in polar regions – these include geo-political factors and the ability of the industry to deal with the environmental and geographical conditions in the Arctic and Antarctic.

Therefore, the main objective of this dissertation is to analyse and explain the rise and fall of modern station-based whaling in the opening decades of the 20th century in a multi-disciplinary way, including all the above-mentioned factors. Why did modern station-based whaling emerge, develop, and decline in the polar regions? Which larger societal processes provided windows of opportunity that motivated actors in the whaling industry to establish whaling operations in the Arctic and Antarctic? Which actors and interests made this possible, and how did they attract and maintain support for their whaling operations?

¹ Arlov, T.B. *Whaling and Sovereignty – The role of whaling in the struggle for supremacy over Svalbard (Spitsbergen)*. In *Whaling & History – Perspectives on the Evolution of the Industry*. Publication no 29, Commander Chr. Christensens Whaling Museum, Sandefjord, Norway. 1993, Pp: 81–90.

Inspired by methodological and theoretical approaches from historical archaeology and industrial heritage research, I also want to include whaling sites in my analysis. Without this analysis, I cannot get sufficient knowledge of local environmental and geographical conditions for operating whaling stations in my case study areas and how the whaling companies coped with these conditions. For this reason, I will consider the material remains of the whaling stations – how did the whaling companies deal with the geographical, environmental, and political circumstances in the Arctic and Antarctic, and why? How did they adapt their production systems, settlements, and social organisation to these conditions? In this way, it will be possible to provide a new and multifaceted explanation of the rise and fall of station-based whaling in the Arctic and Antarctic.

To answer my research questions, I have focused on four case study areas. Two of these are located in the Arctic (at Spitsbergen and Bear Island) and two are in the Antarctic (South Orkney and South Georgia). These locations are particularly suitable case study locations because, a) they have been subject to intense competition for antarctic whale populations and political influence through the 20th century and, b) there is a rich source of relevant materials for answering my research questions, including archival sources and archaeological remains of whaling activities.

This research is very relevant because debates about the future of the Arctic and its natural resources are ongoing. Over the last few decades, interest in the polar regions has increased because global warming has affected the Arctic and parts of the Antarctic in a more profound manner than elsewhere in the world. Actors within resource industries, politics, and the media have argued that melting sea ice in the Arctic Ocean will make it easier to exploit natural resources and open up shorter shipping routes between the Atlantic and Pacific Oceans. In the wake of this debate, Arctic rim states are increasing their efforts to extend their exclusive economic zones under the United Nations Convention for the Law of the Sea (UNCLOS), while other states are proposing themselves as stakeholders in the Arctic, trying to gain influence in a region they believe may become important in the future.²

² Avango, D and Högselius, P. *Under the Ice: Exploring the Arctic's Energy Resources, 1898–1985*. In Christensen, M., Nilsson, A. & Wormbs, N. (eds.), *When the Ice Breaks: Media and the Science and Politics of*

There are many parallels between present day debates about resources and political influence in the Arctic and those that took place almost one century ago.³ In the Antarctic, natural resource exploitation and quests to attain national sovereignty have been hampered by the Antarctic Treaty System (ATS) of 1959, which not only governs the continent, thereby freezing competing sovereignty claims, but also defines Antarctica as a continent for science, where natural resource exploitation is all but outlawed.⁴ In 1991, a moratorium on mineral prospecting was signed, which will last until 2048.⁵ However, despite the treaty, there is interest in mapping mineral resources on the continent. In this changing world, international agreements under the treaty may also change.

Since prospecting and exploitation of natural resources in the Arctic and the Antarctic is not a recent phenomenon, there is great potential to explore and draw lessons from previous rushes for natural resources and the political influences in those regions. For centuries, the Arctic and Antarctic have experienced waves of exploration, exploitation, scientific research, and geo-political rivalry. These have been narrated in literature, media, and propaganda, which have subsequently shaped imaginations and understandings of these regions. In the Arctic, indigenous people have utilised the land for thousands of years. Large-scale exploitation of natural resources in the Arctic, however, started in the 16th century by actors from outside the region. These included whalers from the Basque region, the Netherlands, and Britain – who started hunting walrus and bowhead whales along the coasts of Spitsbergen (Svalbard).⁶ Whaling

Climate Change. 2013. Paglia, E. *The Northward Course of the Anthropocene: Transformation, Temporality and Telecoupling in a Time of Environmental Crisis*. 2016

³ Balch, T. W. *The Arctic and Antarctic Regions and the Law of Nations*. 1910. P: 265. In: *The American Journal of International Law*. Vol 4, No 2. Pp: 265–275. Arlov TB. *A Short History of Svalbard*. 1989. Oslo: Norwegian Polar Institute. Avango D. *Sveagruvan: Svensk Gruvhantering Mellan Industri, Diplomati och Geovetenskap*. Stockholm: Jernkontoret. 2005. Berg R. *From Spitsbergen to Svalbard': Norwegianization in Norway and in the 'Norwegian sea, 1820–1925*. *Acta Borealia* 30(2): 154–173. 2013. Blom I. *Kampen om Eirik Raudes Land: Pressgruppedpolitikk i Grønlandsspørsmålet 1921–1931*. Oslo: Gyldendal Norsk Forlag. 1973. Friedman RM. *Å spise kirsebær med de store*. In: Drivenes E.A, Jølle HD (eds) *Norsk Polarhistorie 2: Vitenskapene*. Oslo: Gyldendal, 331–420. 2004. Ulfstein G. *The Svalbard Treaty: From Terra Nullius to Norwegian Sovereignty*. Oslo: Scandinavian University Press. 1995, Wråkberg U. *Vetenskapens Vikingatåg: Perspektiv på Svensk Polarforskning 1860–1930*. Stockholm: Royal Swedish Academy of Sciences. 1999, Berg. R. *Norge på egen hånd 1905–1920*, bind 2 i *Norsk utenrikspolitikk historie*. 1995.

⁴ The Antarctic Treaty of 1959. See also: Abbink. P. *Antarctic Policymaking & Science in the Netherlands, Belgium and Germany 1957–1990*. 2009.

⁵ See <https://www.ats.aq/e/ep.htm>. Webpage for the Secretariat of the Antarctic Treaty.

⁶ Hacquebord, L. 1984. *Smeerenburg. Het verblijf van Nederlandse walvisvaarders op de westkust van Spitsbergen in de zeventiende eeuw*. PhD thesis University of Amsterdam. Hacquebord, L. 2001. *Three*

created competition between whaling companies and political conflicts between the nations from where the whaling companies came.⁷ In the Antarctic, exploitation started in the 19th century when American and British sealers started hunting for seals. The modern whaling industry established itself in the High Arctic and Antarctic in 1903–1904 and not only contributed to incorporating the polar areas into global capitalism, but also resulted in one of the largest man-induced alterations of the global ecosystem.⁸ By increasing our knowledge of the complex web of drivers responsible for previous waves of resource exploitation in the polar regions and the consequences of these exploitations on the geo-political situation in polar areas and the local environment, I wish to educate decision makers and the general public so that informed decisions can be made pertaining resource exploitation in polar regions today and in the future.

The large scale historical exploitation of polar areas (LASHIPA) project

I wrote this PhD thesis within the framework of the LASHIPA project, which was an International Polar Year (IPY) 2007–2008 project. The objective of the LASHIPA project was to explain the large-scale exploitation of natural resources in the polar regions from the 16th century until today, and the economical, geo-political, technical, social, and environmental consequences of this exploitation.⁹ The project included researchers from Sweden, the Netherlands, Norway, Great Britain, USA, and Russia, and included several PhD and post-doc projects studying hunting, trapping, whaling, and mining. The LASHIPA project was an attempt to break away from national frameworks that were common in polar history and seek to understand and explain the development and

Centuries of Whaling and Walrus Hunting in Svalbard and its Impact on the Arctic Ecosystem. *Environment and History* 7 (2001) 169–185.

⁷ Hacquebord, L and Avango, D. *Settlements in an Arctic Resource Frontier Region*. In *Arctic Anthropology*. Vol 46, No 1–2. Pp: 25–39. 2009

⁸ Clarke argue that the extinction of a resource might occur within two social conditions; common-property competitive exploitation on the one hand, and private-property maximization on the other, where exploitation of resources with low reproductive capability will lead to its depletions. See: Clarke, C. W. *The Economics of Overexploitation*. In: *Science*. No 17, 1973. Vol: 181. Pp: 630–634. Commercial hunting and exploitation of whales started in Finnmark in northern Norway already in the 1880s, which is a part of the Arctic. The modern whaling industry did not however move their activities to the High Arctic (Spitsbergen and Bear Island) until 1903/1904.

⁹ Avango, et al. *Between markets and geo-politics: natural resource exploitation on Spitsbergen from 1600 until present day*. In: *Polar Record* 47. (240). Pp: 29–39. 2011. See also: Hacquebord L. and Avango, D. *Settlements in an Arctic resource frontier region*. Pp: 25–39. In: *Arctic Anthropology*. No 46 (1–2). 2009.

consequences of industry in the polar areas from an international and comparative perspective.

Using a common theoretical and methodological frame and approach, the project compared different branches of resource exploitation in different time periods and regions using a similar analytical language. My dissertation is the only major case study of the modern whaling industry within the LASHIPA framework and therefore represents some of the key results from this IPY project.¹⁰

Objectives and research questions

The main objective of this thesis is to explain how and why the modern whaling industry established itself in the polar areas in the opening decades of the 20th century. Inspired by a theoretical approach designed to analyse the growth of resource exploitation in the polar areas,¹¹ I will study the structures and actors of whaling history. On the one hand, I will explore the larger societal contexts and structures that have influenced the actors in the whaling industry and have determined the success of their industry in the polar areas. On the other hand, I will study the actors and how they have used these contexts to build their whaling industry and why and how they adapted their operations to the political, environmental, and geographical conditions in the polar regions. I will do so by comparing how companies operated in four different locations in the polar regions: Bjørnøya (Walrus Bay whaling station) and Spitsbergen (Finneset whaling station) in the Arctic, and South Georgia (Prince Olav Harbour whaling station) and South Orkney (Signy Island whaling station) in the Antarctic. These whaling stations were in operation at more or less the same time (1904–1932). To avoid the pitfalls of assuming that the whaling industry can only be explained by economic factors, I will also explore political, scientific, technical, organisational, and social factors.

To meet these objectives, I have formulated research questions on two levels: an overarching level concerning historical contexts, and a project level with questions pertaining to the actors and how they built their networks. On the overarching level, my

¹⁰ The LASHIPA Archaeological Expedition Reports, No 1–9. 2003–2011. Arctic Centre. University of Groningen.

¹¹ Avango, D, Nilsson, A and Roberts, P. *Assessing Arctic Futures: resources, voices and governance*. The Polar Journal. Vol 3, no 2, Pp 431–446. 2013.

main research question is what historical contexts influenced the growth and decline of the four whaling enterprises in the Arctic and Antarctic? On the project level, I would first like to explore how companies behind the stations built their global networks – how did they attract investors and political support for their whaling enterprises? Which investors and state/political actors did they enrol and why? What interests did those actors have – economic, geo-political, or a combination of both? Secondly, I will explore how they built their local networks – how did the companies design whaling operations that were capable of producing the desired results under the environmental and political conditions in the Arctic and Antarctic? What were the consequences of their choices? What were the differences and similarities in these respects between the four whaling stations in the Arctic and Antarctic and why?

The project level research questions are particularly important because I answer them using a combination of archaeological and historical methods and sources, thereby making a unique contribution to research on the history of the arctic and antarctic whaling industries. The rationale for this approach is simple – explaining how and why the whaling industry established sustained operations in the polar areas requires us to examine how these companies adapted their strategies, technologies, and settlements to the challenging environmental, geographical, and political circumstances – far from the required materials and labour, with low temperatures, strong winds, sea ice, unsettled legal statuses, and a general absence of state power. Exploring how companies built their local network in this cross-disciplinary way will allow me to explain how they created whaling operations that were productive under such conditions.

At the turn of the 20th century, parts of the polar regions were still regarded as no man's land, or had at least an uncertain legal status. During this period, colonial powers in Europe and North America were increasingly interested in those areas and sometimes tried to assert sovereignty over them. In these attempts, state actors assembled different resources to attain their goals, such as claims of historical ties and geographical vicinity, or various acts meant to represent effective occupation – an important concept within international law pertaining to claiming sovereignty over so-called no man's land areas. An important means to effective occupation was creating various material symbols in the areas the states intended to claim. In the polar regions, such material symbols often

consisted of scientific research stations, established with state support. However, as Avango, Mathisen, Berg, Hacquebord, Arlov, and Wråkberg have shown, state actors could also use facilities established by extractive industries to attain their goals. Hacquebord has shown that whaling stations were already used as markers for territorial claims in the 17th century.¹² Other well-known examples are the coal mining settlements at Spitsbergen and Bear Island (Svalbard), which, apart from delivering coal to northern energy markets, also became useful for the geo-political ambitions of Norway, Sweden, and Russia in the north in the early 20th century. The mining settlements were used to represent effective occupation during sovereignty claims of Spitsbergen and Bear Island.¹³

Like the mining settlements on Svalbard, modern whaling establishments in the Arctic and Antarctic at the turn of the 20th century could have played a role in the political discussion of state actors who wanted to increase their political influence there. When the first whaling companies arrived in Spitsbergen, the coal mining industry had not really begun and only consisted of small-scale prospecting firms and their camps. It is reasonable to question, as Arlov did in his article in 1993, whether the modern whaling industry was used by the Norwegians to gain sovereignty over the archipelago. Based on the above-mentioned research, it is more than reasonable to assume that industrial activities such as whaling represented different things to different actors, depending on their goals. For actors with economic ambitions, whaling was a business activity that would hopefully generate a profit. For actors with (geo-) political ambitions, however, the same activity could be used to promote effective occupation of a certain territory. If such geo-political ambitions did exist, it is also interesting to explore to what extent these political goals were supported by the whaling industry. Perhaps the whaling industry simply used the political situation to gain political support for their activities – support that could be valuable during conflicts over territories and resources.

¹² Hacquebord, L. Back to the Future. The Past, Present and Future of Resource Development in a changing Arctic. *Journal of Northern Studies* 2, 2009, p:14.

¹³ Avango. D. *Sveagruvan- Svensk gruvhantering mellan industri, diplomati och geovetenskap*. 2005. Mathisen. T. *Svalbard in International Politics- 1871–1925*. 1954. Singh. E. B. *The Spitsbergen (Svalbard) Question: United States Foreign Policy, 1907–1935*. 1980. Berg. R. *Norge på egen hånd 1905–1920*. 1995. Arlov. T.B. *Svalbards Historie*. 2003. Wråkberg. U. *Politik och vetenskap i A.E. Nordenskiölds ockupationsförsök av Spetsbergen år 1871–1873*. In: *Arktisk gruvdrift: Teknik, historia och industriminnesvård i norr*. Editor. Wråkberg, U. 1999, and *Vetenskapens Vikingatåg: Perspektiv på svensk polarforskning 1860–1930*. 1999. L.Hacquebord, 2009. Back to the Future. The Past, Present and Future of Resource Development in a Chaging Arctic. *Journal of Northern Studies* 2–2009 pp 9–23.

Exploring the relationship between economic and political interests is a new approach to researching the history of the modern whaling industry and how it developed.

Delimitations

This thesis will focus on four former whaling stations in the Arctic and Antarctic that were in operation from 1904 to 1931. I chose 1904 as the start of my study because this was the year that modern whaling became established in the Arctic and Antarctic, and 1931 as the end of my study because this was when many whaling stations in the polar regions were closed down in favour of pelagic whaling operations. The stations are: Finneset whaling station at Green Harbour in Spitsbergen (Svalbard), Walrus Bay whaling station on Bear Island (Svalbard), Prince Olav Harbour whaling station in South Georgia (sub-antarctic), and Signy Island whaling station on the South Orkney Islands (antarctic). I chose these stations because they were all in operation at more or less the same time. In addition, their geographical distribution within the Arctic and Antarctic offer comparative perspectives. These whaling stations were owned and operated by Norwegian, South African, and British companies, allowing comparisons of different technologies, strategies, and geo-politics.

Where comparisons are suitable, I will include the results from previous research projects performed by Hacquebord (on Deception Island) and Basberg (in South Georgia). Archival studies and fieldwork documentation have been constrained to the above-mentioned sites.

Historiography

Research on the history of the modern whaling industry has often focused on the economic development and activities of the industry. While economic aspects explain why the industry was established, they do not explain why or how whaling companies from different nations sustained their industrial operations in the Arctic and Antarctic. Neither do economic aspects explain how and why they achieved this by adapting technologies, organisations, strategies, and structures to these regions – and what the

consequences of these choices were for their activities. Economic aspects alone do not provide insight into how and why different actors from different nations chose to exploit natural resources, and how this is reflected in different industrial cultures, symbolism, technology, and strategies used. To understand and explain how the modern whaling industry was established and sustained in the Arctic and Antarctic during 1904–1931, one has to consider (geo-) political, technical, social, and natural factors in addition to economic factors.

Research into modern whaling history has often been written within a narrow national framework and with nationalistic undertones. Modern whaling has been described as a noble cause that fulfils the duty to harvest Gods creation,¹⁴ or as a heroic act of seamanship linked to polar heroism and a fascination for the sublimity of the polar regions.¹⁵ However, it is mostly considered as one of the most controversial industries in world history.¹⁶

One of the most important works on whaling history is Tønnesen and Johnsen's series of volumes entitled *Den moderne hvalfangstens historie – Opprinnelse og utvikling/The history of modern whaling – origin and development* (1959–1970).¹⁷ There is a discrepancy between the title and the content, however, since it creates an expectation that their work encompasses a global history of whaling. In reality, it does not. Instead, it focuses almost exclusively on Norwegian whaling companies and their activities. This is in contrast to Jackson's work from 1978, which has the more realistic title, *The British Whaling Trade*.¹⁸ Common characteristics of all these volumes are their business history and economic history approaches, which focus on the global economic trends that fuelled the whaling industry while paying less or no attention to how the whaling companies carried out their activities, how and why they designed their whaling stations, and how well these stations functioned. The authors do not explain how or why the whaling companies adapted their technologies, settlements, and social organisation

¹⁴ Hughes. T.P. *Human-Built World: How to think about Technology and Culture*. 2004. P: 10.

¹⁵ Johnsen. A.O. *Finnmarksfangsten*. Vol: 1. 1959. P: 639. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*. See also: Nielsen. J.P. *Ishavet er vår åker*. 2004. P: 107. In: *Norsk Polarhistorie*. Vol 3. Drivenes. E.A & Jølle. H.D (editors).

¹⁶ See for example Heazle. M. *Scientific Uncertainty and the Politics of Whaling*. 2006.

¹⁷ Tønnesen, J.O.H and Johnsen, A.O. *Den moderne hvalfangst historie*. Vol 1–4. 1959–1970.

¹⁸ Jackson, G. *The British whaling trade*. In: *Research in maritime history*. No 29. 1978.

to the environmental and political conditions in the polar areas. Neither do they consider the whaling companies' strategies for controlling key resources or helping state actors to exercise sovereignty in areas where they carried out their whaling activities. However, despite my critical remarks in the above, it is fair to say that Tønnesen and Johnsen's four volume work; *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling* (1959–1970) remains one of the most comprehensive works written on the history of the modern whaling industry. This work has also been published in English as an abridged single-volume version, entitled *The History of Modern Whaling* (1982). The books deal with many aspects of the industry, from its early developments in the 19th century up until the decay of the antarctic hunting grounds in the 1960s and the global closure of many whaling stations. As Basberg points out, the books coincide with the decline of whaling in the Antarctic.¹⁹ Their work has been an important source of knowledge in the process of writing this thesis, but I have found it necessary to read its content with a critical eye. Tønnesen and Johnsen's work was commissioned and financed by the Norwegian whaling companies that operated in the Antarctic, which also appointed a reading committee that consisted of actors with interests in the industry.²⁰ The one-sided composition and funding of the work is reflected throughout the work, which often lacks analysis of how and why, favouring narratives with plenty of empirical detail but few explanations.

Another important whaling historian was Risting, who in 1922 presented a similar explanation for the evolution of the industry and its expansion in *Av Hvalfangstens Historie*. Risting portrayed the history of the whaling industry as an almost exclusively Norwegian affair.²¹ An explanation for this might be that printing of the book was funded by several whaling companies in Norway.²² Yet the book provides detailed and useful information on the activities of the industry. Just like the work of Tønnesen and Johnsen, Risting's book must be interpreted with some care. Risting was an active supporter of the whaling industry. He acted as secretary for the Norwegian Whaling

¹⁹ Basberg, B.L. *In the wake of Tønnesen and Johnsen: Trends in whaling history research after 1970*. Discussion Paper 19/05. Norwegian School of Economics and Business administration. Economic history section. P: 2. 2005.

²⁰ Johnsen, A. O. *Finnmarksfangstens Historie 1864–1905*. In: *Den Moderne Hvalfangst Historie- Opprinnelsen og Utvikling*. Vol: 1. P: 9.

²¹ Risting, S. *Av Hvalfangstens Historie*. 1922.

²² Risting, S. *Av Hvalfangstens Historie*. 1922. See the introduction.

Union from 1918 to 1935 and as chief-editor of the periodical *Norsk Hvalfangst Tidende*. Another of Risting's contributions was to initiate the International Whaling Statistics in 1930. The above-mentioned *The British Whaling Trade* has been a useful source of knowledge.²³ Jackson offered a more multifaceted explanation of the global growth and decline of British whaling, including the Antarctic, and focused on shifting markets and political circumstances.

Nationalistic narratives that signal historical ties with polar regions are also a reoccurring feature in more recently published literature about polar history. One example is *Into the Ice* (2006), which depicts and glorifies Norwegian exploration and exploitation of polar regions.²⁴ The authors argue that the modern whaling industry represented Norway's first oil adventure – an idea suggested by Elstad in the three-volume work *Norsk Polar Historie* (2004), on which the English edition is based.²⁵ I agree that this is an interesting parallel to Norwegian companies' more recent crude oil extractions, which have had a significant impact on "oil" communities in addition to Norway's overall economic development. The modern whaling industry had similar effects in Sandefjord, Tønsberg, and to some extent also in Larvik. However, the volume contains some unfortunate errors. The authors argue that the first Norwegian whaling station in the South Atlantic Ocean was Grytviken in South Georgia.²⁶ Although a Norwegian citizen (C.A. Larsen) played a key role as initiator and local station manager, this statement raises more than one eyebrow, since the company that founded, operated, and owned it was the Argentinean company Cia Argentina de Pesca,²⁷ based in Buenos Aires. This company was owned by Argentinean capitalists and its board consisted of Argentinean citizens.²⁸

I would also like to mention Klaus Barthelme here. He made substantial contributions to research on the modern whaling industry. His work on the German plans and

²³ Jackson, G. *The British whaling trade*. In: Research in maritime history. No 29. 1978.

²⁴ Drivenes, E.A, and Jølle, H.D (Editors). *Into the Ice: The History of Norway and the Polar Regions*. 2006.

²⁵ Elstad, Å. *Den første norske oljealderen*. 2004. Pp: 275–315. In: *Norsk PolarHistorie: Rikedommene*. Vol: 3. Drivenes, E.A & Jølle, H.D (editors). See also: Drivenes, E.A, and Jølle, H. D (editors). *Into the Ice: The History of Norway and the Polar Regions*. 2006. P: 171f.

²⁶ Drivenes, E.A & Jølle, H.D (editors). *Into the Ice – The History of Norway and the Polar Regions*. 2006. P: 171.

²⁷ Hart, I.B. *PESCA: A History of the Pioneer Modern Whaling Company in the Antarctic*. 2001. Pp: 1–564.

²⁸ Headland, R. K. *The History of South Georgia*. (2009, 2nd edition). P: 64f.

strategies to claim Bear Island in the Arctic has been of great value to me in this thesis.²⁹ Unfortunately, Klaus passed away before he could share and publish more of his knowledge of the modern whaling industry.

In addition to these more overarching studies on the industry, there is a rich literature focusing on specific geographical locations and whaling stations. Dickinson and Sanger's book *Twentieth Century Shore-Station Whaling in Newfoundland and Labrador* (2005) is an excellent example. The authors not only analyse the driving forces behind the establishment of the whaling industry there, but also its social implications. Another example is Bockstoce's *Steam Whaling in the Western Arctic* (1977), and *Whales, Ice, and Men; The History of Whaling in the Western Arctic* (1995), which focuses on the whaling industry in Alaska and Canada. In much of his work, Bockstoce demonstrated an often overlooked aspect of the whaling industry in the Arctic – the interactions between the whaling industry and their employees, and how important the local knowledge of the indigenous Inuit population was for the outcome of whaling activities. The author placed the whaling industry in context of a nationalisation process of northern Alaska and Canada, and showed how the authorities actively used the whaling industry's presence, activities, and installations to enhance and enforce territorial control. Another author is Webb, who focused on whaling in the Pacific in *On the Northwest – Commercial Whaling in the Pacific Northwest 1790–1967* (1988). Here, he focuses on the whaling industry in the coastal waters of Washington, British Columbia, and south-eastern Alaska. Much like Bockstoce, Webb also deals with the social dimensions of the industry. Other work worth mentioning here is Davis, Gallman, and Gleiter's *In Pursuit of Leviathan. Technology, Institutions, Productivity, and Profits in American Whaling, 1816–1906* (1997). Recent work on the American whaling industry has also focused on the material remains of the whaling industry, in particular Hershel Island, which was recently documented. The results of this survey provided an interesting basis for future comparative circumpolar studies on the design of whaling stations in terms of

²⁹ Barthelmess. K. *The Bear Island Expeditions of the German Sea Fisheries Association as Camouflage for Secret German Government Plans to Occupy the Island, 1897–1900*. 1998. In: *Aspects of Arctic and Sub-Arctic History*. Editor: Sigurðsson. I, and Skaptason. J. Also in: *Bäreninsel 1898 und 1899: Wie Theodor Lerner eine Geheimmission des Deutschen Seefischerei-Vereins zur Schaffung einer deutschen Arktis-Kolonie unwissentlich durchkreuzte*. 2009. In: *Polarforschung* 78 (1–2). Pp: 67–71. Barr. W. *The Helgoland Expedition to Svalbard: Die Deutsche Expedition in das Nördliche Eismeer, 1898*. 1988. In: *Arctic*, Vol: 41. No 3. Pp: 203–214.

technology and settlement plans in different environmental circumstances and cultural contexts.

Much literature has focused on the activities and history of individual whaling companies. Some of these are jubilee publications, such as *Firma Thor Dahl* of H. Bogen (1937).³⁰ Others are celebratory jubilee narratives, like *Aktieselskabet Ørnen 10/1 1903-10/1 1953. 50 Års Hvalfangst* (1953),³¹ and *Femti år I konkurranse og fremgang; Aktieselskabet Tønsberg Hvalfangeri 1907-1957* by Wasberg.³² Although these books were written as popular history, essentially presenting success stories in a top-down manner, they provide important information on individual companies. More recently, two comprehensive studies have been published on the former whaling industry in South Georgia. One is Ian. B. Hart's *Pesca: The History of Compañía Argentina de Pesca Sociedad Anónima of Buenos Aires – An Account of the Pioneer Modern Whaling and Sealing Company in the Antarctic* (2001), which is a comprehensive and highly detailed book on the history of this Argentinean company. The book is highly descriptive, however, and lacks a central hypothesis and research question. The same author has also written *Whaling in the Falkland Islands Dependencies 1904-1931: A History of Shore and Bay-Based Whaling in the Antarctic* (2006). Here, Hart focused more on the overall development of the modern whaling industry within the British-claimed sector in the Antarctic, rather than on any individual company. Similar to his earlier work, the book is detailed and provides interesting information on the industry, and is as such an important contribution to our knowledge of the industry in the Antarctic. In spite of this, much of the information presented in these two books is difficult to verify, since the author does not provide any references.

Elliot's book, *A Whaling Enterprise: Salvesen in the Antarctic* (1998), narrates the history of Christian Salvesen & Co, but also describes the family history as the author is the great grandson of the company's founder. The book presents a chronological overview of the company and its activities without questioning or analysing many of their activities in a larger context. The work, which is largely based on the author's memories, is

³⁰ Bogen. H. *Firma Thor Dahl, Sandefjord 1887-1937, 1 Oktober. Jubileumsskrift*. Oslo 1937.

³¹ Bogen. H.S.I. *Aktieselskabet Ørnen 10/1 1903- 10/1 1953, 50 Års Hvalfangst*. Sandefjord 1953.

³² Wasberg. G. C. *Femti år I konkurranse og fremgang; Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. Tønsberg 1958.

occasionally linked to Johnsen's and Tønnensen's four-volume work. A more recent and important contribution is Odd Galtelands *Hvalfangst på Syd Georgia: A/S Sandeffjords Hvalfangerselskab / A/S Vestfolds fangst fra landstasjonen Strømnes 1906–1931* (2009). The author approached and analysed the history of the whaling company as a network of individuals, and described how they operated in relation to economic, political, and technical factors on a national and international scale, through the merger with A/S Ocean in 1920 until the station was closed in 1931.³³ In summary, it can be concluded that the publications mentioned here are rich in detail, which has occasionally been valuable for this work, but with little explanation of the emergence, development, and decline of the companies being discussed.

The material culture of the modern whaling industry has not been well studied on site. The Norwegian Antarctic Research Expeditions (NARE) have done so during three fieldwork campaigns in South Georgia. A similar industrial archaeological expedition was done by Dutch researchers. This expedition focused on documenting the remains of the Hektor whaling station at Deception Island, which was partly covered by volcanic activity.³⁴ This expedition has made important comparisons of the design and layout of the whaling stations included in this thesis. The NARE expeditions in South Georgia yielded a number of fieldwork reports, articles, and a book entitled *The Shore Whaling Stations at South Georgia: A Study in Antarctic Industrial Archaeology*. Basberg, Nævestad, and Rossnes have argued that the industry's technological development can easily be studied and understood with the help of patents and archives.³⁵ It is true that these sources provide an insight into the development of the industry, as well as the possible ambitions of the companies – however, they do not provide any information on why, how, and in which contexts these solutions developed, and what consequences they had on the sustainability of the industry as a whole. One hazard of basing one's analysis entirely on these types of sources is that many of the designs and patents adopted by the companies were often re-designed, altered, and adapted in the polar

³³ Galteland. O. *Hvalfangst på Syd Georgia: A/S Sandeffjords Hvalfangerselskab / A/S Vestfolds fangst fra landstasjonen Strømnes 1906–1931*. P: 11. 2009

³⁴ Hacquebord, L. *Hector station on Deception Island (South Shetland Islands, Antarctica), an environmental assessment study of a whaling station*. Pp: 72–97. In: *Circumpolar Journal*. 1–2, Volume 7, Antarctica; Research and nature conservation, future prospects. 1992.

³⁵ Basberg. B. L, Nævestad. D, and Rossnes. G. *Industrial Archaeology at South Georgia: methods and results*. P: 51. In: *Polar Record*. No 32 (180). Pp: 51–66. 1996.

environment to the circumstances under which the industry operated. What is important here is that these changes were rarely reported.³⁶ I would therefore argue that to be able to understand and answer questions about adaptation, it is important to use a methodological approach that combines written sources with the study and documentation of material remains on site. Basberg has, in addition to the publication mentioned above, written extensively on technology, patents, and on the history of modern whaling elsewhere. These publications have been important in the course of this research.

In addition to the above-mentioned works, there is an abundance of reminiscent and descriptive books and articles, which in themselves are highly interesting as they give an insight into everyday life on whaling stations. A few examples include Fraser's *Shetland's Whalers Remember* (2001), Gordon's *Whaling Thoughts Recalled*, and Pettersen's *Syd Georgia-Eventyrenes øy* (1999).

Another set of volumes has been produced over the last decade that document scientific research on the history of whaling promoted by Christian Christensen's Whaling Museum in Norway. All four volumes, entitled *Whaling and History*, are conference publications from four international conferences on different aspects of whaling history.³⁷ Parallel to this, the museum has also published an annual year book entitled *Ambra*, which contains a number of whaling related themes.

Research on the relationship between industrial exploitation and geo-political ambitions in the polar regions has been incorporated more into historical research over the last few decades. In the Arctic, the relationship between industry and geo-politics is especially well documented. In his thesis, Avango shows how the Swedish and the Norwegian governments actively used and endorsed the presence of coal mines owned by companies from their own countries through support purchases and covert funding.

³⁶ Gustafsson, U.I, and Basberg, B.L. *From NARE to LASHIPA...and Beyond*. In: Proceedings of SGHT Conference in Dundee, Scotland. 2011.

³⁷ See *Whaling & History: Perspectives on the Evolution of the Industry*. Publication no 29/ 1993, *Whaling & History II; New Perspectives*. Publication no 31/ 2006, and *Whaling & History III; Papers presented at a symposium in Sandefjord on the 18th and 19th of June 2009*. Publication no 33/ 2010. Ringstad, J.E (editor) 2006, 2010, and Ringstad, J.E, Basberg, B.L, and Wexelsen, E (editors). Kommendør Chr. Christensen's Hvalfangstmuseum, Sandefjord, Norway.

The industrial activities of these coal mining companies, and the territorial claims they made in Spitsbergen and Bear Island (Svalbard), played important roles during the negotiations of the legal status of the archipelago.³⁸ This process is also discussed by Singh in *The Spitsbergen (Svalbard) Question: United States Foreign Policy 1907–1935* (1980). In this work, the author takes a starting point in the industrial activities of the American coal mining company Arctic Coal Company.³⁹ Berg takes a different approach in *Norge på egen hånd 1905–1920* (1995). He focused on the development of a Norwegian polar policy and the strategies aimed at gaining sovereignty over the archipelago. He placed this in context of the imperialistic ambitions of a newly independent Norway. With Europe involved in the First World War, the Norwegian government gained ownership over industrial projects on the archipelago. During the same period, scientific expeditions and telegraph stations were used to enhance presence and claims.⁴⁰ Arlov discussed the relationship between industry and geo-politics in his ambitiously titled book *Svalbards Historie* (2003), but perhaps not as extensively as others. As mentioned earlier, Arlov hypothesised a potential relationship between the modern whaling industry and Norway's geo-political ambitions in his article *Whaling and Sovereignty: The Role of Whaling in the Struggle for Supremacy over Svalbard (Spitsbergen)*.⁴¹ In a 2008 article, Gustafsson discussed these issues further and revealed new information on the relationship between whaling and geo-politics.⁴²

Similar relationships between science and politics have been researched thoroughly by Wråkberg, Sörlin, and Friedmann. In a number of publications, they demonstrate that the driving forces behind the accumulation of cartographical and geographical knowledge during the 19th and 20th centuries can be linked to contemporary imperialistic ambitions. These expeditions were difficult undertakings, and in their wake followed tales of hardship that were often written by the expedition members

³⁸ Avango. D. *Sveagruvan- Svensk gruvhantering mellan industri, diplomati och geovetenskap*. 2005.

³⁹ Singh. E. C. *The Spitsbergen (Svalbard) Question: United States Foreign Policy, 1907–1935*. 1980.

⁴⁰ Berg. R. *Norge på egen hånd 1905–1920*. 1995. In: Norsk Utenrikspolitikks Historie. Vol: 2. See also: Ruud. J. *Spitsbergen Radio 1911, et ledd i norsk suverenitetsstrev?*. Master dissertation in History. NTNU. 2000.

⁴¹ Arlov. T.B. *Whaling and Sovereignty. The role of whaling in the struggle for supremacy over Svalbard (Spitsbergen)*. 1993. In: Whaling & History. Publication no 29. Editors: Ringstad. J.E, Basberg. B.L, and Wexelsen. E. Kommendør Chr. Christensen's Hvalfangstmuseum, Sandefjord, Norway. Of the same author, see also: *Svalbards Historie*. 2003.

⁴² Gustafsson. U.I. *Modern Whaling Industry in Spitsbergen as a tool for territorial claiming and national sovereignty strives*. 2008. In: Patrimoine de l'industrie/ Industrial Patrimony; Resources, Practices, Cultures. TICCHI. Editor: Bergeron. L.

themselves. These narratives linked to a sublime fascination for great unknown frontiers, and became in many ways integrated into the identity of the polar regions.⁴³ In his book, *Pink Ice: Britain and the South Atlantic Empire* (2002), Klaus Dodds discusses and analyses the political struggles in the Antarctic, and how and with what results different nations used different strategies to secure territorial control. Peder W.C. Roberts's thesis *A Frozen Field of Dreams: Science, Strategy, and the Antarctic in Norway, Sweden, and the British Empire 1912–1952* (2010) is a new and important contribution to the field of antarctic exploration and its political and commercial relationships. The author has also published several articles on political strategies and policy making in the Antarctic.

Patricia Seed's book *Ceremonies of Possession in Europe's Conquest of the New World 1492–1640* (1995) does not focus on the polar regions but on the rituals and ceremonial acts aimed at securing ownership and control of territories.⁴⁴ These are as valid today as they were centuries ago and can be used to analyse similar strategies and symbols in the polar regions.

Today, whaling is, perhaps more than ever, a heated and debated topic that incorporates governmental and non-governmental bodies, as well as commercial companies involved in tourism. Although the ethical and moral aspects are outside the scope of this thesis, I would like to mention the recent studies by Kalland,⁴⁵ Freeman,⁴⁶ Heazle,⁴⁷ and Stoett,⁴⁸ which discuss and analyse the complexity of whales and whaling and the many stakeholders involved.

⁴³ Wråkberg, U. *Vetenskapens Vikingatåg: Perspektiv på svensk polarforskning 1860–1930*. 1999. See also: *The Politics of Naming: Contested Observations and the Shaping of Geographical Knowledge*. 2002. In: Narrating the Arctic: A Cultural History of Nordic Scientific Practices. Sörlin, S, and Bravo, M (editors). Pp: 155–198. Sörlin, S. *Rituals and Resources of Natural History: The North and the Arctic in Swedish Scientific Nationalism*. 2002. In: Narrating the Arctic: A Cultural History of Nordic Scientific Practices. Sörlin, S, and Bravo, M (editors). Pp: 73–124. See also: *Framtidlandet: Debatten om Norrland och naturresurserna under det industriella genombrottet*. 1988. Friedmann, R. M. *Nansenismen*. 2004. In: Norsk PolarHistorie. Vol: 2. Pp: 107–174.

⁴⁴ Seed, P. *Ceremonies of Possession in Europe's Conquest of the New World 1492–1640*. 1995.

⁴⁵ Kalland, A. *Unveiling the Whale: Discourses on Whales and Whaling*. 2011, and *Miljøkonflikter: Om bruk og vern av naturresurser*. 2001.

⁴⁶ Freeman, M. *Elephants and Whales: Resources for Whom?* 1995.

⁴⁷ Heazle, M. *Scientific Uncertainty and the Politics of Whaling*. 2006.

⁴⁸ Stoett, P.J. *The International Politics of Whaling*. 1997.

During the last two decades, a few industrial archaeological research projects were undertaken in the Arctic and Antarctic. These have combined written sources with the study and documentation of material remains in the polar landscapes. Two projects in particular have, as mentioned earlier, focused on the remains of former whaling stations and used them as sources for historical research. These are The Netherlands Antarctic Expedition executed in 1990/91 by the Arctic Centre/University of Groningen, and the NARE South Georgia Industrial Archaeology Project executed from 1989/90 to 1996/97. These two projects supplied vital data, which have been integrated into this thesis for comparisons. While the results of the Dutch expedition are presented in *Antarctica: Research and Nature Conservation, Future Prospects*,⁴⁹ (1992), the results of the NARE expedition are available in a number of site-reports, which include site maps and photo documentary. In addition to these, the book *The Shore Whaling Stations at South Georgia: A Study in Antarctic Industrial Archaeology* was published in 2004.⁵⁰ Participants of the NARE expedition reported on other aspects of the whaling industry in a number of articles, where they focused on various technical and organisational aspects, as well as the documentation of industrial heritage.⁵¹

In addition to these two projects, a similar methodological approach was adopted by the Swedish Cultural Science Research Programme (1998–2001), which was executed by the Swedish Academy of Science and the Royal Institute of Technology in Stockholm. During this project, several industrial and scientific sites in the Arctic were visited and documented. One of the outcomes of this project was the previously mentioned PhD

⁴⁹ Circumpolar Journal. 1–2, Volume 7, Antarctica; Research and nature conservation, future prospects. See especially: Hacquebord. L. *Hector station on Deception Island (South Shetland Islands, Antarctica), an environmental assessment study of a whaling station*. Pp: 72–97. 1992.

⁵⁰ See: *Dokumentasjon av hvalfangststasjonen Husvik Harbour/ Syd Georgia*, and *Dokumentasjon av hvalfangststasjonen Stromness Harbour/ Syd Georgia*. 1989/90, *Dokumentasjon av hvalfangststasjonen Grytviken/ Syd Georgia*. 1992/93, *Dokumentasjonen av hvalfangststasjonen Leith Harbour/ Syd Georgia*. 1996/97, and: Basberg. B.L. *The Shore Whaling Stations at South Georgia; A Study in Antarctic Industrial Archaeology*. 2004.

⁵¹ See for example: Basberg. B.L. *Productivity in the 20th Century Antarctic pelagic and Shore Station Whaling. Growth and Stagnation in two Technical Regimes*. In: The Great Circle. Vol: 19, No 2. 1997, and *The Floating Factory: Dominant Designs and Technological Development of the Twentieth Century Whaling Factory Ships*. In: The Northern Mariner. Vol: 8, No: 1, 1998. *A Ship Ashore? Organisation and living conditions at South Georgia whaling stations, 1904–1960*. In: International Journal of Maritime History. Vol: XIV, No: 1, 2002. See also: Rossnes. G. *Hvalfangsten og kulturminner. Hektor Hvalfangststasjon*. In: Norsk Sjøfartsmuseums Årbok. 1996, and *Overvintringsfeltet I økologisk og kulturteoretisk perspektiv- fangstfeltet som kulturlandskap*. 2008. In: Polarboken 2007/2008.

thesis by Avango. In addition to this, a number of articles were published by M. Nisser, U. Wråkberg, U.I. Gustafsson, K. Awebro, and S. Sörlin.⁵²

Theory and method

To generate explanations and answer the research questions, I have used a theoretical framework based on actor-network theory (ANT) developed by Bruno Latour and John Law. I have several rationales for doing so. Firstly, in line with research into the history of technology over the last decades, I take it as a point of departure that industrial activities, such as whaling, need to be understood and studied as socio-technical entities. This is essential because whaling industrialists needed to do much more than invent a technological artefact as a harpoon with an explosive arrow-head and fire it from a harpoon gun on a steam powered ship to successfully develop whaling in the polar regions. Although such inventions were important, whaling industrialists needed to place the technological component of their production within wide-ranging networks consisting of technology, personnel (workers, foremen, and engineers), organisations distributing and selling whale oil and by products, investors, and political decision makers. The growth of whaling in the polar regions cannot be explained without taking the full range of societal components into consideration. Secondly, while the societal dimensions are fundamentally important, I am convinced that social determinism would deliver equally unsatisfying results. The whaling industry in the polar regions was developed in an environment that was more challenging than in other parts of the world. Therefore, it is necessary to consider the environment as fundamental to the large networks that whaling companies built. To be able to include the arctic and antarctic environments in my analyses, the obvious choice among the many social constructivist approaches to the history of technology was ANT. ANT has been employed successfully in analyses of the growth of large production (or other) systems because it includes technologies, settlements, individual and organisational actors, and natural environments in its analysis.⁵³

⁵² See for example: *Narrating the Arctic: A Cultural History of Nordic Scientific Practices*. 2002. Sörlin, S, and Bravo, M (editors), and Nisser, M. *A Modern Concept of Industry within Traditional Boundaries*. 2007. In: *Industry and Modernism*. Pp: 98–122. Kervanto Nevanlinna, A (editor), and *Industry in the Nordic and Baltic Region and its Role in Urban Transformation, an overview*. 2008. In: Cinis.

⁵³ Avango, D. *Sveagruvan- Svensk gruvhantering mellan industri, diplomati och geovetenskap*. 2005, Avango, D, Nilsson, A and Roberts, P. *Assessing Arctic Futures: resources, voices and governance*. The Polar Journal.

ANT supplies a set of theoretical and methodological tools that can be used to analyse and explain how and why industrial projects (such as whaling) commence, develop, and eventually close. A central concept within the ANT framework is the network builder – the leaders of the whaling companies being studied. I will use this term instead of other more common but diffuse terms, such as leading actors, to designate the actors who construct and control actor networks.⁵⁴ The term “network builder” is more adequate for describing what the whaling company leaders did.

To build successful industrial operations, network builders construct an actor network consisting of two closely integrated parts – a global and a local network.⁵⁵ The global network consists of actors who have the necessary financial resources and political influence to make the industrial projects possible. These global network actors may invest money in whaling company shares, buy whale oil, or give concessions for whaling. To get the resources necessary to launch whaling operations in polar regions, the network builders had to enrol such actors to their global network. The local network, on the other hand, consists of the industrial operations themselves. In this thesis, the local network is comprised of the whaling stations and the infrastructures that connected them to the world markets. The local networks of whaling companies consisted of technological artefacts, such as ships with harpoon guns, whaling stations with cookeries for blubber, meat and bones, housing units, service buildings, and docks. They also consisted of employees – whaling station workers, workers on board the ships, foremen, engineers, and higher level managers.

Vol 3, no 2, Pp 431–446. 2013, Law, J. *Technology and Heterogenous Engineering: The case of Portuguese expansion*. In: *The Social Construction of Technological Systems – New directions in the sociology and history of technology*. Pp: 111–134. 1989.

⁵⁴ See Avango, D. *Sveagruvan- Svensk gruvhantering mellan industri, diplomati och geovetenskap* 2005, Law, J and Callon. M. *The life and death of an aircraft: A network analysis of technical change*. In: *Shaping Technology/ Building society – Studies in sociotechnical change*. Bijker, W.E and Law, J. (editors). Pp:21–52. 1992.

⁵⁵ The actor network includes people, funding and politics, as well as technologies, knowledge's and the natural environment, elements and factors that directly or indirectly might have an effect on the outcome of the industrial project. See: Summerton. J. *Stora Tekniska System: En introduction till forskningsfältet*. 1998. Pp: 19–44. In: *Den Konstruerade Världen: Tekniska system I historiskt perspektiv*. Blomquist. P, and Kaijser. A (editors). See also: Law. J and Callon. M. *The Life and Death of an Aircraft: A Network Analysis of Technical Change*. 1992. P: 29. In: *Shaping Technology/ Building Society: Studies in SocioTechnical Change*. Bijker. W. E, and Law. (editors).

The network builder's most important task was to enrol actors to become part of these networks. These actors can be individuals and organisations, but also non-human actors, such as technological artefacts or environmental elements (e.g., a melt-water stream or a natural harbour). Non-human actors do not usually act or speak for themselves; instead they do so through actor spokespersons (usually the network builder). Non-human actors are called actants.

To ensure whaling industries were successful ventures, the network builders had to build sufficiently strong global and local networks, and make sure that there was a constant flow of resources between the local and global networks. The local networks (the whaling stations) had to produce whale oil products for the market, thereby providing the actors in the global networks with the expected economic (or political) returns. The actors in the global network on the other hand, had to deliver the resources necessary to maintain production, i.e., additional investments or new concessions. If the network builder is unable to maintain their position as the obligatory point of passage, they can no longer control the resources supplied by the global network, and are therefore not able to claim responsibility for the success of the local network and profit from it.⁵⁶

In this thesis, I will focus on the leaders of the whaling companies and the network builders, and study how they built and maintained their local and global networks in the Arctic and Antarctic.

A third rationale for using ANT is that it provides me with a theoretical and methodological tool for widening the scope of sources by including archaeological sources. ANT scholars of the history of technology and leading archaeologists have convincingly shown that material objects form an active part of any society. They are not passive reflections of those societies, but take part in their construction by, for instance, legitimizing power, naturalizing certain ideas, or othering social groups. In the ANT model I am using, artefacts form an important part of the local networks and must function well if the local networks are to deliver. Thus, artefacts are involved in historical change and therefore need to be included in the analyses if we want to

⁵⁶ Law, J., and Callon, M. *The Life and Death of an Aircraft: A Network Analysis of Technical Change*. 1992. P: 31f. In: *Shaping Technology/ Building Society: Studies in Socio-Technical Change*. Pp: 20–52.

sufficiently explain historical change.⁵⁷ Following this, the preferable method for gathering sources for this theses is a historical-archaeological approach that combines written sources with archaeological sources. For this reason, I have conducted both archival research and archaeological fieldwork at abandoned whaling stations in the Arctic and Antarctic (further described in the section on sources).

It could be argued that information on the design of whaling stations down to individual artefacts might be found in archived documents, such as maps and patents. There are three problems with such an approach, however. The first is that these documents were drawn by people who knew the working of those stations inside out. The same cannot be said about the historical archaeologist who is trained in explaining the history of whaling engineering. By documenting and analysing the physical remains of the stations, I have acquired a deep understanding of how the production process and settlements were designed, and why they were designed the way they were. The second problem is that archived maps of stations are usually different from the way the stations were actually built because station engineers altered their designs, adapting them to local conditions.⁵⁸ The third problem is the double nature of maps and reports. Even though some of them represented what the whaling companies had actually built in the Arctic or Antarctic, others were more like tools that companies used to convince others to support them (investors, customers, or political decision makers). They could be tools aimed at sustaining support from the global network for the companies' activities.

For all these reasons, it is important to use a methodological approach that combines traditional analyses of archived sources with surveys, documentation, and analysis of the sites in question. This approach is important as it allows the researcher to test and compare statements in reports and maps, and gives insight into the ambitions and plans of the network builders.⁵⁹ Combining material remains with written sources, photographs, maps, and surveys has allowed me to ask how and why the modern

⁵⁷ Avango, D. *Industriarvet idag*. In: *Bebyggelsehistorisk tidskrift*. Pp: 5–9. 2013. Tilley, M and Shanks, T.Y. *Re-constructing Archaeology: Theory and Practice*. 1992. Avango, D. *Aktanter I Ingemanslandet: Den svenska gipsbrytningen på Svalbard*. P: 173. In: *Industrins avtryck: Perspektiv på ett forskningsfält*. Avango, D, and Lundström, B (editors). Pp: 173–206. 2003.

⁵⁸ Gustafsson, U.I, and Basberg, B.L. *From NARE to LASHIPA...and Beyond*. In: *Proceedings of SGHT Conference in Dundee, Scotland*. 2011

⁵⁹ Avango, D and Hacquebord, L. *The Value of industrial Heritage sites in the Polar areas as sources for Historical Research*. In: *Proceedings of SGHT Conference in Dundee, Scotland*. 2011

whaling industry developed in the polar areas because it extends beyond traditional explanations (such as market fluctuations) to include technical, social, environmental, and political factors. These factors are all important to explaining the driving forces behind the establishment, sustainment, and eventual closure of these whaling stations.

To explain why network builders successfully built their actor networks, I will observe another methodological principle of ANT – to follow the process by which the actors built their industrial operations (i.e., their local and global networks). Only then is it possible to explain who they enrolled, why they enrolled them, what the consequences were, and why. It is important to do so without projecting any pre-determined explanation of which factors determined the development and outcome of the whaling projects.⁶⁰

Network builders construct their actor networks in different phases. In the construction phase of an actor network, the network builders define a problem to which they claim to have a solution. Such a problem might be a lack of oils and fats on the market. A solution to this problem could be to establish whaling stations in the Arctic and Antarctic where there are plenty of whale populations to harvest. To convince – or enrol – actors to their global network, the network builders create and use tools. Such tools can be scientific reports, prospects, and maps as well as a barrage of rhetoric explanation of the potential and feasibility of their projects. Network builders will typically use different tools depending on the interests of the actors they want to enrol or maintain support from. This is because different actors may have different goals for supporting whaling companies. While an investor and capitalist may have economic motives, state actors might have geo-political goals. Industrial projects can therefore be an economic activity and geo-political tool at the same time.⁶¹ Consequently, industrial projects in the polar

⁶⁰ Latour. B. *Science in Action: How to follow scientists and engineers through society*. 1987. P: 145f. See also: Law. J. *Technology and Heterogeneous Engineering: The Case of Portuguese Expansion*. 1989. P: 130. In: *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*. Pp: 111–134.

⁶¹ Law. J and Callon. M. *The Life and Death of an Aircraft: A Network Analysis of Technical Change*. P: 24. In: *Shaping Technology/ Building Society: Studies in Sociotechnical Change*. Bijker. W. E, and Law. J (editors). 1992

regions have an interpretative flexibility, depending on the interest of the actors supporting (or opposing) it.⁶²

Although this flexibility can apply to companies as a whole, production sites such as whaling stations could be a particularly important geo-political resource for state actors. As mentioned earlier, the legal status of several parts of the polar regions was uncertain and often disputed in the early 20th century. Based on the legal doctrine of the law of effective occupation, however, states that could prove continuous usage and settlement in a no man's land would gain a better right to sovereignty there. This meant that if a British company built a station in an area where the British government wanted sovereignty, the British government would be able to claim effective British occupation there. Using ANT terminology, such a scenario would make the station an actant working on behalf of British colonialism.

It could be argued that using an economic market theory that describes the circulation of goods and the distribution of resources between entrepreneurs is suitable when studying an industry such as the modern whaling industry.⁶³ Arguing that the economic market is a part of any actor network would be incorrect, but actors in the economic market can arguably be an integrated part of an actor network, depending on their interests and goals. In this context, it should also be noted that within economic theory there is a strong school of ANT supporters who do not view the economic market as a unified whole, but rather as an intertwined system of actor networks that are linked to each other in a complex and multi-layered web. The evolution, stabilisation, and decay of industries, technologies, and technical projects such as the modern whaling industry, as well as their social, political, cultural, and environmental impacts is a complex process that can only be fully understood and analysed by applying a theoretical framework, such as ANT, which encourages us to incorporate all elements (human and non-human).

⁶² Misa. T.J. *Controversy and Closure in Technological Change: Constructing steel*. In: *Shaping Technology/Building Society – Studies in sociotechnical change*. Bijker. W.E & Law.J (editors). P: 109. 1992

⁶³ Callon. M. *Actor-network theory, the market test*. In: *Actor Network Theory and after*. P: 182. Law.J & Hassard. J. (editors). 1999

Sources and criticism

The research questions have been answered using a combination of archival sources (photographs, diaries, logbooks, letters, official documents, maps, and drawings) and surveys and documentations of a number of industrial sites in the Arctic and Antarctic. In addition to this, the thesis builds on previous historical research and research projects, such as the Deception Island project of the First Netherlands Antarctic Expedition and the NARE South Georgia Industrial Archaeological Project. These projects provide a basis for contextualisation and comparative analysis on several aspects of the modern whaling industry.

Archives

- Norway: Norwegian Polar Institute, Tromsø Statsarkiv, Gamvik Museum, Sandefjord Whaling Museum, Vestfold Fylkesarkiv in Tønsberg, Larvik Museum, Norsk Teknisk Museum, the National Library, Norsk Telemuseum and Norsk Folkemuseum in Oslo, as well as the kind support and private contributions and interest of the Ingebrigtsen and Skontorp families.

- Great Britain: The British Antarctic Surveys and the Scott Polar Research Institute in Cambridge, the British National Archives in London, and the United Kingdom Hydrographical Office, as well as the kind support of Dick Laws and the estate of David Wynn-Williams.

- USA: Michigan Technological University archive in Houghton.

- The Falkland Islands: Stanley museum archives and the Governor's archives.

- The Netherlands: The Dutch National Archives, archives of the Arctic Centre University of Groningen.

- Sweden: The National museum of Science and Technology, Stockholm.

- Germany Senckenberg museum archives, Frankfurt.

- Australia The private collection of Glenn McIntosh

Fieldworks

- 2007 LASHIPA 4 Archaeological Expedition on Svalbard. August 2–25.

The purpose of this field campaign was to document the remains of Finneset whaling station/Spitsbergen and to survey and document other sites related to modern whaling industry activities here. The results of the expedition were published in the LASHIPA 4 Report.⁶⁴

- 2008 LASHIPA 5 Archaeological Expedition on Bear Island. July 27–August 17. The purpose of this field campaign was to survey and document the remains of Walrus Bay whaling station and its related sites on Bear Island. Other sites on Bear Island were also documented to provide data for other projects within the LASHIPA IPY project.⁶⁵

- 2009 LASHIPA 6 Archaeological Expedition at South Georgia. March 3–April 1. The purpose of this field campaign was two-fold: 1) to gather data and document the remains of Prince Olav Harbour whaling station in South Georgia, and 2) to gather data on how rituals and symbols were used in South Georgia, and what geo-political roles the whaling and research stations played. In addition, the team documented Ocean Harbour whaling station, the only remaining whaling station on South Georgia that was not documented before.⁶⁶

⁶⁴ LASHIPA 4 Archaeological expedition on Svalbard, August 2–25,2007. Arctic Centre, University of Groningen, Netherlands.

⁶⁵ LASHIPA 5 Archaeological expedition on Spitsbergen (and Bear Island) 27.July – 17.august 2008. Arctic Centre, University of Groningen, Netherlands.

⁶⁶ LASHIPA 6 Archaeological expedition on South Georgia, 3 March – 12 April 2009.

- 2010 LASHIPA 8 Archaeological Expedition in the Antarctic. March 6–April 3. The purpose of this field campaign was to document the remains of the former whaling station and its related sites at Signy Island in the South Orkney Islands. The expedition also gathered data on how rituals and symbols were used, and what geo-political roles the whaling and research stations played in the South Orkney Islands, the Antarctic Peninsula, and the South Shetland Islands. The team also documented the Hektor Whaling station on Deception Island.⁶⁷

All data gathered during the above-mentioned fieldwork campaigns have also been post-processed and stored in a database developed within the framework of the International Polar Year 2007–2008. This data is available at:

http://gcmd.nasa.gov/getdif.htm?Historical_Resource_Exploitation_Avango_IPY10_NL.

I have interpreted the official company records and statistical data found in archives with caution, since whaling companies in the Antarctic operated under concession where statistical catch data supplied the basis for taxation and fees. In other words, the whaling companies could have had an incentive to manipulate the data. This data has been collected and compiled by the International Whaling Commission. I have used their official catch data, with the additional catch data extracted from logbooks.

Maps and reports commissioned or written by the whaling companies give insight into their activities and of the spatial layout of the stations. These reports could potentially be used as rhetorical documents to convince capitalists to invest in the company. These maps have been geo-referenced and tested in the field to test their validity. The source value of these derelict whaling stations for historical research must not be underestimated. Combined with traditional archival sources and used within a theoretical and methodological framework such as ANT, they can be a powerful tool for answering both how and why questions in historical research.⁶⁸

⁶⁷ Svenska Polarforskningssekretariatets årsbok 2010, pp: 10–12.

⁶⁸ Avango, D and Hacquebord, L. *The Value of industrial Heritage sites in the Polar areas as sources for Historical Research*. 2011. In: Proceedings of SGHT Conference in Dundee, Scotland p. 7–32.

Outline of this book

This book is divided into eleven chapters. Two of these contextualise the development of the modern whaling industry in the Arctic and in the Antarctic and provide a general overview of economic and geo-political aspects. Four chapters are designated to the chosen sites, while comparative aspects and conclusions are presented in chapters 9 and 10. Chapter 11 contains information on the sources and references used.

In Chapter 1, I provide a brief introduction to the book and its framing. In addition, I discuss the research questions and why and how I intend to answer these questions using the theoretical and methodological framework provided by ANT. I have also discussed the status of historical research that is relevant to this thesis.

In Chapter 2, I contextualise the necessary background for the chapters about the four case studies in the Arctic and Antarctic. I present and discuss the general history of the industry, as well as the development of a market for whale oil and other products, which created the economic enticement and an important driving force for the move of whaling to the polar regions. In this chapter, I also present and discuss the relevant geo-political background, a discussion that is built on previous research.

Chapter 3 is an introduction to Arctic whaling. I discuss the development of modern whaling in this part of the European High Arctic from 1904 to 1931. Furthermore, I present and discuss the activities and the two technical regimes used. I also explore how the companies organised their activities, and how they adapted to the archipelagos' no man's land status. This discussion provides an important background for the following two chapters.

Chapters 4 and 5 describe the two Arctic case studies. In chapter 4, I present and discuss the whaling station at Finneset and the construction of global and local networks.

Chapter 4 also deals with the actors that were involved while the station was in operation, the catches, economic and political results, and the technical and spatial development of the whaling station over time. Chapter 4 also deals with the whaling station's and the company's geo-political roles, introduced in the previous chapter.

Chapter 5 focuses on the Walrus Bay whaling station at Bear Island. Similar to the

previous chapter, it deals with the construction of global and local networks, catches, results, and the development of the whaling station over time.

In Chapter 6, I introduce antarctic whaling, including the general development of whaling stations, pelagic whaling, the concession system, and antarctic geo-politics. This is important background information for the following two chapters. I present and discuss Prince Olav Harbour whaling station in chapter 7, while Signy Island whaling station is presented and discussed in chapter 8. Each of these chapters follow the same structure as the Arctic chapters; the network builders, global and local network formation, the design, layout, and development of the station, social strategies, technological choices, and their geo-political roles.

In chapter 9, I compare and discuss the development of the modern whaling industry in the Arctic and Antarctic. In chapter 10, I finalize the analysis and discuss the main conclusions.

Chapter 11 presents the sources and references to archives.

2. The modern whaling industry in context

Introduction

Market demands for whale oil and whale by-products have, for centuries, encouraged Europeans to engage in commercial whaling. In the 16th and 17th century, whaling changed from a small-scale activity based in the Basque region of the Iberian Peninsula into a much larger scale, international activity as Dutch, English, and later North American whalers got involved in the industry. From the mid-18th century, whaling was widely considered as an activity connected with hardships, comradery, and heroic acts of courage;⁶⁹ much like the expeditions exploring the polar regions a few centuries later.⁷⁰

In this chapter, I will explore the market for whale oil and how it changed over time. In addition, I will examine the larger global contexts that influenced the development and spread of the modern whaling industry into a global business. I will also discuss the technologies that were developed by the modern whaling industry, and why. The geopolitical situation in the polar regions and the consequences this had on the whaling industry will also be discussed.

The polar regions

The geographical delimitations of this thesis are the European High Arctic and the Western Antarctic. Even though the northern parts of mainland Europe are part of the Arctic and have a substantial whaling industry, I have chosen not to include northern Fennoscandia in this thesis. The main reason is that the conditions for whaling in the High Arctic were different from those on mainland Fennoscandia. The High Arctic and Subantarctic were remote, cold, windy, and inhospitable regions, located far from permanent settlements and resources that industrial companies normally had access to,

⁶⁹ Famous books like Herman Melville's *Moby Dick*, W. M. Davis *Nimrod of the Sea, or the American Whale Man*, R. Ellis *Of Whales and Men*, and T.W. Smiths *A Narrative of the Life, Travels and Sufferings of Thomas W. Smith*, and the many volumes of William Scoresby's the younger whaling journeys to the Arctic, published by The Hakluyt Society, is only small a selection where narratives of these voyages are depicted.

⁷⁰ Wråkberg. U. *The Politics of Naming: Contested Observations and the Shaping of Geographical Knowledge*. 2002. P: 156. In: *Narrating the Arctic: A Cultural History of Nordic Scientific Practices*. Editors. Sörlin. S, and Bravo. M.

such as energy, water, technology, and raw materials like wood, steel, and other commodities. In northern Fennoscandia, such resources were accessible, in addition to infrastructure such as railways and sea transport. This enabled industrialists to establish themselves and operate with lower costs and less effort than in the High Arctic. In the Subantarctic, the conditions were, from the perspective of industrialists, similar to the High Arctic. This is why I have included South Georgia and the South Orkney Islands in my study.



Fig 1 and 2. The Arctic Monitoring and Assessment Programmes (AMAP) map defining the boundaries of the Arctic. Right: The location of the Antarctic Convergence, including Antarctica and the Periantarctic or Subantarctic Islands that surround it.

Markets

The development of the modern whaling industry in the 19th century is linked to the industrialisation of Europe and North America. Whale oil represented only a small percentage of the overall oil market, which was dominated by vegetable oils and animal fats. Whale oil was comparably cheap and came onto the market when the whaling season was over.⁷¹ As a consequence, merchants could buy large quantities at favourable prices. Since whale oil could be stored for long periods, profit could be increased by speculating on the market. In the latter part of the 19th century, the number of margarine factories grew rapidly and developed into one of the most important markets for whale oil.⁷² Increased demand created an economic enticement to produce oil that

⁷¹ Tønnesen, J.N. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. In: *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*. Vol: 2. P: 499.

⁷² Tønnesen, J.N. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. In: *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*. Vol: 2. P: 494ff. See also: Wilson, C. *The History of Unilever: A Study in Economical Growth and Social Change*. Vol: 1 & 2. 1954. Patterson, H. B. W. *Hydrogenation of Fats and Oils*. 1983.

promoted growth of the modern whaling industry. Within a decade, the industry became a global industry with hunting grounds off North America (Yukon, Newfoundland, and Labrador), Norway, Iceland, Russia, the Hebrides, Africa, Australia, New Zealand, and Hawaii, to mention a few. Expeditions were also sent to investigate potential hunting grounds in the High Arctic and Antarctic.

Prices for whale oil and whale-related products have always been dictated by the availability and demand of whale oil on the world market. This demand was also, according to Basberg, influenced by the availability of competing oils like vegetable, mineral, animal oils, and fats on the market.⁷³ The German city Hamburg held a dominant position as an export market for oils produced by the European sealing industry in the 19th century; a position that increasingly shifted to Great Britain, France, and eventually the Netherlands by the 1870s.⁷⁴ The primary reasons behind the increased demand for oil and fats were industrialisation processes that needed oil to lubricate giant machines in the factories of Europe (and North America) and jute production.⁷⁵

Hygiene and diet products also used oils. An increasing number of people moved from the countryside into industrial areas to find employment. For most people, this meant improved income, and industrialisation led to the growth of the middle class.

Throughout Europe and North America, margarine and soap factories were established. These factories primarily used solid animalistic fats as raw materials in their production line. The soap and margarine manufacturing industries were a product of an industrial society, as Wilson remarks.⁷⁶ In Great Britain, the soap market expanded rapidly throughout the 19th century from an annual consumption of 24,106 tons in 1801 to over 260,000 tons in the 1890s.⁷⁷ The industrialised mass production of soap and margarine was made possible by an industrialised market for consumer goods, where

⁷³ Basberg. B.L. *Technological Transformation in the Norwegian Whaling Industry in the Interwar Period*. 1985. P: 93. In: *The Scandinavian Economic History Review and Economic and History*. Vol: XXXIII, No: 2.

⁷⁴ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 494. In: *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*.

⁷⁵ The phasing out of the linen export bounty in Great Britain in the early 1830s had an indirect positive effect for the whaling industry, after it had been discovered that dry jute fibres from Bengal, Bangladesh and India could be lubricated and softened with whale oil.

⁷⁶ Wilson. C. *The History of Unilever; A Study in Economical Growth and Social Change*. 1954. Vol 1. P: 3.

⁷⁷ Wilson. C. *The History of Unilever; A Study in Economical Growth and Social Change*. 1954. Vol 1. P: 9.

manufacturers could access large amounts of cheap raw materials as well as plenty of labour at a time when the textile industry went through a recession in Great Britain.⁷⁸

According to Brandt, prices for whale oil peaked in the 1870s.⁷⁹ After this brief peak, prices for whale oil stagnated and declined gradually until 1905.⁸⁰ This was because vegetable and mineral oils had flooded the market in large quantities, thereby causing oil prices to fall. There were also other contributing factors for falling whale oil prices. As Johnsen pointed out, the state of the British economy had a substantial influence.⁸¹ In the 1890s, the British economy went through a depression, which started easing off in 1898. This was followed by a period of economic upraising that briefly improved whale oil prices.

Whale oil is, much like coconut oil, palm oil, peanut oil, cottonseed oil, and linseed oil, a liquid oil and not a solid fat.⁸² The use of liquid oil has traditionally been limited to lighting and lubrication in the textile industry and tanneries.⁸³ This relatively narrow market made the producers (in this case, the whaling companies) vulnerable to changes on the market. To counteract this situation, especially at the end of the 19th century, many whaling companies experimented with new ways of utilising and refining whale oil so that their business was less vulnerable to changes on the market.

At the turn of the 20th century, liquid oil represented more than 60% of the total world production of oil and fat.⁸⁴ Finding a way to harden liquid oil into solid fats became increasingly important, especially since whaling companies and the soap and margarine

⁷⁸ Unilevers World. Anti-Report No 11. P: 18.

⁷⁹ Brandt. K. *Whale oil- An Economic Analysis*. 1940. See also: Basberg. B.L. *Technological Transformation in the Norwegian Whaling Industry in the Interwar Period*. 1985. In: The Scandinavian Economic History Review and Economic and History. Vol: XXXIII, No: 2.

⁸⁰ Johnsen. A. O. *Finnmarksfangstens Historie 1864–1905*. Vol: 1. 1959 P: 38. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

⁸¹ Johnsen. A. O. *Finnmarksfangstens Historie 1864–1905*. Vol: 1. 1959 P: 511. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

⁸² Talbot. G (editor). *Specialty Oils and Fats in Food and Nutrition – Properties, Processing and Applications*. 2015. P: 249. See also Webb. R.L. *On the Northwest: Commercial Whaling in the Pacific Northwest 1790–1967*. 1988. P:144f, and Commonwealth Economic Committee. *Vegetable oils and Oilseeds – a review*. 1967. P: 24f.

⁸³ Johnsen. A. O. *Finnmarksfangstens Historie 1864–1905*. Vol: 1. 1959 P: 498f. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

⁸⁴ Wilson. C. *The history of Unilever – a study in economic growth and social change*. 1954. Vol 2. P: 110. See also Tønnesen. J.N. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling. Vol: 2. P: 500.

industry had economic interests in doing so.⁸⁵ For the whaling companies, a successful hardening process would mean a larger and more diversified market, which would increase demand, improve prices, and generate higher profits. For the soap and margarine industry, which largely based their production on solid animalistic fats, a successful hardening of liquid oils into solid fats would reduce their raw material costs and increase profits.

According to Patterson, the first patented successful laboratory hardening of liquid oil, or hydrogenation, took place in Germany in 1902.⁸⁶ One year later, a patent was granted in Great Britain for combining hydrogen with oil, fat, or fatty acids in its liquid state in the presence of a metal, which acted as a catalyst to produce a fat with a desirable melting point.⁸⁷ Even though large-scale hydrogenation was not possible until 1911–1912, its initial success boosted investments in the industry as investors saw the potential for cheap whale oil.⁸⁸ By altering and controlling the melting point, the hydrogenation process converted unsaturated fatty acids into saturated fatty acids, resulting in the conversion of liquid oils into solid fats, or semi-solid fats that could be used for soap and margarine production. Crosfield's in England established the first commercial hydrogenation plant in 1906.⁸⁹ Other factories were soon built in Germany, the United States of America, and the Netherlands. The success of the hydrogenation process opened a new market for whale oil that made the industry boom. Having access to cheaper raw materials did not create peaceful conditions among the soap producers, as Wilson has shown.⁹⁰ On the contrary, it toughened the competition between Crosfield's, Schicht's, Jurgens', Lever Gossage, and others.

⁸⁵ Tønnesen. J.N. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling. Vol: 2. P: 499.

⁸⁶ Patterson. H.B.W. *Hydrogenation of fats and oils*. 1983. Introduction.

⁸⁷ Patterson. H.B.W. *Hydrogenation of fats and oils*. 1983. Introduction.

⁸⁸ Basberg. B.L. *Technological Transformation in the Norwegian Whaling Industry in the Interwar Period*. 1985. P: 95. In: The Scandinavian Economic History Review and Economic and History. Vol: XXXIII, No: 2

⁸⁹ Patterson. H.B.W. *Hydrogenation of fats and oils*. 1983. Introduction.

⁹⁰ Wilson. C. *The history of Unilever – a study in economic growth and social change*. 1954. Vol 1 and 2.

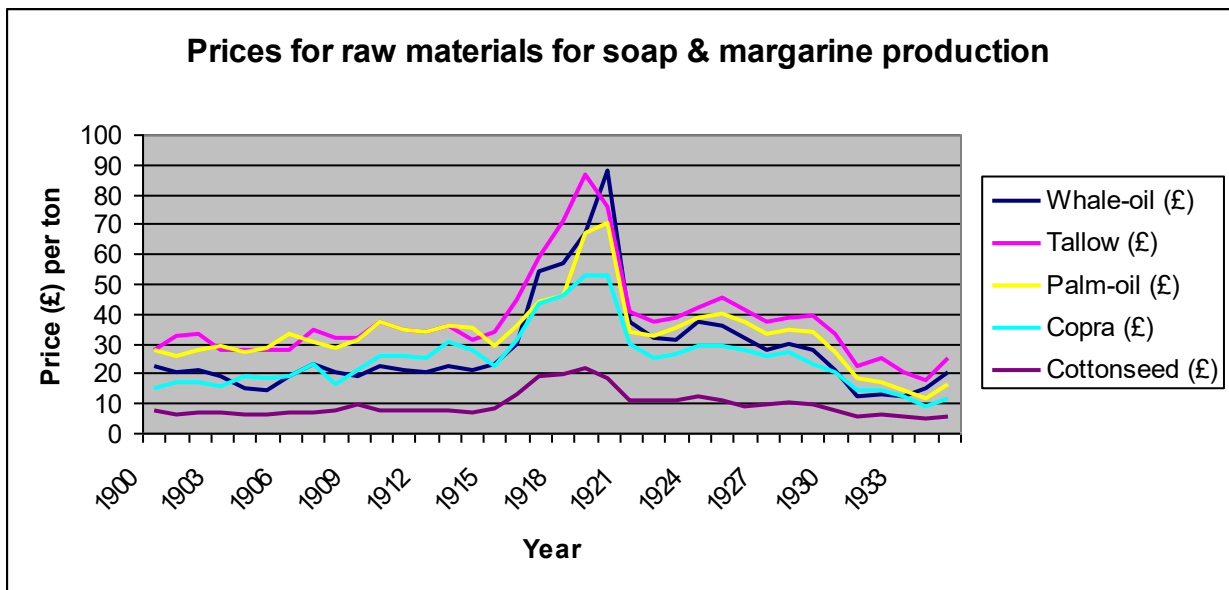


Fig 3. Similar price development for solid fats and liquid oils after 1900. Prices for whale oil increased and peaked between 1915–1921, after which prices dropped rapidly. The cheap cottonseed oils were perhaps the largest competitor of whale oil, especially when they flooded the market.⁹¹

Despite competition, whale oil prices remained relatively stable between 1905 and 1915. During the First World War, whaling and whale oil became increasingly politicised because glycerine could be extracted from whale oil to produce explosives. As a result, whale oil from Antarctica was classified as contraband by British authorities and placed under rigorous control. In a way, similar to many raw materials during and immediately after the First World War, prices for whale oil climbed continuously until 1920–1921, and thereafter dropped back to pre-war levels in the wake of the global economic crisis in the 1920s.

⁹¹ Based on data supplied by Wilson. C in *The History of Unilever; A Study in Economical Growth and Social Change*. 1954. Vol 2. Appendix 9, and Hart. I. B. *Whaling in the Falkland Island Dependencies 1904–1931. A History of shore and bay-based whaling in the Antarctic*. 2006. P: 316f.

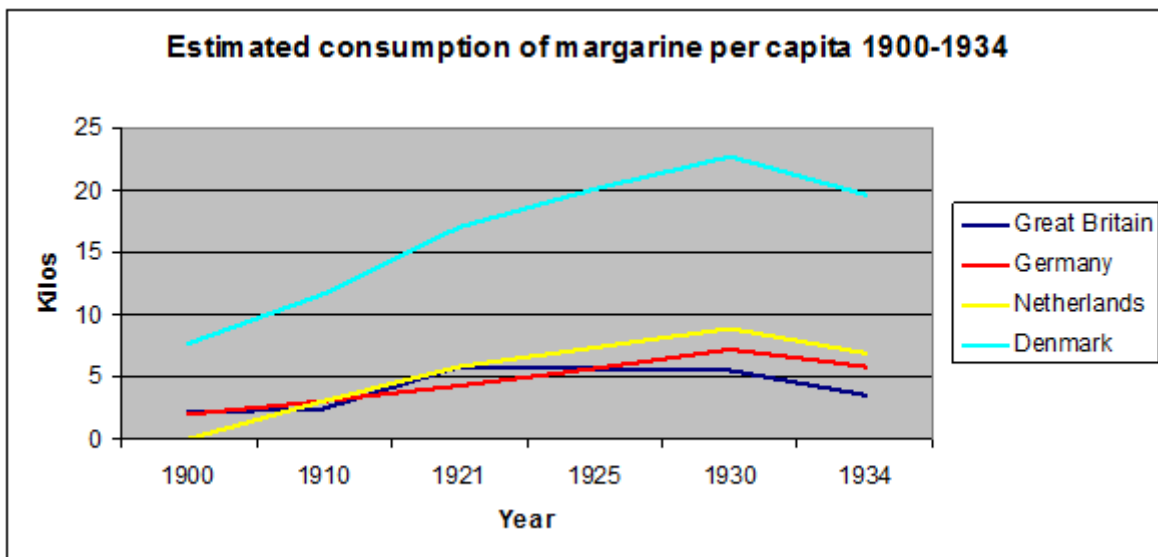


Fig 4. The estimated consumption of margarine per capita in Great Britain, Germany, the Netherlands, and Denmark between 1900–1934. The figure indicates an increased demand for whale oil on the market.⁹²

It appears that the drop came as a surprise to the market and for the margarine producing companies such as Lever Bros, Joseph Watson & Sons Ltd, Crosfield's, Jurgens', Van den Bergh, and Schicht's.⁹³ Many actors and companies expected a post-war market with decreased salaries and increased unemployment, which they believed would create a cheap market for margarine. There were primarily three factors behind the declining prices for whale oil in 1920–1921. Firstly, the markets in mid- and eastern Europe failed partly because of costs the war had inflicted. Secondly, the political situation was so unstable that selling to many nations in Europe was considered a financial risk. Thirdly, there had been an overproduction of vegetable oils. Huge quantities were stored in the whale oil producing nations because the producers had been unable to ship it to Europe during the war. As freight rates became cheaper and cheaper throughout 1920, large quantities of vegetable oils entered the European market and forced the prices down.⁹⁴

When the whalers' union approached the British agent, Meade-King, Robertson & Co Ltd of Liverpool, the union, according to Tønnesen, recommended storing the season's

⁹² Based on data supplied by Wilson. C In: *The History of Unilever: A Study in Economic Growth and Social Challenge*. 1954. Vol 2. Appendix 6.

⁹³ See Wilson. C In *The History of Unilever: A Study in Economic Growth and Social Challenge*. 1954.

⁹⁴ Wilson. C In *The History of Unilever: A Study in Economic Growth and Social Challenge*. 1954. Vol 2. P: 205ff. See also: Wamplew. W. *Salvesen of Leith*. 1975. P: 107.

produce and canceling the hunting season of 1921–1922.⁹⁵ In a desperate attempt to sell the produce, the whalers' union offered to sell at £35 per ton, which was turned down.⁹⁶ The economic situation toughened when the larger buyers in Great Britain and the Netherlands decided to merge and form a buyers pool. In response to this, several whaling companies formed a producers pool in early 1921. Through the producers pool the whaling companies could put pressure on the buyers pool by demanding a price of £32.10 per ton, which corresponded to approximately one-third of the prices paid in the previous season.

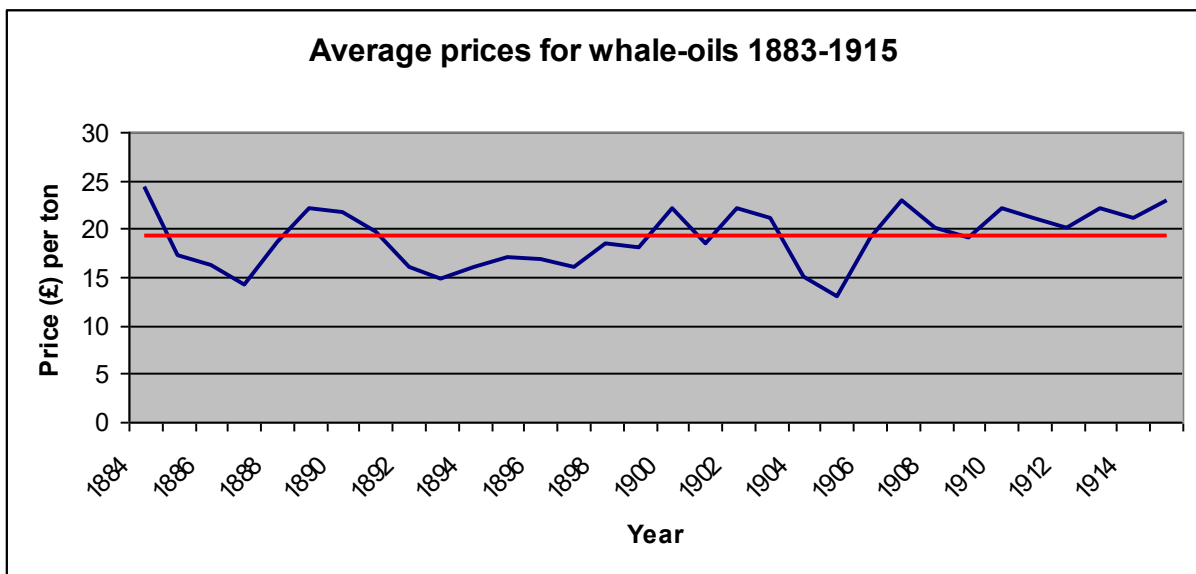


Fig 5. Prices for whale oil (including average demarking line) in 1883–1915. Prices for whale oil fluctuated substantially, and only on a few occasions prior to 1905 did it go beyond the average of £19.23 per ton. After 1905, however, prices increased as demands and beliefs grew as a result of the hydrogenation process.⁹⁷

Another important factor was that Lever Bros, which was one of the main margarine producing companies in Europe, became one of the largest producers of whale oil after the purchase of the Southern Whaling & Sealing Company Ltd and other whaling companies in 1919. Lever Bros controlled the market for whale oil throughout the 1920s

⁹⁵ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del II: 1914–1924. Den Pelagiske Fangst 1924–1937*. 1969. Vol: 3. P: 179. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

⁹⁶ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del II: 1914–1924. Den Pelagiske Fangst 1924–1937*. 1969. Vol: 3. P: 179. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

⁹⁷ The figure is based on data supplied by: Johnsen. A.O. *Finnmarksfangsten 1864–1905*. 1959. Vol: 1. P: 505f. In: *Den Moderne Hvalfangst Historie-Opprinnelse og Utvikling*, Jackson. G. *The British Whaling Trade*. 1978. P: 244, Hart. I. B. *Whaling in the Falkland Islands Dependencies: A History of shore and bay-based whaling in the Antarctic*. 2006. P: 316, and *The International Whaling Statistics*. 1942. P: 54.

by being both the largest buyer and by subsidizing De Nordiske Fabrikker (De-No-Fa).⁹⁸ The situation in 1920–1921 meant that competitors, despite attempts to counteract the situation, made huge losses and went bankrupt, strengthening Lever Bros' already dominant position.⁹⁹ Falling prices for raw materials was, of course, favourable for the soap and margarine producers who could buy whale and other oils cheap and stock up. Therefore, they largely went unharmed in spite of their prearranged contracts to buy whale oil.

The result of the events in 1920–1921 was, as Tønnesen concludes, that producers and buyers were organised into competing pools.¹⁰⁰ Throughout the 1920s and early 1930s, prices for whale oils remained relatively stable. To generate large profits for their shareholders, the whaling companies, especially those that operated in the Antarctic, compensated for the prices by increasing the number of whale catches and the output of whale oil. Whales were exploited with little regard to the need for rejuvenation of populations and the effects on the ecosystem.

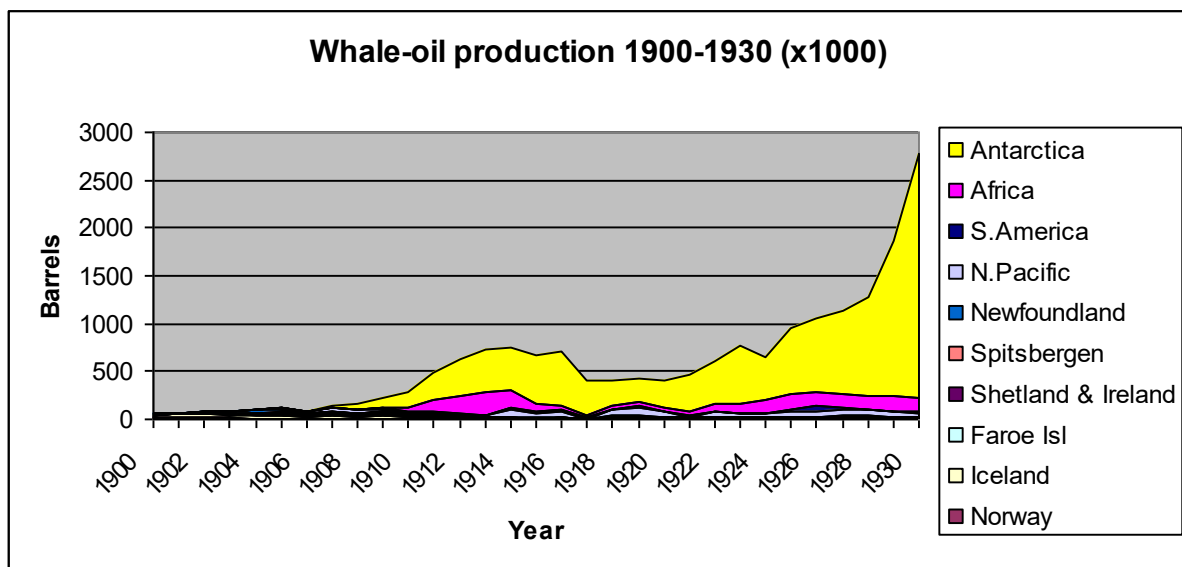


Fig 6. Chart indicating the global production of whale oil in 1900–1930. Note the dominant position the Antarctic hunting grounds gained after 1906.¹⁰¹

⁹⁸ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del II: 1914–1924. Den Pelagiske Fangst 1924–1937*. 1969. Vol: 3. P: 186. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

⁹⁹ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del II: 1914–1924. Den Pelagiske Fangst 1924–1937*. 1969. Vol: 3. P: 187. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

¹⁰⁰ Tønnesen. J.N. *Verdensfangsten 1883–1924. Del II: 1914–1924. Den Pelagiske Fangst 1924–1937*. 1969. Vol: 3. P: 189. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

¹⁰¹ The right diagram is based on data compiled by Tønnesen. J.N. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. In: *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*. Vol 2. 1967. P: 585. The

While prices for whale oil increased, prices for other whale products such as baleen (whalebone) dropped during the first decades of the 20th century. Prices for baleen had risen during the 19th century because of an increasing demand from the fashion industry where it was, for example, used to make corsets and to make fine textiles firmer. According to Bockstoce, the wholesale of baleen was without precedence in 1878 when it was valued at \$3.25 per pound.¹⁰² This meant that a whaling company operating in America could make \$5000 for baleen from a single bowhead whale. Similarly, in Iceland, the export value of baleen alone yielded Kr376,000 in 1900.¹⁰³ Between 1900 and 1910, baleen was, as Tønnesen remarks, commonly sold on the European market for Kr15,000 per ton.¹⁰⁴ The market for baleen diminished rapidly when plastics and bakelit entered the market. By 1915, most whaling companies rarely bothered utilising the baleen that was commonly cut out and left on the beach.



Fig 7. Discarded baleen lying on the beach beside Hektor Whaling station at Deception Island, Antarctica.¹⁰⁵

diagram on the left is based on data collected on *International Whaling Statistics*, published by the Committee for Whaling Statistics. Oslo/ Norway. 1931.

¹⁰² Bockstoce. J. R. *Whales, Ice, & Men: The History of Whaling in the Western Arctic*. 1986. P: 208.

¹⁰³ Tønnesen. J.N. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. P: 42. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

¹⁰⁴ Tønnesen. J.N. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. P: 76. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

¹⁰⁵ Photo courtesy of the Norwegian Polar Institutes photoarchive, Tromsø.

A new technological system

The early development of modern whaling – artefacts and cultural constructs

Besides demands on the world market for materials produced from whales, another important factor that contributed to the development of whaling in the polar regions was the development of new whaling technologies.

In research on the history of whaling, one man – Svend Foyn – has been singled out as the primary (and only) inventor of the technological system associated with the modern whaling industry. In this section, and in line with the findings of decades of research into the history of science and technology, I will argue that this technology came about because of the combined efforts of many actors.¹⁰⁶

There is no doubt that the modern whaling industry was narrated and thereby promoted within a framework of heroism and industrial development in the north. The place given to the Norwegian whaling entrepreneur Svend Foyn is a prominent example of this. He and his abilities have often been described as heroic. Nielsen, for example, writes that Foyn “*was a rare example that the Norwegians could make a difference in a time of industrialisation. He had made pioneering inventions, which, when applied to catching sea mammals, put Norway at the forefront of the European nations and which made him famous in many nations. The message that comes back is that there was a close link between the Viking legacy and the Norwegian ability to contribute to modern society*”¹⁰⁷ Johnsen writes that “*many others had invested heavily in solving this problem, but all in vain. Americans, British, Dutch, and Danes had to give this up during the years when Svend Foyn tirelessly experimented with his method. It is therefore understandable that the great man from Vestfold later spoke of the joy of having defeated four able actors of other nations. With the development of Foyn’s catching method, the modern whaling industry was born*”.¹⁰⁸

¹⁰⁶ See for example Hughes. T.P *Rescuing Prometheus*. 1998, *Networks of Power: Electrification in Western Society 1880–1930*, and Bijker. W.E, Hughes. T.P, and Pinch. T (editors) *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*. 1989, where the many actors and factors involved in the complex evolution of technologies are revealed.

¹⁰⁷ Nielsen. J.P. *Ishavet er vår åker*. 2004. P: 107. In: Norsk PolarHistorie, Vol 3. Drivenes. E. A & Jølle. H.D (editors).

¹⁰⁸ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 209. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

Svend Foyn was undoubtedly important in the evolution and shaping of the modern whaling industry. However, awarding the development of any technical system or industry to one actor is exaggerated. This narrow view on technological development disregards the complex interactions, exchange of ideas, and innovations between actors and factors over space and time that are part of these processes. In the following, I will discuss what is modern about the modern whaling industry, and how and why this predominant narrow image has remained unchallenged in historical research.

Modern whaling and its early development

Tønnesen defined modern whaling as the hunting, killing, and processing of several whale species into a variety of products either at whaling stations or onboard floating factory ships.¹⁰⁹ Tønnesen's definition covers all aspects, and separates modern whaling from early modern whaling. Technically, modern whaling used steam-powered whale catching boats equipped with stern mounted cannons with grenade harpoons. These harpoons were connected to the boat through a whale line that allowed the crew to haul the dead whale from the depths using a steam winch. To avoid breaking the whale line, the boat was fitted with a compensator that allowed for movement. The boat and its crew could hunt and kill fast swimming whales such as blue, fin, and humpback whales, salvage the sinking carcass, and tow it to a whaling station for processing. Species diversification was decisive for the organisation of the industry, since it meant that the whaling companies could shift from species to species, depending on the availability and the season.

In the early modern whaling industry, whalers used hand-powered rowing boats with the harpooner positioned in the front. This way, whalers could only hunt slow swimming right whales that floated after they were killed. The whaling historian and archaeologist Louwrens Hacquebord has shown that the dependence on one species not only meant that there was little enticement to establishing permanent whaling stations

¹⁰⁹ The following is based on Tønnesen. J.N. *Verdensfangsten 1883–1924- Del 1: 1883–1914*. Vol 2. 1967. P: 3–8. In: *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*.

in the vicinity of the hunting grounds, but also that strong competition often rapidly depleted whale populations, forcing the companies to seek new hunting grounds.¹¹⁰

Once the whale catcher had delivered its catch to the whaling station, the whale was hauled onto a wooden platform called the flensing plan. Here, the blubber layer was removed, cut into smaller pieces, and processed into oil. The remainder of the whale carcass was then towed to the lemming platform. Here, workers separated the meat and bones from each other, and processed them into oil separately. Different parts were cooked separately because the oil was extracted at different temperatures, pressures, and times. The raw material was well used since blubber, meat, and bones were all processed into whale oil and by-products, such as guano. Although the level of utilisation has varied over time, from company to company, and in accordance with different regulations in different areas, the whaling companies were technically able to use the whole whale carcass, unlike the early modern whaling industry, which only utilised the blubber and baleen.¹¹¹

The technological system associated with the modern whaling industry made it possible to hunt, kill, and process fast-swimming rorqual whales. This idea was not, according to Jackson, new when Svend Foyn picked it up in 1864.¹¹² Webb suggests that attempts to use a harpoon cannon to catch whales had already been made in 1784.¹¹³ Although this particular attempt was primitive compared with later attempts, the idea was an important step forward. Throughout the 19th century, a series of inventions and ideas were introduced. Some of these inventions and ideas were successful, while others were not. What they all have in common is that they represent small, vital steps in the modernisation of the whaling industry. Developments in whale hunting technologies

¹¹⁰ Hacquebord, L. *The hunting of the Greenland right whale in Svalbard, its interaction with climate and its impact on the marine ecosystem*. In: *Polar Research* 18:2, 1999. Pp: 375–382. See also: *Three Centuries of Whaling and Walrus Hunting in Svalbard and its Impact on the Arctic Ecosystem*. In: *Environment and history*, 7:2, 2001. Pp: 169–185, and Hacquebord, L, Steenhuisen, F, Waterbolk, HJ. *English and Dutch Whaling Trade and Whaling Stations in Spitsbergen (Svalbard) before 1660*. In: *International Journal of Maritime History* XV, No 2, 2004. Pp: 117–134.

¹¹¹ Hacquebord, L. *Whaling stations as bridgeheads for exploration of the Arctic Regions in the sixteenth and seventeenth century*. 1994. Pp: 289– 297. In: *International Conference on Shipping, Factories and Colonization*. See also: Hacquebord, L, Steenhuisen, F and Waterbolk, H. *English and Dutch Trade and Whaling Stations in Spitsbergen (Svalbard) before 1660*. 2003. Pp: 117–134. In: *International Journal of Maritime History*. XV. No 2.

¹¹² Jackson, G. *The British Whaling Trade*. 1978. P: 143.

¹¹³ Webb, R.L. *On the NorthWest – Commercial Whaling in the Pacific Northwest 1790–1967*. 1988. P: 122

took two different paths: hand-held devices in North America and fixed harpoon cannons in Europe.

The American hand-held devices included innovations such as the Pierce Gun, the Cunningham Gun, the Brand Gun, the Darting Gun, and the Rocket Harpoon, which were available on American markets from the 1850s.¹¹⁴ The limiting factor of this type of killing device was that salvaging the sinking carcass from the water was difficult. In addition, old traditions and fears of approaching the whales (which could result in death) left American whalers reluctant to try new technologies. However, American whalers from New Bedford, Nantucket Island, and California had decades of experience hunting sperm whales, which casts some doubt on whether fear to approach whales was really the reason for not adopting these new technologies. Socio-cultural and economical reasons may have played a role. Killing the whale was the role of the harpooner, which gave him a certain social role and status. These new technologies increased the operational costs, and their introduction corresponded with falling whale oil prices on the North American market. The economic incentive for investing in new technologies and organisational structures therefore appear to have been missing.

A solution to the problem of hauling the sinking whale from the water was Thomas W. Roys' invention – the whale raiser and compensator – which he introduced in the late 1850s.¹¹⁵ In 1865, Roys established a whaling station in Seydisfjord, Iceland together with his companion Gustav A. Lilliendahl. From here, they operated with the steam-powered whale hunting boat *Visionary*, using the rocket harpoon in combination with a 90 kg heavy whale raiser.¹¹⁶ Despite using a steam-powered boat to hunt the whales, they still made use of small hand-powered whaleboats for the actual kill.¹¹⁷ Their whaling project was short-lived. Tønnesen and Johnsen argue that it failed because of the heavy investments, the long distance to the market, and the outbreak of the

¹¹⁴ Davis. L.E, Gallman.R.E, Gleiter. K. *In Pursuit of Leviathan; Technology, Institutions, Productivity, and Profits in American Whaling, 1816–1906*. 1997. P: 283f. See also: Spence. B. *Harpooned; the story of whaling*. 1980. P: 94f. Bockstoce. J.R. *Whales, Ice, & Men; The history of Whaling in the Western Arctic*. 1986. P: 58f. Matthews. L.H (ed). *The Whale*. 1968. P: 126f.

¹¹⁵ In 1857 Thomas Welcome Roys patented his invention. For further reading see: Johnsen. A.O. *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*. Vol 1. 1959. P: 179 & 288.

¹¹⁶ Webb. R.L. *On the NorthWest- Commercial Whaling in the Pacific Northwest 1790–1967*. 1988. P: 125.

¹¹⁷ Davis. E.D, Gallman. R.E & Gleiter. K. *In Pursuit of Leviathan- Technology, Institutions, Productivity, and Profits in American Whaling, 1816–1906*. 1997. P: 291. See also: Johnsen. A.O. *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*. Vol 1. 1959. P: 84.

American Civil War, during which prices for whale oil plummeted on the American market.¹¹⁸ Davis et al. argue that technological flaws combined with poor managerial and business capabilities were the reasons for their failure.¹¹⁹ Nonetheless, Roys and Lilliendahl's new whale hunting technology played an important role in the technological development of modern whaling for two main reasons: firstly, because they introduced steam power, and secondly, because they invented and patented a compensator that prevented the whale rope from breaking by transferring power from the whale to the hull of the boat via a series of powerful rubber bands.¹²⁰ A similar version of the compensator, based on metal springs, was later patented by Foyn, while A. Ellefsen and E. Sommerfeldt patented the so-called weight accumulator.¹²¹ Before the Americans withdrew from Iceland, they were visited by the Norwegian Svend Foyn who became interested in the whaling industry.¹²²

While North American whalers preferred to use shoulder-held devices, the harpoon cannon was further developed in Europe. In 1837, William Greener introduced an updated version of the harpoon cannon that was fitted with an explosive tip. He had problems solving ballistics and harpoon trajectories, therefore his invention was, according to Jacobsen, regarded as a failure.¹²³

¹¹⁸ Tønnesen. J.N & Johnsen. A.O. *The History of Modern Whaling*. English Edition. 1982. P: 20.

¹¹⁹ Davis. E.D, Gallman. R.E & Gleiter. K. *In Pursuit of Leviathan- Technology, Institutions, Productivity, and Profits in American Whaling, 1816–1906*. 1997. P: 291

¹²⁰ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 76. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

¹²¹ Tønnesen. J.N. *Verdensfangsten 1883–1924- Del 1: 1883–1914*. Vol 2. 1967. P: 24. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

¹²² Johnsen. A.O. *Finnmarksfangstens historie 1864–1905*. In: Den modern hvalfangst historie – opprinnelse og utvikling. Vol 1. 1959. P: 75.

¹²³ Jacobsen. A. R. *Svend Foyn- Fangstpioneer og nasjonsbygger*. 2008. P: 115.

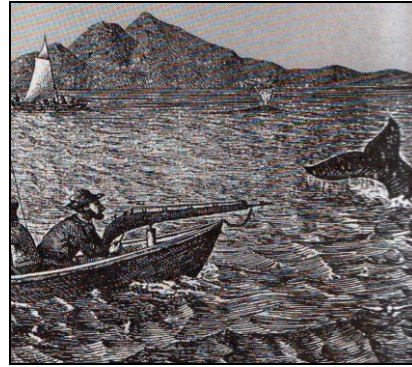
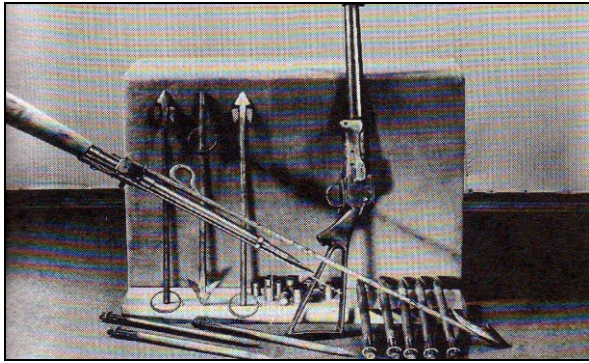


Fig 8 and 9. The North American Darting Gun and the European Greener Gun represent two different solutions aimed at solving the same problem: killing fast-swimming rorqual whales, such as blue and fin whales.¹²⁴

The idea to develop a system that allowed whalers to kill whales and salvage whale carcasses, re-surfaced in Norway during the 1840s with Jacob Nicolai Walsøe. Initially, he experimented with toxic harpoons. Although these killed the whales, the whalers had to wait for the carcass to decompose and resurface before they could process it. Furthermore, handling large quantities of toxins was hazardous and made the meat unsuitable for human consumption. In 1849, Walsøe got financial funding to develop his idea. A few years later, he demonstrated his invention, which fired an arrow-shaped projectile fitted with a delayed explosive charge.¹²⁵ The inventions attracted much attention from the Norwegian government as well as private actors, such as Svend Foyn,¹²⁶ whose financial contributions allowed Walsøe to continue his work.

Walsøe later realised that the system could only be successful if it was combined with steam-powered boats with enough speed to pursue and kill the whales. This idea was adopted by Foyn in 1863, when he designed and commissioned the building of the world's first purpose built whale catcher – the *Spes et Fides* (Hope and Faith).¹²⁷

¹²⁴ From Goddard, J. *A Window of whaling in British Columbia*. 1997.

¹²⁵ Johnsen, A.O. *Finnmarksfangstens Historie 1864–1905*. Vol: 1. 1959. P: 96. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

¹²⁶ The Norwegian government contributed with 300 speciedaler while Foyn, according to Jacobsen supplied another 100–150 speciedaler after having expressed his enthusiasm: “*I believe that the system would be functional for whaling. If the inventor is willing to correct the negative effects that might become visible during practical use, I am, if the inventor so wishes, more than willing to contribute with 100–150 speciedaler as it is my firm belief that a positive result is achievable*”. See: Jacobsen, A. R. *Svend Foyn- Fangstpioneer og nasjonsbygger*. 2008. P: 154.

¹²⁷ Risting, S. *Av Hvalfangstens Historie*. 1922. P: 110. The name which means “Hope & Faith” stood in line with Foyns religious conviction and functioned as a tool for his belief that it was mankind’s task to exploit Gods creation.

Dahl and Amici made, as Johnsen and Spence have pointed out, other important contributions to the development of the industry by combining similar killing devices with steam-powered boats.¹²⁸ In the early days of the development phase, it was not uncommon for the whale catchers to have several cannons that fired harpoons and grenades separately. The problem was not limited to combining the harpoon and grenade into one unit, like Walsøe and Dahl had done with relative success, but also to delay the explosion of the grenade until it had penetrated the whale's body to effectuate the kill. Together with a local priest named Esmark, Svend Foyn worked to find a solution to these problems. A few years later, the duo solved the problem, which completed the system and allowed all the technical artefacts to operate as one.¹²⁹

Svend Foyn – the heterogeneous engineer

By the 1850s, Foyn had become one of the most successful sealing entrepreneurs in Norway.¹³⁰ He was looking for new business opportunities and for new ways to exploit the seas. One way he did this was to keep updated with ideas and technical advancements that could potentially be used in sealing.¹³¹ However, as seal stocks declined in the late 1860s because of overexploitation, Foyn abandoned the sealing industry in favour of whaling.¹³² Foyn was a religious man who regarded nature as God's creation that was open to exploitation. He saw whales as "*a pest, which is of no use for mankind. On the contrary, they disturb the activities of the fishermen and cause the demise of boats and crews*".¹³³ In this context, technology represented a divine tool, which transformed the world into the Garden of Eden.¹³⁴

The greatest contribution of Svend Foyn's to the development of the industry was not, to use Simon Ramos' definition, in the direct invention and design of individual technical

¹²⁸ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol: 1. 1959. P: 93f, and 291. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling. For further reading, see also: Spence. B. *Harpooned: The story of whaling*. 1980.

¹²⁹ Jacobsen, A.R. *Svend Foyn- Fangstpioneer og nasjonsbygger*. 2008. P: 187.

¹³⁰ Jacobsen. A.R. *Svend Foyn- Fangstpioneer og nasjonsbygger*. 2008.

¹³¹ He had given financial support to Walsøe and he had visited both Roys & Liliendahls whaling enterprise in Iceland and with Amici in Denmark. During these meetings, Foyn curiously made notes and sketches in his diary.

¹³² Svend Foyn had completely abandoned the sealing industry in 1867 in order to focus his attention on whaling. For further reading, please see: Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 200f. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

¹³³ Jacobsen, A.R. *Svend Foyn- Fangstpioneer og nasjonsbygger*. 2008. P: 144.

¹³⁴ Hughes. T.P. *Human-Built World: How to think about Technology and Culture*. 2004. P: 10.

artefacts, but rather in shaping and finding a solution to make these function as *one* system.¹³⁵ Unlike other entrepreneurs before him, Foyn had the ability, interest, and financial power to create unity from diversity and to achieve what others; he did not focus on the individual elements but rather on the interfaces of these individual components to form an integrated system. Perhaps then, a more suitable title for Svend Foyn would be that of a *system-builder* or *heterogeneous engineer*.¹³⁶ This allows us to illuminate all actors and factors that contributed to the step-wise and trial and error process of developing the system, rather than awarding one actor the honour of its sole creator.

Why has the image of the single innovator dominated historical research on the modern whaling industry? One possible explanation is the ten-year patent right that Foyn was awarded by Norwegian authorities in 1872 for developing the industry.¹³⁷ The background for this patent can be linked to the industrialisation of northern Norway, and in that context can be interpreted as a strategic act by the Norwegian authorities aimed at keeping German actors from establishing whaling operations, which were regarded as potentially threatening to national economic and industrial interests. In contemporary political debates, nationalistic and protectionist arguments supported the idea to award Foyn a ten-year exclusive patent right in Norway for developing the technology.¹³⁸

Another important reason why Foyn's role as creator persisted is the general cultural and ideological trends at the time. Nationalism and social Darwinism figured prominently. These ideals promoted peaceful competition among civilised nation states, and art, science, exploration, industrial development, conquest, and physical strength

¹³⁵ According to him the design of a system are: *the design of the whole as distinct from the design of the parts, and is inherently interdisciplinary because its function is to integrate the specialised separate pieces of a complex of apparatus and people-the system-into a harmonious ensemble that optimally achieves the desired end.* See Simon Ramo in: Thomas P. Hughes *Rescuing Prometheus*. 1998. P: 69.

¹³⁶ Law. J. *Technology and Heterogeneous Engineering: The Case of the Portuguese expansion*. 1987. P: 111–134, and Hughes. T.P. *The Evolution of Large Technological Systems*. 1989. PP: 52f. In: *The Social Construction of Technological Systems- New directions in the Sociology and History of Technology*. Bijker.W.E, Hugher.T.P & Pinch. T (editors), Summerton. J. *Stora Tekniska System: En introduktion till forskningsfältet*. 1998. P: 25f. In: *Den Konstruerade Världen: Tekniska System i historiska perspektiv*. Blomquist. P, and Kaijser. A (editors).

¹³⁷ Johnsen.A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 208. In: *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*.

¹³⁸ Johnsen.A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 218–220. In: *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*.

played vital roles in these ideals. Friedmann has shown that Christian values and technological development were regarded as factors that separated civilised Europeans from indigenous people.¹³⁹ In this way, Svend Foyn became a hero capitalist and a symbol of Norwegian seaman who not only challenged the polar seas and the environment by carrying out a divine quest to exploit God's creation for the greater benefit of the nation,¹⁴⁰ but who was also naturally suited to doing so.

From the mid-19th century, Norway and Sweden industrialised rapidly. Within a few decades, Norway had become one of Europe's leading suppliers of wood and iron. While southern Norway experienced a wave of emigration to America as a result of the push and pull effect, where scarcity of land, failed crops, and unemployment at home stood against beliefs in a better life through the Homestead Act of 1862, northern Norway experienced the opposite. This population of this region grew, primarily through migration from southern Norway and an influx of kvener from Finland. According to Niemi, kvener represented 24% of the entire population in Finnmark by 1875. The two larger groups were indigenous Sami (34%) and Norwegians (42%).¹⁴¹ As a consequence, Finnmark went through a Norwegianization process in the 1870s, aimed at integrating the region to the remaining nation. Teaching the Norwegian language in school and promoting Norwegian culture was, as Bottolfsen has shown, part of the strategy used.¹⁴²

Furthermore, to restrict land ownership by Finnish and Sami populations, the Norwegian authorities introduced a law under which only Norwegians and Swedish nationals could gain ownership of land. To gain citizenship, one had to be fluent in Norwegian.¹⁴³ The background for this nationalisation process can be explained, according to Niemi, by Swedish–Norwegian fears of Greater Finland, which contemporary politicians regarded as an extension of Russia.¹⁴⁴ In the 1850s, Norway and Sweden had both signed the November Treaty, which aimed at limiting Russia's

¹³⁹ Friedmann.R.M. *Nansenismen*. 2004. P: 111. In: Norsk Polarhistorie . Vol: 2. Drivenes. A.E & Jølle.H.D. (editors).

¹⁴⁰ Eriksen. T.B. *Nasjonal stolthet og selvhevdelse*. 1999. P: 32. In: Norge Anno 1900- Kulturhistoriske glimt fra et århundreskifte. Rogan. B (editor). See also: Hougen. E. *Digte*. 1891. P: 74f. The author wrote a poem in the honour of Svend Foyn, entitled "Til Svend Foyn. Hilsen fra Tønsbergs arbeidere/ To Svend Foyn. Greetings from the workers of Tønsberg".

¹⁴¹ Niemi. E. *Streiftog gjennom Finmarks Historie*. 1979. P: 177. In: Finnmark. Hirsti.R (editor).

¹⁴² Bottolfsen. Ø. *Finnmark Fylkeskommunes Historie 1840–1990*. 1990. P: 171f.

¹⁴³ Bottolfsen. Ø. *Finnmark Fylkeskommunes Historie 1840–1990*. 1990. P: 172.

¹⁴⁴ Niemi. E. *Streiftog gjennom Finmarks Historie*. 1979. P: 178. In: Finnmark. Hirsti.R (editor).

access to territories in the north following the Crimean War.¹⁴⁵ Simultaneous to these developments, Svend Foyn established his whaling operations in north-eastern Norway. This meant that Foyn and his whaling enterprise could be used by political actors seeking to strengthen the nation. Therefore, the patent right may have supported these political motives and explain why Foyn was depicted as the father of modern whaling early on.

A new socio-technical system

The development of the modern whaling industry during the 19th century was a complex process of trial and error that involved several innovators, entrepreneurs, and different ideas in various contexts.¹⁴⁶ Many definitions of the modern whaling industry have focused on technical aspects,¹⁴⁷ ignoring other factors, such as organisation, species diversity, and utilisation of the raw material – factors that distinguish modern whaling from earlier whaling activities. The technologies used in the modern whaling industry were unlike those used during previous whaling activities. While the early modern whaling industry used rowing boats from which a hand-held harpoon and lance were thrown at single species (right whales), the modern whaling industry used a grenade harpoon fired from a steam-powered catching boat by the gunner and captain. This harpoon acted like a hook, which connected the whale to the whale catching boat by a line that was connected to a compensator and a steam winch. The winch enabled the crew to salvage the sinking whale once it was dead. Furthermore, the modern whaling industry hunted all whale species (although some were preferred more than others). To succeed in their task, all these entities had to work as one system. Although the old and the modern systems had the same aim – killing the whale – they very much differed in how this was achieved.

Whaling, its connected operations, and products include a production unit (shore-based whaling station or a factory ship) and the whale catchers – both of which were

¹⁴⁵ Niemi. E. *Streiftog gjennom Finnmarks Historie*. 1979. P: 179f. In: Finnmark. Hirsti.R (editor).

¹⁴⁶ Gustafsson. U.I. *A Science and Technology Studies (STS) Approach on the Evolution of the Modern Whaling Industry*. In: *Proceedings from the LASHIPA and BOREAS workshop in St. Petersburg, November 2009. Circumpolar Studies, Vol 8. 2011.*

¹⁴⁷ Johnsen. A. O and Tønnesen. J.O.H. *Den Moderne Hvalfangst Historie: Opprinnelse og utvikling*. 1959–1976. Vol 1–4, Risting. S. *Av Hvalfangstens Historie*. 1922. Jackson. G. *The British Whaling Trade*. 1978, Webb. R. L. *On the Northwest: Commercial whaling in the Pacific Northwest 1790–1965*. 1988.

dependent on and influenced by each other. Basberg argued that there is a strong resemblance between the two, which is why he wanted to call the whaling station “A Ship Ashore”.¹⁴⁸ The naval element is, according to him, enhanced using a common terminology for certain functions and working positions. While the terminology was common, one could argue that the organisation of whaling station operations was similar to most other company towns or industrial facilities at the turn of the 20th century, which often had similarly rigid hierarchical divisions and functions.

Whaling stations remained the dominant production platform for whale oil and guano until pelagic whaling developed in the Antarctic in the late 1920s. Although there were variations, most whaling stations had the following elements: 1) a production area with flensing and lemming platform, including cookeries for blubber, meat and bones, and a guano factory, 2) a storage area for whale oils, guano, fuels, and a piggery, 3) an accommodation area, 4) recreation or religious buildings like churches, football fields, cinemas, and a library, and 5) a steam engine house and freshwater supplies.

All whale parts contain oil. Whaling companies separated blubber, meat, and bones at different times because oil from each part needs to be extracted at different temperatures. Open cookers remained the dominant method until the turn of the 20th century, when pressure cookers became increasingly common. The pressure cookers were sealed at the top and reduced the effective cooking time and sped up production. They also reduced the consumption of valuable coal and freshwater reserves, which were often limited resources, especially in the polar regions. Despite this, open cookers were frequently used to melt the blubber since it gave better quality oil. However, technological developments were limited until 1910 because there were plenty of raw material, which Rosenberg called innovative responses to material shortages.¹⁴⁹ Later, as whale numbers increasingly depleted, more investment was made in technologies to improve processing and hunting materials. Hartmann and later the Kværner cookers were developed to maximise the yield of oil per whale. Also, catching boats were made larger and more powerful. Basberg suggests that the primary causes for this were the

¹⁴⁸ Basberg, B.L. *A Ship Ashore? Organisation and living conditions at South Georgia whaling stations, 1904–1960*. In: *International Journal of Maritime History*. Vol: XIV, No: 1, 2002.

¹⁴⁹ Rosenberg, N. *Perspectives on technology*. P: 249f. 1976.

movement to new hunting grounds and the transition to ice and pelagic whaling.¹⁵⁰

While some whaling companies chose to establish whaling stations, others used floating factory ships.

Until 1910, whale oil was commonly stored at the whaling station or onboard the floating factory ships in wooden barrels. Storing oil in barrels was inconvenient for several reasons. Firstly, barrels were expensive. Secondly, the barrels tended to leak, which meant that valuable oil was lost. Because of this, whale oil was sold per barrel and the price of the wooden barrel was commonly included in the price. After 1910, when the whaling industry had established itself permanently in the Antarctic, it became common to store and transport whale oil in large metal tanks, although it was still measured and sold per barrel and everyone working at the station had a share.

Access to freshwater and steam production were essential for all parts of whale oil production. The steam boiler house was commonly located in a central position and supplied power to the cookers and machinery. At some whaling stations, steam was also used to heat accommodation buildings and to provide warm water for hygiene. Constant access to freshwater was important. In South Georgia, the Subantarctic, the Antarctic, and in the no man's land of Svalbard (Spitsbergen and Bear Island), freshwater and harbours dictated where whaling stations and floating factory anchorages were established. In an attempt to secure constant access to water, some companies built dams. Elsewhere, like Svalbard, the whaling companies fenced in and claimed a piece of land to protect water resources and good harbours from competitors.

Storages were commonly located in the immediate vicinity of the production area. During the first decade of the 20th century, whale oil was stored in wooden barrels, which were expensive and tended to leak. After 1910, oil went through metal pipes directly into large metal tanks where it was stored until it was transported to the markets. Access to coal for steam production and heating was essential. In Svalbard, most whaling companies brought coal from mainland Norway and supplemented if necessary either by collecting it themselves or by buying from local coalmines. In South

¹⁵⁰ Basberg. B.L. Innovasjonsteori, patenter og teknologisk utvikling i norsk hvalfangst ca. 1860–1968. P: 109. Masters dissertation originally printed in 1980. 2015.

Georgia and Antarctica, the situation was different. The companies that operated here had to bring coal for the entire season, or have a cargo ship refill their stores during the season. Many whaling companies also brought livestock like pigs and hens to have fresh meat and eggs during the season. The piggeries and hen houses were often located on the outskirts of the whaling station. In South Georgia, whaling companies introduced Norwegian reindeer to be able to hunt and have fresh meat.

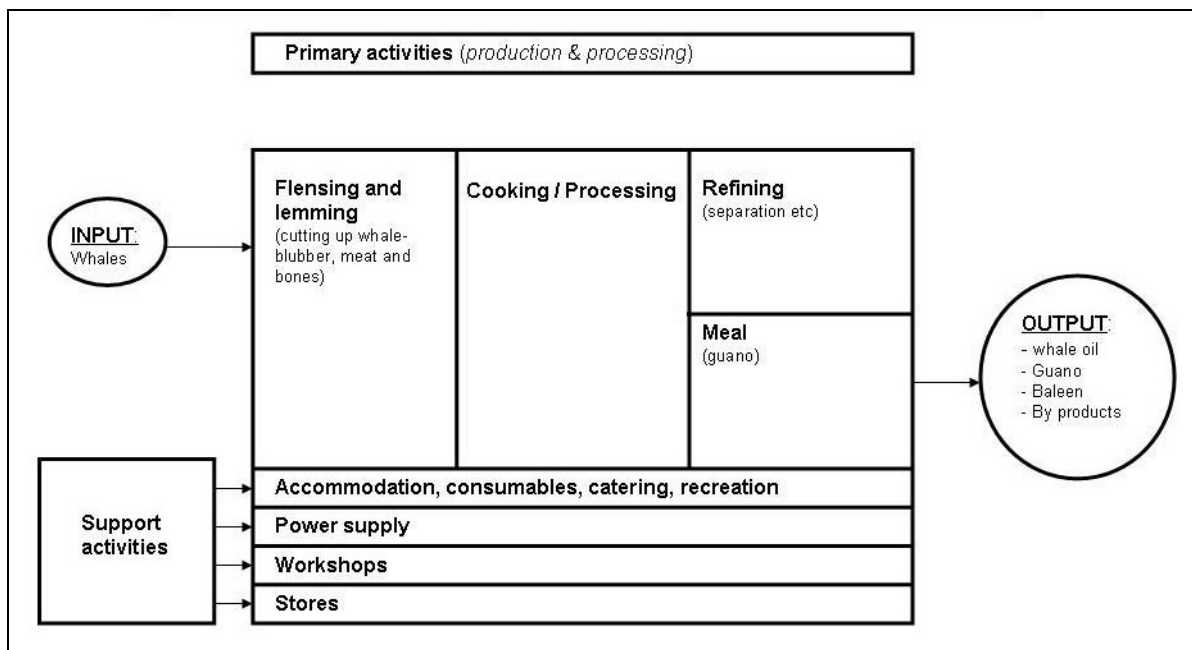


Fig 10. A general organisation of production in modern whaling. Whales supplied the raw materials and were processed into a variety of products through separation, cooking, and refining processes. Although the primary production remained concentrated to one area of the whaling station, the whole station was designed to maximise output and profit. Therefore, it is difficult to separate accommodation, power supply, and workshops as non-integral units of this network.

Floating factories and whale catchers

The early floating factories should not be confused with later pelagic floating factory ships that became more common in the late 1920s. The early factory ships were, according to Tønnesen, semi-pelagic commonly converted sailing ships that were equipped with a few cookers.¹⁵¹ During the first two decades of the 20th century, only a few ships were designed as floating factory ships – one of the first was Christen Christensen's Admiralen in 1905.

¹⁵¹ Tønnesen, J.N. *Verdensfangsten 1883–1924. Del II: 1914–1924*. 1969. Vol: 3. P: 38. In: Den Moderne Hvalfangst Historie.

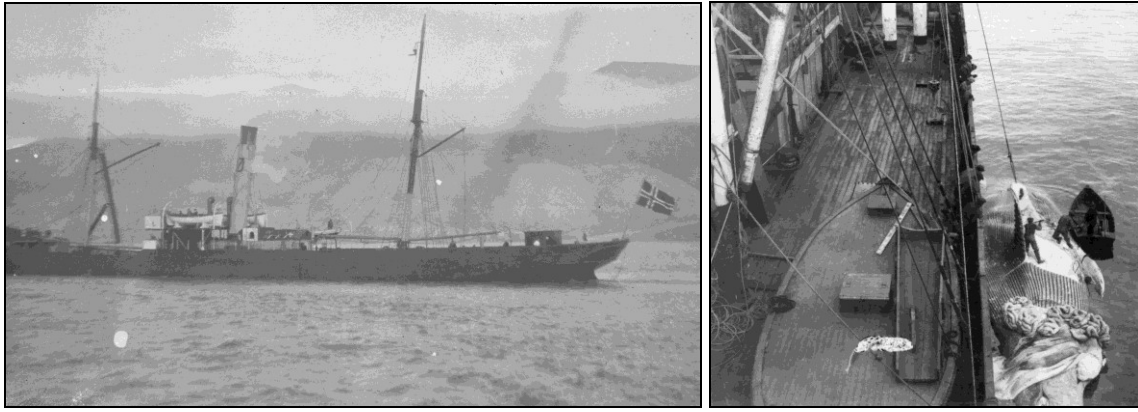


Fig 11 and 12. Christen Christensen's & A/S Ørnen's floating factory Admiralen at Spitsbergen in 1905, only a few months before the company moved their activities to Deception Island and Admiralty Bay in the Antarctic (left). A whale is being flensed by a worker alongside the hull of the ship (right). This is why these early factory ships needed sheltered bays to process whales. Note the small flensing boat beside the whale, which was used by the flensing workers, and the water barge on top of the deck, which was vital for collecting freshwater necessary to produce steam.¹⁵²

The whaling industry was constantly seeking new hunting grounds to exploit for economic profit. Profits could be increased by incorporating new technologies and developing the fleets. However, to exploit whale stocks in the open sea, technical developments in shipbuilding, design, and processing had to occur.

Hauling whales onboard for processing was not a new idea. Attempts to do so had been made by the Norwegian whaler M.A. Ingebrigtsen on Bear Island in 1906.¹⁵³

Ingebrigtsen tried again in Africa in 1908.¹⁵⁴ Other ideas and designs came from Th. Gjertsen, Davidsen, and many others.¹⁵⁵ Although the idea to process whales onboard in open waters had existed for a long time, there was no enticement for doing so since whales were plentiful and within the range of the whale catchers. Despite this, some whaling companies, such as A/S Quilimane of Norway, invested in new technologies like the Sommermeyers rotating cooker, a guano plant, and evaporators, which enabled them to produce freshwater in 1911–1912.¹⁵⁶

¹⁵² Left: Photo courtesy of the archival services of Michigan Technological University, USA; The Tibbitts collection. Right: Photo courtesy of the photo collection of the Norwegian Polar Institute in Tromsø.

¹⁵³ *Dagbog D/S Skytten. 1906.* National Library of Norway. Oslo. MS Fol 3905.

¹⁵⁴ The private archive of the Hay-Ingebrigtsen family, Norway.

¹⁵⁵ Tønnesen. J.N. *Verdensfangsten 1883–1924. Del II: 1914–1924.* 1969. Vol: 3. P: 47f. In: Den Moderne Hvalfangst Historie.

¹⁵⁶ Tønnesen. J.N. *Verdensfangsten 1883–1924. Del II: 1914–1924.* 1969. Vol: 3. P: 62. In: Den Moderne Hvalfangst Historie.



Fig 13. The wreckage of the floating factory ship *Guvernøren* (former *Thrøger*) of A/S Quilimane at Foyr Harbour, Antarctica. Photo: G. Rossnes. LASHIPA 8/2010.

Even though the output of the whaling industry reached new heights in the Antarctic hunting grounds, there was relatively little progression in pelagic technologies until Petter Sørrele introduced his innovative ship design in the 1920s. According to Tønnesen, the primary reason behind the development of the stern slipway was the increasing time spent whaling in ice-filled waters.¹⁵⁷ Sørrele's design was decisive for the opening of new hunting grounds within the Antarctic, such as the Ross Sea and the expansion of the industry to uncontrolled and unrestricted international waters. This expansion resulted in political negotiations to control the exploitation of whale populations rather than limiting measures to a geographically confined area.

The novelty of Sørrele's innovation was that it moved the flensing process onboard. His patent was not limited to the stern slipway, which allowed whalers to haul the whale carcass onboard; it also included trimming of the ship using the internal tanks, as well as a production line across the length of the deck under the bridge, which separated the

¹⁵⁷ Tønnesen, J.N. *Verdensfangsten 1883–1924. Del II: 1914–1924*. 1969. Vol: 3. P: 46. In: Den Moderne Hvalfangst Historie.

flensing deck from the lemming deck. These pelagic floating factory ships were large enough to supply a whole fleet of whale catchers with coal and supplies, to accommodate many workers, and to store large quantities of whale oil in its internal tanks. Building and fitting these ships were huge investments, and the ships had to perform and deliver huge outputs. The development of pelagic technologies was, as Tønnesen has shown, a progressive process that started with converted wooden sailing ships fitted with a few cookers and wooden barrels for storing whale oil, to larger ships with steel hulls and internal tanks, to the enormous pelagic factory ships of the 1920s with stern slipways, whale claws, onboard flensing and lemming platforms, and guano plants.¹⁵⁸



Fig 14, 15, and 16. Three steps in pelagic shipbuilding in 1905–1925; the whaling company Alfa & Betas converted the wooden sailing ship Hecla in Spitsbergen (left), a steel hulled factory ship at Deception Island, South Shetland Islands (centre), to A/S Globus and Petter Sørre's pelagic ship Lancing in 1925 (right).¹⁵⁹

The whaling fleet also included whale catching boats and cargo vessels that operated in conjunction with a whaling station or a floating factory ship. The whale catchers underwent constant changes, and they were often designed for the specific area in which they would operate. The early catchers in the polar regions often used shipbuilding technologies from the sealing industry, drawing on their experience operating in ice floes. Hull designs changed rapidly as the industry moved into the Antarctic and began operating under some of the world's toughest conditions. Commonly, the bow became higher to protect the gunner and the crew from large waves. Steam engines became even more powerful to increase speed and allow the catchers to pull in more whales.

¹⁵⁸ Tønnesen, J.N. *Verdensfangsten 1883–1924. Del II: 1914–1924*. 1969. Vol: 3. P: 60. In: Den Moderne Hvalfangst Historie.

¹⁵⁹ The photos have been published with the kind approval of the Norwegian Polar Institutes Library, Kommendør Chr. Christensen's Hvalfangstmuseum in Norway. The photo on the right has been scanned from the book *Husvik Harbour 1907–2007* published by Husvik and Nes Velforening, Historielaget. In 2007.

The industry used several types of boats and ships for different purposes. The ones that have been presented and discussed here represent only a few from the industry as a whole. In the later site chapters, I will discuss the organisation of production and technologies more.

To generate the high output and economic profit crucial to sustaining support from the global network, all units had to function as one uniform system. The task of the whale catchers, the gunners, and their crew was to hunt and kill whales, and bring them to the station or factory ship for processing. The crew and gunner on board the whale catcher were commonly paid by the number of whales and species they killed. The reason for this is very simple – the number of whales, species, sex, position, and season all determined how much oil could be extracted from each whale. Since it was the primary task of the whale catcher to supply the whaling stations with enough raw materials, the whaling companies adopted a salary system that encouraged the crew to kill as many whales as possible, and to focus their attention on larger whales, for which they were paid more.

Products from a new system

The narrow market and declining whale oil prices at the end of the 19th century prompted whaling companies to explore new ways of utilising the whales to create new products for new markets. The primary product was whale oil. According to Johnsen, whale oil was traditionally sub-divided into categories, varying from 0/1 to 4, depending on the quality of the oil, percentage of fatty acids, transparency, and smell.¹⁶⁰ This system was only used for baleen whale oil; oils from sperm whales were kept separate because of its wax-like consistency. Unlike other whale species, the digestion system of sperm whales contains spermaceti or ambergris, a substance which was sought after by the cosmetic industry as a fixative of scents. The classification system sustained until the first decade of the 20th century, after which laboratories became increasingly common on whaling stations to help produce better quality oil.

¹⁶⁰ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 493. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

Catch data from pre-1910 are scarce because source material is lacking. In contrast, datasets from after 1910 are relatively accurate since whaling companies were made to report catches and production annually to authorities. In many areas, this was the basis for taxation and costs for the annual concession. For the Antarctic, accessible data is regarded as relatively reliable thanks to an International Whaling Commission (IWC) project, which estimated that 1,393,254 whales were killed in the Antarctic between 1904 and 1978. From these whales, 83,360,382 barrels of whale oil were produced.¹⁶¹ These figures are based on statistical analysis of historical whaling records, such as logbooks, journals, and diaries. The purpose of the project was to try to obtain historical whale stock sizes, loss rates in fisheries, management strategies, and much more.¹⁶² Although uncertain and biased, these sources are the only data available to researchers for statistics analysis of whale stock sizes, geographical distribution, feeding and breeding patterns, catches, production, and utilisation.

Whale oil was, as previously mentioned, primarily used for margarine and soap production. It was, however, also possible to extract glycerine from the oil, which was used to produce explosives. Therefore, whale oil was increasingly politicised and sought after during the First World War. Because of this, whale oil from Antarctica was classified as contraband. During the war years, the British authorities, who controlled the whaling industry in the Antarctic through concessions, eased restrictions on the number of whale catchers each company could use, as well as their demands on utilisation to maximise whale oil output for glycerine production. Whaling was, as Basberg remarks, by far the most economically important industry in the Antarctic.¹⁶³

Guano and bone meal plants became a part of the production line at the whaling stations early on. Guano was produced from the residues of whale oil production, and was fed into a cylindrical and rotating metal tube that was connected to a furnace. The heat generated by the furnace was accelerated into the cylindrical tube by a metal blower. The combination of warm air and tube rotation dried and crushed the residues into a

¹⁶¹ Cummings. G. *History of the Christian Salvesen Company*. P: 15. In: *Whaling in the Hebrides- The History of Island Whalers in the South Atlantic and Whaling in and Around the Hebrides*. 2007.

¹⁶² Reports of the International Whaling Commission, Special Issue 5. *Historical Whaling Records- Including the proceedings of the International workshops on historical whaling records*. 1983. P: 1.

¹⁶³ Basberg. B.L. *The Subantarctic as source of human enrichment – The case of South Georgia*. In: papers and proceedings of the Royal Society of Tasmania, Volume 146, 2012. P: 83.

powder, which were packed in canvas bags and sold as fertilizer. Meat meal was, according to Johnsen, produced in a similar manner, and was sold on national and international markets as cattle food.¹⁶⁴ As prices varied between 8–14 NOK per 100 kg bag at the turn of the 20th century,¹⁶⁵ there was money to be made from utilising a greater percentage of the whale rather than discarding it, as had been done previously.



Fig 17. The guano factory at the former whaling station Prince Olav Harbour at South Georgia. Photo: U.I. Gustafsson. LASHIPA 6/2009.

Whale glue was another by-product of blubber and bone residues.¹⁶⁶ Harrison has shown that, much like consumables, glue (and other commodities) was commonly presented at fairs and markets across Europe, such as the Paris fair in 1889, where Svend Foyn was awarded a gold medal for his glue.¹⁶⁷ Some whaling companies also tried to sell canned whale meat for human consumption. In 1883, the first factory for

¹⁶⁴ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 515. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

¹⁶⁵ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 516. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

¹⁶⁶ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 517. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

¹⁶⁷ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 517. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling. See also: Harrison, L. H. *The Whale*. 1968 for more information on how whales have been used throughout history by various actors and cultural contexts.

canned whale meat was established in northern Norway. That same year, its products were already on display and received awards at the London fair.¹⁶⁸ In 1883, meat products were presented in Kristiania (present day Oslo). Newspapers reported that whale meat did not taste like fish liver but was rather similar to cattle meat in taste, but could be delivered at one-third the cost of cattle meat.¹⁶⁹ The following year, consumable products were successfully exhibited at a fair in Bremen. Nonetheless, these products were only a small percentage of whale produce and most of the meat was consumed at the whaling stations.¹⁷⁰ For several years, substantial amounts of canned whale meat and sausages were produced at the whaling stations in northern Norway.

According to Solhaug, whaling companies commonly dried and cleaned baleen, which they sold to companies in Germany, France, and Great Britain to be used in corsets, riding whips, umbrellas, and brushes.¹⁷¹ The baleen plates, which are only found on baleen whales such as blue, fin, and humpback whales, were cut out, cleaned, and washed in soda before being dried and pressed into 75 kg bundles for export.¹⁷² Until the turn of the 20th century, baleen represented a significant percentage of the annual profits until demands stagnated and prices dropped.¹⁷³ The average amount of baleen varied depending on the species (blue whales, 250 kg; fin whales, 125 kg; humpback whales, 100 kg; and sei whales, 80 kg). According to Johnsen and Risting, 60–440 tonnes of baleen were exported from Norway annually from 1890–1905.¹⁷⁴ These attempts at product diversification may illustrate concerns among the whaling companies of instability of the British main market prior to the successful hydrogenation process that changed the whale oil market.

¹⁶⁸ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 518. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

¹⁶⁹ Dansk Fiskeritidende. 1883. P: 252. See: Johnsen. A.O. (1959) P: 518, gives several examples of how the whaling companies tried to promote their products at fairs and markets.

¹⁷⁰ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 520. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

¹⁷¹ Solhaug. O. *Hvalfangsteventyret i Finnmark 1864–1905*. 1977. P: 35.

¹⁷² Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 520. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

¹⁷³ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 520. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

¹⁷⁴ Risting. S. *Av Hvalfangstens Historie*. 1922. P: 131, and Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol: 1. 1959. P: 522. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

The globalisation of modern whaling

Several authors have narrated the development and globalisation of the modern whaling industry. Although evolution of the industry was complex and involved a large number of actors, factors, nationalities, and cultural contexts, the early phase of the industry has commonly been described as a northern Norwegian story. The primary reason for this is that Svend Foyn and his followers established themselves and their system of whaling technologies in northern Norway. Jackson argued that the industry boomed in Norway because the technologies were available there, whales' migration routes were in immediate proximity, and the Norwegians had decades of sealing and fishing experience.¹⁷⁵

In 1883, the number of whaling companies operating in northern Norway increased from eight to 16.¹⁷⁶ By 1885, this figure has risen to 22 and they operated more than 33 whale catchers and employed 828 men, which, according to Solhaug, were primarily from southern Norway.¹⁷⁷ Whaling stations based on the same system were, according to Tønnesen, established in Iceland (1883), eastern Siberia and Korea (1889), the Faroe Islands (1894), Newfoundland and Labrador (1898), Japan (1899), and the Shetlands (1903).¹⁷⁸ In the early 1890s, whale oil prices rose briefly from £12.00 to £32.99 per ton,¹⁷⁹ and promoted exploratory surveys for new hunting grounds in the Antarctic. Throughout the 1890s, a few expeditions, such as Svend Foyn's Arctic expedition to Spitsbergen,¹⁸⁰ the Dundee expedition consisting of the *Balaena*, *Diana*, *Arctic*, and *Polar Star*,¹⁸¹ Christen Christensen's *Jason* expedition of 1892, and Svend Foyn's Antarctic expedition, went to the polar regions to survey the hunting grounds there.¹⁸² Although these expeditions reported abundant whale populations, there was little enticement to

¹⁷⁵ Jackson. G. *The British Whaling Trade*. 1978. P: 145.

¹⁷⁶ Johnsen. A. O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol: 1. P: 267. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

¹⁷⁷ Solhaug. O. *Hvalfangsteventyret i Finnmark 1864–1905*. 1977. P: 29.

¹⁷⁸ Tønnesen. J.N. *Noen problemer i den moderne hvalfangst historie*. P: 2. Sandefjord Library, The whaling Collection.

¹⁷⁹ Johnsen. A. O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol: 1. P: 506f. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

¹⁸⁰ Jacobsen. A.R. *Svend Foyn: Fangstpioneer og nasjonsbygger*. 2008. P: 277.

¹⁸¹ Jacobsen. A.R. *Svend Foyn: Fangstpioneer og nasjonsbygger*. 2008. P: 290.

¹⁸² Aagaard. B. *Oppdagelser i Sydishavet fra middelalderen til sydpolens erobring*. 1946. P: 41. In: Meddelsler, No 26. Norges Svalbard og Ishavs-undersøkelser. See also Aagaard. B. *Antarktis 1502–1944*. 1944. P: 42f. In: Meddelsler No 60. Norges Svalbard og Ishavs-undersøkelser, and Tønnesen. J.N. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol: 2. P: 230f. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling. Jacobsen. A.R. *Svend Foyn: Fangstpioneer og nasjonsbygger*. 2008. P: 290.

establish whaling stations at this point because whales were still plentiful in the existing hunting grounds. Furthermore, the predominantly poor market conditions of the 1890s did not entice the whaling companies to spread their activities to the hazardous waters of the Arctic and Antarctic. Instead, whaling companies invested further in their established facilities and adopted new strategies to improve utilisation and product diversification, as described above.

The local population often welcomed the whaling companies and their stations because they hoped they would bring employment opportunities and promote the financial situation of the region through increased taxation and revenues. However, to local frustration, few jobs were offered at the whaling stations and these were highly seasonal and low paid. Furthermore, the companies were reluctant to pay taxes to the local communities since they were already paying taxes in their home towns in the south. This meant that the initially good relationships between the local communities and the industry slowly turned negative. Johnsen suggested that the anger towards the whaling industry worsened as the cod stocks collapsed and catches dropped from more than 2 million to just 700,000 within a few years.¹⁸³ At the same time, bearded seal populations increased. Much of the blame was, as Risting has shown, pinned on the activities of the whaling companies. Anger was fuelled by the fishermen's belief that whales scared the cod into shallower waters where the fishermen could exploit them. As a result, removal of the whales by the whaling industry was responsible for the lack of cod.¹⁸⁴ That whales can be useful to man is, according to Matthews, mentioned in the Old Norse *Speculum Regale* or *Konungs Skuggsjá* from the year 1250 where the fish-driving skills of whales are described.¹⁸⁵ In an attempt to stabilise the developing anti-whaling attitudes, the Norwegian government sent marine biologist Johan Hjort to investigate the correlation between whales and fisheries. Hjort's conclusion that no such relationship existed simply fuelled the debate further.¹⁸⁶

¹⁸³ Johnsen, A. O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol: 1. P: 373. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

¹⁸⁴ Risting, S. *Av Hvalfangstens Historie*. 1922. P: 143. See also: Johnsen, A. O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol: 1. P: 585. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

¹⁸⁵ Matthews, L.H. *The Whale*. 1968. P: 19.

¹⁸⁶ Hjort, J. *Fiskeri og Hvalfangst i det nordlige Norge*. 1902.

In 1901–1903, collapsing cod stocks coincided with governmental interference in the important Pomor trade with Russia.¹⁸⁷ As a result, the anti-whaling movement, which included people, institutions, and organisations, turned into a class and national issue and people started calling for a whaling ban. This protest grew stronger and had an influence in the political elections. Agitated, the press asked “*what does Varanger mean? We have said it before and we say it again: It is a dangerous fjord, which in our time is twice as dangerous, when its beaches demarcate our border to the world’s most powerful nation. The Norwegian authorities should therefore grant it particular care*”, and continued to ask “*but where are the Norwegian people? Are they fed up with Finnmark and do they want to get rid of this part of the nation?*”¹⁸⁸ By June 1903, the alienated feelings and frustrations of the fishermen cumulated in an attack on Tanen whaling company’s station at Mehamn. Over two consecutive days, more than 2000 fishermen participated in destroying and hauling parts of its installations into the sea.¹⁸⁹

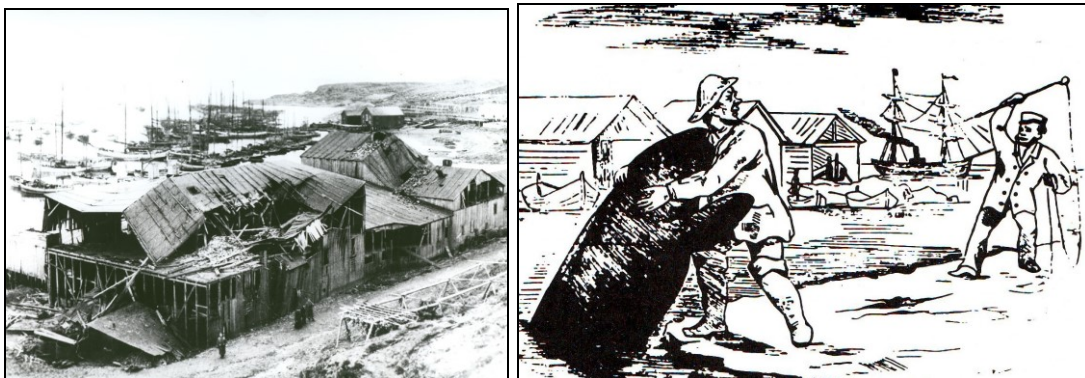


Fig 18 and 19. The remains of Tanens whaling station in Mehamn after the fishermen’s attack in 1903.¹⁹⁰
Right: A fisherman protecting a whale from being killed by Svend Foyn.¹⁹¹

According to Berg, the Norwegian government was afraid the northern population would develop unnational sympathies if the basis of their livelihood was threatened, so they swiftly proposed a new law.¹⁹² The law banned all whaling operations in the three northernmost counties for a period of 10 years, and stated that “*this law is in force from*

¹⁸⁷ Berg, R. *Norge på egen hånd 1905–1920*. 1995. P: 127f. In: Norsk Utenrikspolitikk Historie. See also: Westrheim, H. *Pomorhandelen*. 1979. P: 273–281. In: Finnmark. Hirsti, R (editor), and *Pomor. Nord-Norge og Nord-Russland gjennom tusen år*. 1992. Niemi, E. (editor).

¹⁸⁸ Johnsen, A. O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol: 1. P: 600. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling. Translated by author.

¹⁸⁹ Johnsen, A. O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol: 1. P: 609. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

¹⁹⁰ Photo collection for coastal-culture in Finnmark & restoration in Finnmark IKS, department. Gamvik Museum. Norway. Please note that the original photo has been edited by the author.

¹⁹¹ *Vikingen*, August 10, 1878. Re-printed from Johnsen. 1959. P: 385.

¹⁹² Berg, R. *Norge på egen hånd 1905–1920*. 1995. P: 18.

the 1st of February 1904. Whaling establishments that have been operational throughout 1903 will be allowed to continue their operations until one year after the mentioned date, but not with more catching boats than this year”.¹⁹³ The modern whaling industry, which had contributed to the industrialisation of northern Norway, had promoted nationalisation strategies, and had an important socio-economical effect in towns like Sandefjord, Tønsberg, and Larvik, was now banned in northern Norway.

The motive behind the 1904 ban was to strengthen national feelings in Finnmark, which was an important region in Norway. The number of people living there had grown steadily over the last few decades and these people could potentially vote against the government in coming elections in favour of left wing parties. Banning the whaling industry was an attempt by the government to gain popularity and avoid votes going to other political parties. The government in Oslo likely feared that its people had stronger ties with Russia after centuries of trade. This probably also played a key role in the government’s decision to ban whaling. One could therefore say that development of the modern whaling industry and the 1904 whaling ban were both geo-politically motivated events. The effects of the ban appear to have been limited. By that point, whale populations in northern Norway were severely depleted by decades of exploitation and competition and many whaling companies no longer operated in Norwegian waters. Instead, their whale catchers were stationed in Arctic waters throughout the hunting season and tug boats linked the catchers with the whaling stations, as described earlier.¹⁹⁴ Tønnesen argued that the ban was the reason the whaling industry moved into the polar areas.¹⁹⁵ Although the ban was an important factor, it does not completely explain why the industry established itself in the Arctic and Antarctic instead of less challenging seas.

In Iceland, where the whaling industry had operated since 1883, similar events and conflicts between the whaling industry and local fishing communities resulted in a ban of foreigners from hunting whales. Risting argues that politicians refrained from taking

¹⁹³ Johnsen. A. O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol: 1. P: 616. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling. Translated by author.

¹⁹⁴ Johnsen. A. O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol: 1. P: 575. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

¹⁹⁵ Tønnesen . J. N. *Noen problemer i den moderne hvalfangst historie*. P: 2. Sandefjord Library, The whaling Collection.

similar actions as in Norway because the industry was economically very important in Iceland.¹⁹⁶ However, in 1913, a new law was introduced that banned the exploitation of whales. In Newfoundland, the Shetlands, the Hebrides, and Ireland, similar opposition was raised, according to Dickinson.¹⁹⁷ Whaling also became a political affair in Great Britain when Balfour's Unionist Party argued that "*Norwegian whalers are conducting a business in British waters, which is so damaging for fish stocks that the Norwegian government banned whaling in its own territorial waters. Therefore, the Union Party believes that this matter demands the national protectionist policy*".¹⁹⁸

By the turn of the 20th century, the modern whaling industry was no longer a national affair. Whaling stations and companies had been established across the northern hemisphere where they interacted with and depended on actors and markets on an increasingly international scale. Although the industry was dominated by Norwegian entrepreneurs, technologies, and knowledge, its economic success attracted investors from Great Britain, Sweden, Argentina, Chile, Japan, and Russia. National governments and the industry ventured into areas where ownership and legal regime were uncertain. It is therefore important to analyse the whaling industry from an international perspective to explain why it became established in the polar regions.

Geo-political factors

So far in this chapter, I have discussed two factors that enabled the whaling industry to establish itself in the Arctic and Antarctic – demand for whale products on the world market and technological developments associated with modern whaling. In the following, I will discuss the third important factor, which, as discussed in the Introduction, has often been excluded – geopolitics.

¹⁹⁶ Risting, S. *Av Hvalfangstens Historie*. 1922. P: 185. See also: Alvestad, S. *Opposition to whaling in Scotland and Ireland before WW1*. 2006. P: 138. In: Whaling and History II- New Perspectives. Publication no 31. J.E. Ringstad (editor). Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

¹⁹⁷ Dickinson, A. B, and Sanger, C.W. *Twentieth-Century Shore-Station Whaling in Newfoundland and Labrador*. 2005. P: 31. See also: *Whaling in the Hebrides: The History of Island Whalers in the South Atlantic and Whaling in and Around the Hebrides*. 2008. Proceedings of a conference held in Harris in 2007.

¹⁹⁸ Tønnesen, J.N. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol. 2. P: 66. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling. Translated by author.

The political history of Svalbard has been thoroughly researched by several historians since the mid-1950's, such as Mathisen, Berg, Avango, Singh, and Arlov. Dodds, Sørlin, and others have studied similar processes in the Antarctic and the Subantarctic.¹⁹⁹ I will, to a large extent, base this overview on their research, and return to this theme in the chapters discussing individual sites, to discuss the role of the modern whaling industry in Svalbard's political history.

In the wakes of the Berlin conference, actors in Sweden, Russia, and Norway turned northwards for natural resources and to find answers to the geo-history of their respective nations.²⁰⁰ At the same time, as Wråkberg has shown, researchers were expected to report any potential natural resources they discovered that could be of use to the nation. Some researchers, like the Finnish–Swedish Adolf Erik Nordenskiöld, claimed land and established a station for research and phosphate mining.²⁰¹ His claim was quickly politicised as Norway and Russia protested. This started the geo-political process that ended up in the Spitsbergen Treaty in 1920, which granted Norway sovereignty of the archipelago. Historical ties, geographical vicinity, and economic activities were important tools that were actively used by many nations in this process – both at home and in Svalbard. Although the Netherlands had discovered the archipelago in 1596 and used it for two centuries, they did not claim sovereignty.²⁰² Berg has shown that Norway covertly started forming a strategy to gain sovereignty of the archipelago after the peaceful breakup of the union between Norway and Sweden.²⁰³

Norway was not alone; actors in Sweden and Russia had similar geo-political ambitions. In an attempt to solve this issue, three conferences were held in between 1910 and

¹⁹⁹ Dodds, K. *Pink Ice: Britain and the South Atlantic Empire*. 2002, Sørlin, S (editor). *Science, Geopolitics and and Culture in the polar regions*. 2013, Dodds, K, Hemmings, A, and Roberts, P (editors). *Handbook on the Politics of Antarctica*. 2017.

²⁰⁰ Sørlin, S. *Debatten om Norrland och naturresurserna under det industriella genombrottet*. 1988, Avango, D. *Sveagruvan: svensk gruvhantering mellan industri, diplomati och geovetenskap 1910–1934*. 2005. Wråkberg, U. *Vetenskapens vikingatåg: Perspektiv på svensk polarforskning 1860–1930*. 1999.

²⁰¹ Wråkberg, U. *Politik och vetenskap i A. E. Nordenskiölds ockupationsförsök av Spetsbergen år 1871–1873*. 1999.

²⁰² In spite of that Barents visit is the first documented one, Norway and Russia have performed archaeological excavations aimed at proving that their nationals were there before Barents, and thus extend their historic ties to the area.

²⁰³ Berg, R. *Norge på egen hånd 1905–1920*. Norsk Utenrikspolitikks Historie, Bind 2. 1995. P:151f.

1914.²⁰⁴ During the First World War, Norway and Sweden strengthened their respective positions by establishing new mining sites and companies and by performing research in the region. Once the treaty had been ratified, the geo-political motive to uphold industrial projects, research, and other activities declined rapidly. This, combined with rapidly declining prices for coal and other raw materials, meant that many industrial projects closed during the 1920s.

The Antarctic continent was and still is a no man's land that is governed by the Antarctic Treaty (1959). This has not prevented actors from making territorial demands to sectors in the name of their respective nations. At the turn of the 20th century, there was much uncertainty as to the legal status of much of the Subantarctic, as Klaus Dodds and Roald Berg have shown.²⁰⁵ In South Georgia and the South Shetland Islands, neither *Cia Argentina De Pesca* nor *A/S Ørnen* were met with formal protests from Britain or any other nation when they started their industrial activities there. As commercial interest increased, Britain reaffirmed its historic claims to South Georgia and the entire sector south of 50°S and between 20 and 80°W. Britain also claimed the South Shetland Islands through the Letters Patent of 1908. Howkins argued that the Letters Patent defined the legal title and status to the area in question that had existed for many years.²⁰⁶

According to Dodds, the legal title to the South Orkney Islands was ceded to Argentina in 1914.²⁰⁷ In 1917, however, a new Letters Patent was issued that clarified the extent of the Falkland Islands Dependencies on the Antarctic mainland, including South Georgia, the South Orkney Islands, and the South Shetland Islands. The British territorial ambitions and control over the resources and industrial activities in the Antarctic and the Subantarctic changed during the First World War. As whaling activities diminished and third party recognition of British sovereignty was reduced, Britain had to find other ways to uphold control and manifest ownership. Operation Tabarin was, as Dodds pointed out, launched in 1943–1944 to strengthen Britain's occupation in the Antarctic

²⁰⁴ Berg. R. *Norge på egen hånd 1905–1920*. Norsk Utenrikspolitikks Historie, Bind 2. 1995. P:164f. See also: Ulfstein. G. *The Svalbard Treaty: From Terra Nullius to Norwegian Sovereignty*. 1995.

²⁰⁵ Dodds. K. *Pink Ice: Britain and the South Atlantic Empire*. 2002. Berg. R. *Norge på egen hånd 1905–1920*. Norsk Utenrikspolitikks Historie, Bind 2. 1995. P:147ff.

²⁰⁶ Howkins. J.A. *Frozen Empires: A history of the Antarctic sovereignty dispute between Britain, Argentina, and Chile 1939–1959*. 2008. P: 236.

²⁰⁷ Dodds. K. *Pink Ice: Britain and the South Atlantic Empire*. 2002. P: 17.

and Subantarctic.²⁰⁸ During this operation, a number of bases (such as base A, base B, base C, base D, and base E) were established – of which some are still operational today. In addition to establishing several buildings, signposts were placed in the surrounding landscape with the inscription “British Crown Land”.



Fig 20 and 21. Signposts of this type were erected in the landscape close to the stations that were erected during operation Tabarin.²⁰⁹ Right: Base A at Port Lockroy. Photo by Ulf I. Gustafsson. LASHIPA 8/ 2010.

There are still overlapping territorial claims in the Antarctic and Subantarctic. Although all territorial claims are frozen through the Antarctic Treaty, it is still important to maintain presence through research, tourism activities, post offices, and the production of maps to promote and strengthen claims.

Conclusions

In this chapter, I have pointed out four overarching contexts that dictated the establishment of the whaling industry in the Arctic and Antarctic – market demand for products manufactured from dead whales, technological innovations, new socio-technical systems for whaling, and the geo-political situation in the polar areas.

Nineteenth century industrialisation altered almost everything. It had far ranging socio-economic effects as income levels rose and people could afford to buy more products. This increased the demand for various commodities, such as oil, fat, soap, margarine, textiles, and luxury products as people started living in more confined urban societies.

²⁰⁸ Dodds. K. *Pink Ice: Britain and the South Atlantic Empire*. 2002. P: 14.

²⁰⁹ British Antarctic Surveys Archives. Ref: AD6/19/1/A504/6.

These societal changes occurred parallel to romantic and Darwinist ideals, which inspired a fascination for the unknown wild, from the Alps to the Arctic. In Scandinavia, industrialisation took a northern direction, focused on utilising natural resources in what was often described as the land of the future.

The modern whaling industry was a part of this process. Attempts to adapt, transform, and modernise the industry to exploit and process large, fast swimming rorqual whales already started in the 18th century. The demands for cheap oil, such as vegetable, mineral, and whale oil rose in increasingly industrialised, techno-based, and populated western societies. This created incentives for the modern whaling industry to increase oil production. The economic actors and scientific knowledge associated with the second industrial revolution promoted the development of modern whaling and research on the solidification of liquid oil into hard fats (hydrogenation) as the expanding margarine and soap factories needed access to large amounts of raw materials. The success had positive socio-economic effects that extended beyond national borders. It created a diversified international market for the whaling industry, which drove prices up and attracted investment. By the first decade of the 20th century, market demands for whale oil promoted the spread of whaling stations to new prosperous hunting grounds in the Arctic and Antarctic where resources were abundant. In these regions, the industry had to conform and adapt to new legal regimes – or the lack thereof – and was often used as a tool by actors with geo-political motives, regardless of whether the industry itself supported these ambitions and goals.

The four contexts described in this chapter strongly influenced the development of the modern whaling industry in the polar regions, and the establishment of whaling stations there. In the following chapters, I will discuss and analyse the driving forces behind the expansion of four former whaling stations in the Arctic and Antarctic, and the actor networks involved in establishing and sustaining these over the period 1904–1931.

3. The modern whaling industry in the Arctic – an introduction

Ever since Willem Barentsz discovered Spitsbergen (Svalbard) in 1596, human activities there have largely been involved in resource exploitation and research. Hacquebord has shown how British, Dutch, German, and Danish whaling companies exploited whales here during the 17th and 18th centuries, and how this resulted in over-exploitation and collapse of right whale stocks.²¹⁰ Jasinski has described how and why Pomor trappers from northern Russia frequented the archipelago during the 18th and 19th century, and how they established a network of basecamps and outposts there.²¹¹ In the 19th and 20th century, Norwegian hunters started operating here too, initially competing with the Pomors for resources. According to Rossnes, they hunted a variety of species.²¹²

While commercial ventures dominated human activities in the 17th and 18th century, research became increasingly dominant in the 19th century. Researchers like Kielhau, Andersson, Torell, De Geer, Nordenskiöld, Nathorst, and many others provided insights into the archipelago's geo- and biological history,²¹³ often with funding from actors with commercial interests or who wanted to be connected to the “aura” of polar research.²¹⁴

In the second half of the 19th century, the modern whaling industry developed into a global industry with numerous whaling stations across the northern hemisphere. The hunt for new potentially prosperous hunting grounds encouraged whaling companies to send out exploratory expeditions to investigate the waters of the Arctic and Antarctic. In 1891, Svend Foyn sent a semi-pelagic expedition to Spitsbergen to investigate the whaling grounds there.²¹⁵ Although they discovered that whaling could potentially be successful there, Foyn's attempts resulted in huge material and financial losses when the

²¹⁰ Hacquebord, L. *Niederländischer und deutscher Walfang im 17. Jahrhundert*. 1999. Pp: 91–104. In: Nordfriesische Seefahrer in der frühen Neuzeit. Of the same author: *Smeerenburg. Het verblijf van Nederlandse walvisvaarders op de westkust van Spitsbergen in de 17de eeuw*. 1984. See also: Conway, M. *No Man's Land. A History of Spitsbergen from its Discovery in 1596 to the Beginning of the Scientific exploration of the country*. 1906.

²¹¹ Jasinski, M. *Russian hunters on Svalbard and the Polar Winter*. In: Arctic Journal. Vol 44, No 2. 1991. P: 156–162.

²¹² Rossnes, G. *Norsk overvintringsfangst på Svalbard 1895–1940*. In: Norsk Polarinstitutt, Meddelser No 127, 1993.

²¹³ Sörlin, S. *Rituals and Resources of Natural History – The North and the Arctic in Swedish Scientific Nationalism*. In: Narrating the Arctic – A cultural history of nordic scientific practices. 2002. Sörlin, S and Bravo, M (editors). Pp: 73–124.

²¹⁴ Wråkberg, U. *Vetenskapens vikingatåg: Perspektiv på svensk polarforskning 1860–1930*. 1999.

²¹⁵ Risting, S. *Av Hvalfangstens Historie*. 1922. P: 244.

company lost its factory ship, *Isbjørnen*.²¹⁶ This project was nonetheless an important step since it proved that it was technically and logistically possible to exploit fast swimming fin whales in the polar regions. The whaling industry in northern Norway had, as described earlier, successively diversified its production and changed its organisation to extend their hunting range and output. These measures were adaptive steps to changing market conditions and increasing competition for resources in Norway.²¹⁷ Instead of having the whaling station as a base for whale catchers, several whaling companies tried to extend the operational range of their whale catchers using steam-powered tug boats to bring whales back to the station. This approach increased the available hunting grounds. The whale catcher was commonly stationed at Bear Island throughout the hunting season, while the tug boats linked the whaling station in northern Norway with the whale catchers – transporting resources, fuels, and food between the two.²¹⁸

The objective of this chapter is to discuss the development of the modern whaling industry in this part of the European High Arctic from 1904 to 1931. This will provide a background for two case studies presented in the following chapters. I will describe and discuss the technologies the companies used, how they organised their activities, and how they adapted their operations to the environmental and legal conditions at Spitsbergen and Bear Island.

Svalbard

Svalbard is an archipelago in the European High Arctic located approximately 800 km north of mainland Scandinavia. The largest of these islands is called Spitsbergen. This was also the formal name of the whole archipelago until it was changed by Norway when the Spitsbergen Treaty was ratified in 1925. The archipelago is approximately the size of Denmark and 60% of the island is permanently covered by glaciers. While the west coast of Spitsbergen is dominated by the pre-Cambrian Caledonian mountain chain, the inner part of the island and the east coast primarily consist of sedimentary rocks.

²¹⁶ Jacobsen, A.R. *Svend Foyn- Fangstpioner og nasjonsbygger*. 2008. P: 277.

²¹⁷ «*Dagbog D/S Skytten. 1899–1910*». National Library of Norway. Oslo. MS Fol 3905. See also: Johnsen, A.O. *Finnmarksfangstens Historie 1864–1905*. 1959. P: 554. In: *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*, and Risting, S. *Av Hvalfangstens Historie*. 1922. P: 624f.

²¹⁸ Johnsen, A.O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol 1. P: 575. In: *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*.

Bear Island, which is located approximately 400 km south of Spitsbergen, is a part of the same fold belt. Large parts of the fjords on the west coast are accessible throughout the summer due to the Gulf Stream, while fjords on the east side are more inaccessible due to sea ice.

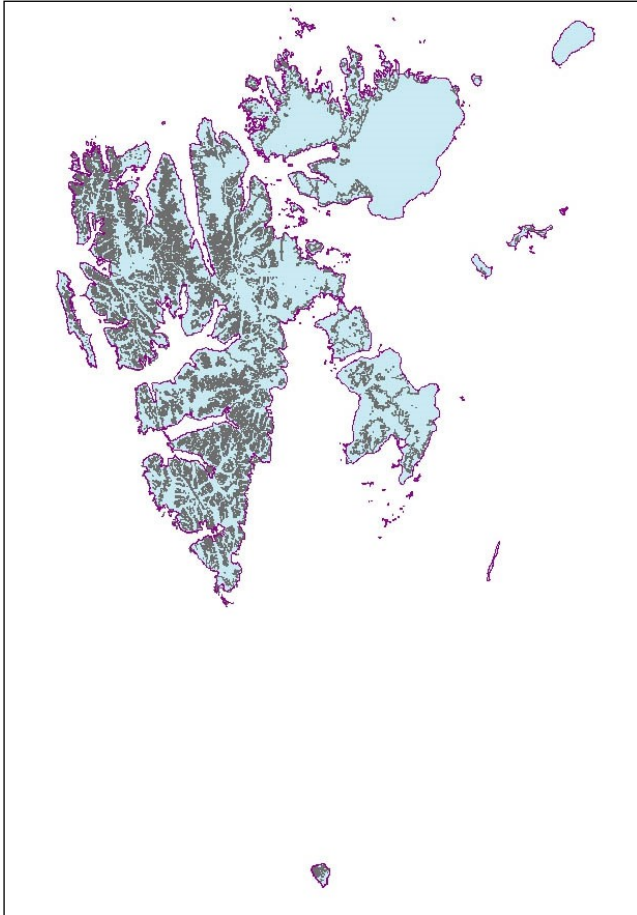


Fig 22 Map of the Svalbard archipelago. Map by U.I. Gustafsson. Data provided by the Norwegian Polar Institute.

During winter, most of the archipelago's fjords are covered in ice, with drift ice along the coasts. By June, the fjords are accessible. Ice coverage has, like in most areas in the Arctic, changed substantially in the 20th century.

The beginning of modern whaling in Svalbard

Existing literature has explained that the move of modern whaling to Spitsbergen and Bear Island in 1903 was natural and logical. Firstly, the distance between northern Norway and the archipelago is relative short. Secondly, the whaling ban introduced in 1904 forced the whaling industry to move north.²¹⁹ Tønnesen has also depicted the

²¹⁹ Norsk Hvalfangsttidende. No 10. October 1919. P: 170. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord, Norway. See also: Tønnesen. J. N. *Noen problemer i den moderne hvalfangst historie*. P: 2f. Sandefjord Library.

industrial activities of the modern whaling industry in the Arctic as a precursor to the Antarctic whaling industry,²²⁰ as well as an intermezzo.²²¹ In fact, the modern whaling industry had already established itself in the Arctic prior to the 1904 ban. This shift was motivated by competition for increasingly scarce living marine resources in northern Norway. It is true that the distance from northern Norway to Spitsbergen and Bear Island is relatively short (approximately 800 km). This, combined with the knowledge the whaling companies had collected, means that a move northward was perhaps logical. Furthermore, expansion of the modern whaling industry to the Arctic and Antarctic was a parallel event rather than two separate ones, therefore whaling in the Arctic cannot be regarded as a precursor to whaling in the Antarctic. In fact, the first whaling station in the Antarctic was established once year before the first whaling station in the High Arctic.

Some whaling companies that initially operated in the Arctic moved their operations to the Antarctic when these hunting grounds became the largest in the world. The knowledge and experience these companies gained in Spitsbergen and Bear Island was probably useful, since they knew what it meant to operate in polar conditions.

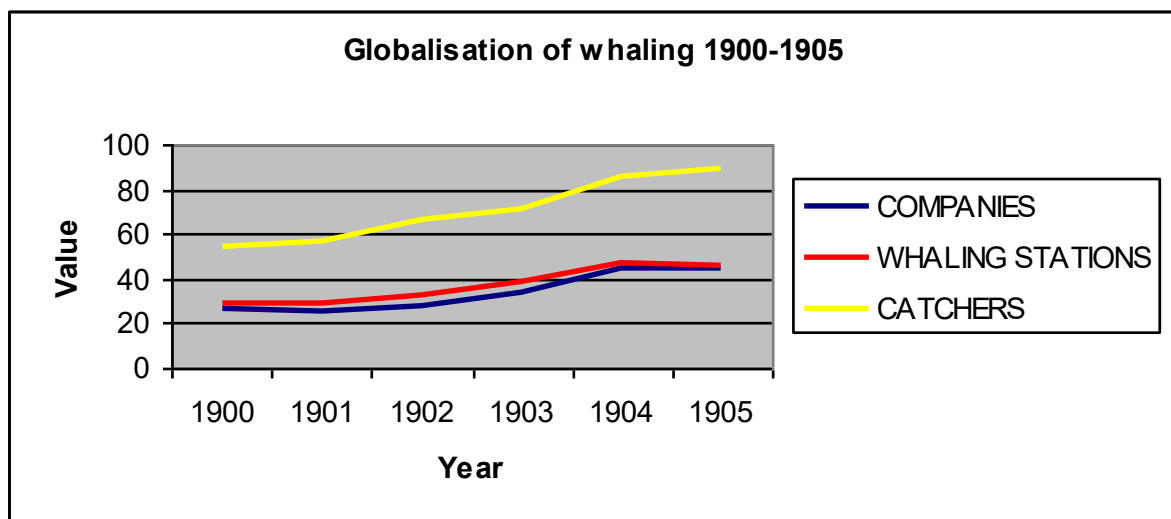


Fig 23 Global development of the modern whaling industry 1900–1905.²²²

²²⁰ Tønnesen, J. N. *Verdensfangsten 1883–1924. Del 1: 1883–1914. Vol 2.* 1967. P: 84f. In: Den Moderne Hvalfangst Historie-Opprinnelse og utvikling.

²²¹ Basberg, B.L. *In the wake of Tønnesen and Johansen: Trends in Whaling History Research after 1970.* Discussion paper. 2005. P: 8.

²²² Based on Johnsen, A.O and Tønnesen, J.N. 1959–1970. Vol 1–4. Den Moderne Hvalfangst Historie-Opprinnelse og Utvikling.

The move to and permanent establishment of the modern whaling industry in the polar regions was not easy. The Arctic and the Antarctic have harsh climates and lack necessary components needed for industrial activities.²²³ Moreover, no state authority was present in these areas, and the legal status was often unclear if not unsettled and conflicted. Consequently, whaling companies needed big investments and contractors long before they started production and generated an income. Because of these circumstances, companies had to work out strategies to adapt to these local environmental and political circumstances.

The first Norwegian whaling company to establish permanent whaling operations in Spitsbergen was Christen Christensen's whaling company A/S Ørnen in 1903. The company based their operations on the 450 ton semi-pelagic factory ship *Telegraf*, which was stationed in the bays of Spitsbergen.²²⁴ M.A. Ingebrigtsen also hunted in Spitsbergen during this summer, but had not yet moved his base northwards. In its first whaling season in Spitsbergen, A/S Ørnen caught 57 whales and made a profit of Kr20 000.²²⁵ Compared with the combined catch of 42 whales for all companies operating in northern Norway in the same season, the expedition must have been regarded as a huge success. Perhaps more importantly, the expedition showed that it was not only technically and logistically possible to exploit and process fin whales in arctic waters, but also profitable, even though the company had to base all their industrial activities on an untested factory ship platform.

Over the following years, another seven whaling companies moved their operations northwards and established themselves in Spitsbergen (Svalbard after 1926). This process has been well described by Risting and Tønnesen.²²⁶ Most companies established themselves in Bellsound on the west coast of Spitsbergen. Here, they could find deep and sheltered anchorages, plenty of freshwater, and be close to the main hunting grounds off the west coast.

²²³ Jackson, G. *The British Whaling Trade*. 1978. P: 153f.

²²⁴ Risting, S. *Av Hvalfangstens Historie*. 1922. P: 245.

²²⁵ Tønnesen, J. N. *Verdensfangsten 1883–1924. Del 1: 1883–1914. Vol 2*. 1967. P: 90. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

²²⁶ Risting, S. *Av hvalfangstens historie*. 1922, and Tønnesen, J. N. *Verdensfangsten 1883–1924. Del 1: 1883–1914. Vol 2*. 1967. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

After 1908, however, the number of whaling companies fell and a shift occurred from Bellsound to Icefjorden further north. One reason for this shift may be the easier access to coal, since several coal mines operated in the Isfjorden area.

Factory ships and shore-based operations

During the first decade of the 20th century, a total of eight Norwegian whaling companies established themselves in Spitsbergen and Bear Island. Most of these whaling companies chose to base their industrial operations on floating factory ships. Contemporary media argued that this technical solution made them *“less dependent on the stand point taken by Norwegian authorities towards whaling as a whole, as well as taxes, medicinal costs, and so on. Whalers operating with a floating factory have yet an additional advantage since it allows them to operate and exploit larger hunting grounds compared with a stationary production unit”*.²²⁷ Although this is a press statement, it probably reflects how the whaling entrepreneurs felt after the prolonged conflict in northern Norway, where they believed they had been sacrificed by the Norwegian authorities in favour of a political strategy.²²⁸ The same statement also had rhetorical and economic purposes since the Norwegian government compensated the whaling companies for not being able to carry on their activities in northern Norway. To maximise the compensation, the industry exaggerated the importance and economic value of northern Norway as a hunting ground.



²²⁷ Norsk Fiskeritidende. 1903. P: 588. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord, Norway.

²²⁸ For further reading, please see chapter two.

Fig 24 and 25. Floating factories operating in Spitsbergen. Right: Young workers onboard the floating factory Hecla of the whaling company Alfa & Beta in Green Harbour. The photos have been published with the kind approval of the Norwegian Polar Institute.

Contemporary media argued that using semi-pelagic platforms would eventually lead to a mass slaughter of whale stocks because the whaling companies could position themselves almost wherever they desired.²²⁹ At the turn of the century, however, the factory ships did not have these abilities and could not operate and process whales in a true pelagic sense – they were still dependent on land for shelter, access to freshwater, and for storing goods like barrels and coal. It is reasonable to ask why six whaling companies chose this approach for their operations despite the restricted capability and low utilisation it presented. One explanation may be that the companies had doubts about the whaling grounds in Spitsbergen and Bear Island. The choice could also have been influenced by contemporary perceptions of the Arctic as an environmentally difficult region to establish industrial operations in. Svend Foyn's failed attempt of 1891 demonstrated that operating in the Arctic was difficult, and it is not unlikely that other companies feared that they would suffer similar material and economic losses.

In 1903, one company operated with two whale catchers. Two years later, eight companies operated 16 whale catchers in these waters.²³⁰ Consequently, competition for resources and freshwater harbours increased. Already in 1903, several whaling companies sent representatives to Spitsbergen to secure a harbour and a small piece of land on behalf of the whaling company they represented.²³¹ The archaeological field work I have conducted within the framework of the LASHIPA project shows that companies aimed to secure land that contained an abundant supply of freshwater, as well as being dry and protected enough to allow them to store barrels and coal supplies, which were vital for whale oil production. At these sites, the companies erected claim boards with information about the extent of their claim, and these boards were signed

²²⁹ Tønnesen, J.O.H. *Verdensfangsten 1883–1924. Del II: 1914–1924. Den Pelagisk fangst 1924–1937*. 1969. Vol: 3. P:40. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*".

²³⁰ Risting, S. *Av Hvalfangstens Historie*. 1922. P: 262f.

²³¹ Gustafsson, U. I. *Industrialising the Arctic: Settlement design and technical adaptations of modern whaling stations in Spitsbergen and Bear Island*. 2010. In: *Whaling & History III*. Publication No 33, Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. Ringstad, J. E (editor). Pp: 47–58.

by witnesses. Some also erected huts, which were practical but also marked their claim to the site.

Out of the eight whaling companies that established themselves in Spitsbergen and Bear Island, two chose to establish whaling stations. These stations were established at Finneset on Spitsbergen and at Walrus Bay on Bear Island. Throughout their operational lifespan, these two whaling stations were owned by four different companies, all of which will be dealt with in the following chapters. The modern whaling industry in Spitsbergen and Bear Island developed rapidly.

Activities and results

As the number of companies increased, so did the whale catches and production of whale oil. In 1905, whale oil production peaked at approximately 17,500 barrels.²³² In 1906, the season was challenging for the whaling companies operating in Spitsbergen, and catches dropped significantly compared with the 1905 season.²³³ In 1906, the company with the best results in Spitsbergen was A/S Nimrod with a catch of 55 whales. On Bear Island, M.A Ingebrigtsen caught 60 whales and a large percentage of these were blue whales.²³⁴ The companies argued that whales were scarce in the western Spitsbergen and storms and fog hindered whale catchers from scouting and catching whales. This made it difficult for the whale catcher and tug boat crews to navigate the waters and catch the few whales they spotted. Although the companies and their employees had extensive experience operating in harsh conditions from northern Norway, the constant fear of ice was a new environmental hazard that the companies had to adapt to.

In an attempt to adapt to these harsher conditions, several whaling companies sent small expeditions along the shores of Bellsound and Recherchefjorden on the west coast of Spitsbergen to collect whale bones that were scattered along the shores.²³⁵ According to Tønnesen, whaling companies cut these bones into smaller pieces and processed

²³² Risting. *S. Av Hvalfangstens historie*. 1922. P: 262f.

²³³ See chart below.

²³⁴ "Dagbog D/S Skytten. 1906". National Library of Norway. Oslo. MS Fol 3905. See also: Risting. *S. Av Hvalfangstens Historie*. 1922. P: 262.

²³⁵ Norsk Fiskeritidende. 1907. P: 73. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

them into whale oil and a few thousand bags of guano.²³⁶ These companies used floating factory ships and had no onboard capability to process bones, which needed to be cooked at a higher pressure than blubber. According to a contemporary coal mining company, the Arctic Coal Company, a land-based production facility was constructed in Recherchefjorden, which the companies used jointly to process collected whale bones.²³⁷ Another source suggests that the Norwegian whaling company A/S Ørnen established a primitive shore-based cookery in 1905 for processing whale meat into 100 barrels of whale oil in an attempt to increase the utilisation of the whales.²³⁸ The level of utilisation among the companies that operated in Spitsbergen was generally low since the floating factories only had capability to process blubber. Consequently, a large part of the raw material was discarded after the whalers had flensed the whale. This resulted in a large number of whale carcasses on the beaches of Bellsound and Recherchefjorden.



Fig 26. Land-based construction along the shores of Recherchefjorden on Spitsbergen. The photo was taken by an unknown employee of the Arctic Coal Company in 1913. The photo has been published with the kind permission of Michigan Technological University, USA.

In 1907, the whaling fleet was obstructed from reaching their anchorages by a large belt of sea ice, which extended from north-western Spitsbergen to just south of Bear

²³⁶ Tønnesen, J.O.H. *Verdensfangsten 1883–1924. Del II: 1914–1924. Den Pelagisk fangst 1924–1937*. 1969. Vol: 3. P: 6. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*'.

²³⁷ The Longyear Collection. The Archival of Michigan Technological University. Houghton, Michigan, USA. Ref: No reg 2007-07-26-04.

²³⁸ *Norsk Hvalfangsttidende*. No 10. October 1919. P: 214. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord, Norway.

Island.²³⁹ To avoid getting trapped in the ice, the whaling companies positioned their ships alongside the edge of the sea ice, where they hunted and processed whales alongside the ships. In mid-June, the sea ice broke up and the companies could use their whale catchers and tug boats to push the ice floes away from the factory ship, carving a path to access their claimed harbours and territories along the west coast of Spitsbergen.²⁴⁰

It is noteworthy that many whalers believed whale stocks were larger than the numbers indicated, despite the declining catches. They blamed the sea ice, fog, and irregular distribution of whales for their low number of catches.²⁴¹ Three whaling companies chose to cease their operations in Spitsbergen, and either cancel or transfer their operations to new and potentially more prosperous hunting grounds elsewhere. Some moved their operations to the west coast of Africa, South Georgia, or to the South Shetland Islands.

A similar situation, with many ice-blocked harbours and declining catches, occurred in 1908.²⁴² Because of declining catches, more whaling companies chose to withdraw from these hunting grounds in favour of other areas. In 1905, the whaling company A/S Ørnen left Spitsbergen for the South Shetland Islands in Antarctica.²⁴³ The motivation for this move probably came from articles in Norwegian newspapers that Cia Argentina De Pesca were hugely successful in South Georgia, with 51 whales caught in less than one month. It is difficult to estimate what effect the success of Antarctic whaling companies had on attracting investors and industrialists in Norway and elsewhere to whaling projects in the European High Arctic. It is, however, reasonable to assume that it became increasingly difficult to maintain the support of arctic projects by global networks as the future and profitability of these projects looked bleak. Nonetheless, two

²³⁹ Norsk Fiskeritidende. 1908. P:22. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

²⁴⁰ Norsk Fiskeritidende. 1908. P:21f. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

²⁴¹ Norsk Fiskeritidende. 1908. P:23. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

²⁴² Norsk Fiskeritidende. 1909. P:16. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

²⁴³ *The Diary of Alex Lange 1904– 1907/08*. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. See also: Tønnesen. J. N. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. Vol 2. 1967. P: 306. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

whaling companies chose to maintain their operations.²⁴⁴ These will be discussed more in chapters 4 and 5.

Modern whaling and geo-politics

The archipelago's legal status as a no man's land and the process that ended with the Spitsbergen Treaty of 1920 were discussed in the previous chapter. This mostly dealt with the political arena in the states concerned; it gave little information on how natural resource interests, such as the modern whaling industry, acted in relation to this issue. The purpose here is to do just that.

The whaling companies claimed land for their shore-based production activities using various symbols, such as claim boards, huts, and fences. Their stations, coal stores, and barrels on the shores fulfilled similar functions, serving practical needs while at the same time indicating that the land was claimed. Theoretically, these objects were non-human guards of these sites or actants.²⁴⁵ These actants were placed at prominent positions in the landscape to be visible from a long distance. Similar rituals of possession have been performed for centuries by governments and actors who sought to create what they regarded as a legitimised dominion and sovereignty over a certain territory. Depending on their cultural background, the different actors used different symbols to achieve their goals.²⁴⁶

The whaling companies designed their strategies for claiming land as a way of adapting to the legal status of Spitsbergen and Bear Island as no man's land. The implications of this status have been analysed and described by several researchers, including Berg (1995), Wråkberg (1999), Mathisen (1954), Singh (1980), Hoel (1966), and Arlov (2003). The legal status of no man's land meant that the archipelago was open to anyone for exploration and exploitation. The whaling companies regarded these conditions as favourable, since they did not have to comply with any state regulations that might have

²⁴⁴ Risting, S. *Av Hvalfangstens Historie*. 1922. P: 256. See also: Gustafsson, U. I. *Industrialising the Arctic: Settlement design and technical adaptations of modern whaling stations in Spitsbergen and Bear Island*. 2010. P: 56. In: *Whaling & History III*. Publication No 33, Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. Ringstad, J.E (editor). Pp: 47–58.

²⁴⁵ See Avango, D. *Vägen till Bragazavågen: Artefakter och geovetenskap som resurser för svensk kolbrytning på Svalbard*. 2004. In: *Artefakter*. Widmalm, S and Fors, H (editors). Pp: 27–60. See also: Avango, D. *Aktanter I Ingemanslandet: Den svenska gipsbrytningen på Svalbard*. 2003. P: 176. In: *Industrins Avtryck: Perspektiv på ett forskningsfält*. Avango, D and Lundström, B (editors). Pp: 173–206.

²⁴⁶ Seed, P. *Ceremonies of possession in Europe's conquest of the New World 1492–1640*. 1995. P: 179.

restricted their activities. Nor did they have to pay taxes.²⁴⁷ However, the no man's land status also posed challenges. There was no state authority to give the whaling companies a concession for catching whales and building whaling stations. In other words, the companies did not have a state sanctioned legal title to their hunting grounds and stations and therefore had to protect them by other means. Marking land with non-human actors was one way of doing this. An informal practice on what was regarded as a legitimate way of claiming land – and what was not – developed between the actors that operated there.²⁴⁸

It appears that the whaling companies studied how other actors dealt with the issue, in particular actors within the emerging coal mining industry, such as the German Theodor Lerner (1898) and the Norwegian Søren Zachariassen (1899). These two actors demarked their territorial claims with steel wire and erected wooden claim boards, which stated the name and extent of the claim, including the date of the occupation and witnesses present. Together with a map, they reported these claims to their respective foreign ministries to validate them.²⁴⁹ The foreign ministries followed up by sending out notes to other nations about the claim. If no one opposed, it was regarded as valid. This was the informal practice that the companies had to adapt to. After performing these rituals of possession, the companies could establish and build their local networks.



Fig 27, 28, and 29. Claim boards by three different whaling companies (A/S Spitsbergen, A/S Nimrod, and Thor Dahl), which were erected in Spitsbergen. The photos (left and centre) have been published with the kind approval of the Norwegian Polar Institute. The photo on the right was taken by the author in the collections of the Svalbard Museum.

²⁴⁷ Gustafsson, U.I. *Modern Whaling in Spitsbergen as a tool for territorial claiming and national sovereignty strives*. 2008. P: 19. In: *Industrial Patrimony: resources, practices, cultures*. Publication No 19, (T.I.C.C.H.I) The International Committee for the Conservation of Industrial Heritage. Pp: 17–24.

²⁴⁸ Avango, D. *Vägen till Bragazavågen: Artefakter och geovetenskap som resurser för svensk kolbrytning på Svalbard*. 2004. P: 40. In: *Artefakter*. Widmalm, S and Fors, H (editors). Pp: 27–60.

²⁴⁹ Mathisen, T. *Svalbard in International Politics 1871–1925. The solution to a unique international problem*. 1954. P: 41. Skrifter No 101. Norsk Polarinstittutt.

Avango (2005) and Arlov (2003) have shown that the states involved in negotiating the legal status of Spitsbergen used the mining industry on the archipelago to support their positions – including the land these companies had claimed using the aforementioned actants.²⁵⁰

Although Spitsbergen and Bear Island both had a status of no man's land, the competition over natural resources and territories there played out very differently. The first countries to show a political interest in Bear Island were Germany and Russia at the end of the 19th century. While Germany used a state supported company named Deutsche Seefischerei Vereins to claim the island, Russia used a man-of-war ship named Svetlana. In 1899, the German company established a large building at present day Hertwichamna to claim the land. Here, they brought ashore a steam-powered locomobile and *fleischehackmaschine*, which they used to cut up the seven whales they caught.²⁵¹ The purpose of the project was a part of a covert German strategy initiated by Emperor Wilhelm II to claim the island for Germany and create a foothold for the nation in the north.²⁵² Emperor Wilhelm II frequently visited Norway. In 1891 and 1892, he visited northern Norway, where he was invited to take part in whale hunting on board the whale catcher Nancy Grey of the Anglo-Norwegian Fishing Company.²⁵³ It is not unlikely that this visit contributed to the Emperor's decision to occupy Bear Island by establishing a whaling base there. Despite this German state initiative, it was a private German entrepreneur named Theodor Lerner who first claimed the island, including some of the best harbours. Even though the project failed, the activities of the Deutsche Seefischerei Vereins at Hertwichamna represent the first modern attempt to exploit the whale populations around the island.

²⁵⁰ Avango, D. *Vägen till Bragazavågen: Artefakter och geovetenskap som resurser för svensk kolbrytning på Svalbard*. 2004. Arlov, T.B. *Svalbard's historie*. (2nd revised edition). 2003.

²⁵¹ Henking, H. "Die Expedition nach der Bäreninsel im Jahre 1900". In: Mittheilungen des Deutschen Seefischerei-Vereins, XVII (2). 1901. Pp: 1–88.

²⁵² Barthelmess, K. "The Bear Island Expedition of the German Sea Fisheries Association as Camouflage for Secret German Government Plans to Occupy the Island, 1897–1900". 2000. P: 441. In: Aspects of Arctic and Sub-Arctic History. Editors: Sigurðsson, I, and Skaptason, J. See also: Barthelmess, K. "Bäreninsel 1889 und 1899: Wie Theodor Lerner eine Geheimmission des Deutschen Seefischerei-Vereins zur Schaffung einer Deutschen Arktis-Kolonie unwissentlich durchkreuzte". 2009. Pp: 67–71. In: Polarforschung 78 (1–2).

²⁵³ Ytreberg, N.A. "Tromsø Bys Historie". Vol: 2. 1962. P: 212.



Fig 30 and 31. Remains of the fleischhakkemaschine of the Deutsche Seefischerei Vereins at Hertwichamna. Photo: Gustav Rossnes. LASHIPA 5/2008. Right: The Deutsche Seefischerei Verein processing a minke whale at their station in Hertwichamna on the northern coast of Bear Island.²⁵⁴

The case of Emperor Wilhelm II at Bear Island shows that state actors tried to use the whaling industry as a tool to gain influence or even claim sovereignty in Spitsbergen. As Thor Bjørn Arlov has suggested, a few years later, the presence of Norwegian whaling companies in Spitsbergen provided the Norwegian government with a similar opportunity.

The Norwegian government made its first moves to gain influence in Spitsbergen in 1906. In January 1907, the Norwegian Foreign Ministry invited nationals who had economic interests in the archipelago for a meeting. The purpose of this meeting was to map and investigate the extent of Norwegian presence and economic activities in the archipelago. Prior to the meeting, the Ministry had sent out questionnaires to the whaling company managers to find out how many catching boats were used, the number of employees, the size of boat crews, and how many whales were caught. They also asked how many barrels of whale oil were produced and what the profits were. The most significant question was whether whaling companies operating in Spitsbergen and Bear Island had experienced problems because of the no man's land status of the archipelago.²⁵⁵ The meeting was held at the Foreign Ministry, and representatives of different enterprises participated, including Ingebrigtsen who represented the whaling industry. At this meeting, the answers to the questionnaires were discussed. The

²⁵⁴ Photo published with the kind permission of Senckenberg Natural History Museum. Germany.

²⁵⁵ Norsk Fiskeritidende. 1909. P: 17. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

managers of the whaling companies reported that they had not in any way experienced problems with the legal status of the archipelago.²⁵⁶

The whaling companies and their managers had good reasons for reporting this, since they feared that new governmental regulations and concessions would be introduced, similar to the ones experienced in Norway, if the nation was granted sovereignty. By this time, whale catches had been declining for several years. Morten Andreas Ingebrigtsen downplayed the importance of the whaling industry in Spitsbergen and Bear Island, and argued that its economic activity hardly provided a basis for a Norwegian claim of the archipelago. Ingebrigtsen's opinion was backed by the famous explorer and scientist Fridtjof Nansen. Nevertheless, the activities of the whaling industry in Spitsbergen and Bear Island were, from the Norwegian government's point of view, not without significance. At the time, the Norwegians were engaged in exploiting the archipelago's natural resources, which could have been used to promote geo-political ambitions.

The main conclusion of the meeting was that the whaling industry could not form a basis for Norwegian sovereignty of the archipelago by itself.²⁵⁷ However, a need for regulating claims was acknowledged and it was agreed that the Foreign Ministry should work out international rules on use and property rights.²⁵⁸ From 1908, the Norwegian Foreign Ministry started supporting Norwegian mining companies and Norwegian scientific research at Spitsbergen. After 1910, as Foreign Minister Johannes Irgens came into office, the Norwegian government intensified this strategy.²⁵⁹

In 1911, Irgens summoned two scientists to his office and assigned them with a secret strategy designed by the Foreign Ministry.²⁶⁰ This strategy involved a series of "scientific" expeditions to conduct research, but also to claim land and natural resources. The two scientists were told to form private companies to defend the territory and

²⁵⁶ Norsk Fiskeritidende. 1909. P: 18. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

²⁵⁷ Arlov.T.B. *Svalbards Historie 1596–1996*. 1996. p: 347.

²⁵⁸ Berg. R. *Norge på egen hånd 1905–1920*. In: Norsk Utenrikspolitikks historie Bind 2. 1995. p: 158

²⁵⁹ Mathisen. T. *Svalbard in international politics 1871–1925-The solution of a unique international problem*. Norsk PolarInstitutt, Skrifter no: 101. p: 70. 1954. See also: Gustafsson. U.I. *Modern Whaling in Spitsbergen as a tool for territorial claiming and national sovereignty strives*. In: Industrial Patrimony/ Patrimoine de L Industrial. 2007.

²⁶⁰ Tromsø Statsarkiv. Norway. Det Konglige Utenriksdepartementet. Beretning. Miljøverndepartementet. Norsk PolarInstitutt. Norges Svalbard og Ishavsundersøkelser (NSIU) 1928. Vol: 0085: E-Korrespondanse of saksdokumenter.

exploit the resources. The Foreign Minister stressed that under no circumstances could this plan be linked to the Foreign Ministry.²⁶¹

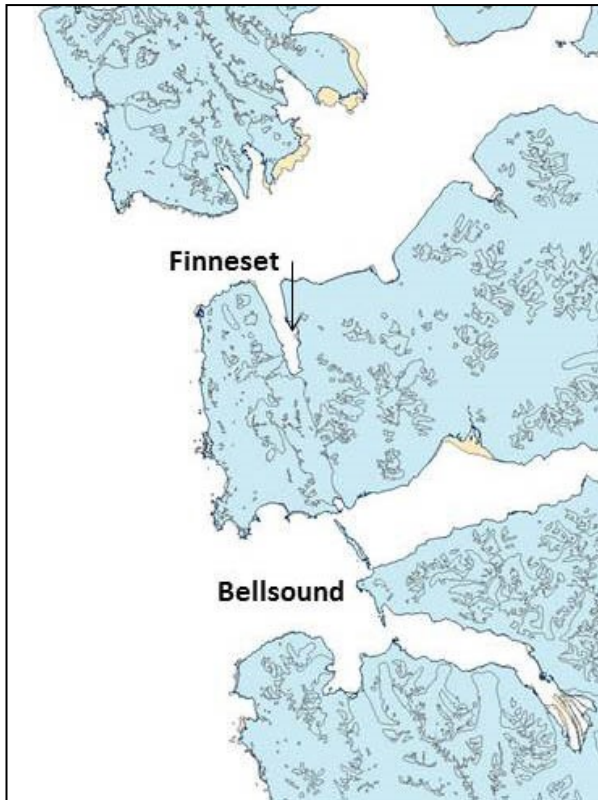


Fig 32. There was intensive competition for good harbours located close to the primary hunting grounds off the west coast of Spitsbergen. Map by U.I. Gustafsson.

These expeditions became known as De Norske Statsunderstøttede Spitsbergen ekspedisjonene (NSIU). Norway's interest in Spitsbergen, Bear Island, and other polar areas increased during the 1890s, as actors from other nations tried to establish colonies there. Norwegian historians argued that Norwegians had long traditions here, dating all the way back to 1194.²⁶² Norwegian hunters did have long traditions in the archipelago, much like the Russians did, but the Norwegians lacked, as Drivenes points out, the scientific traditions that Sweden had.²⁶³ To counteract this, NSIU was established. While the official task of the expeditions was to map sea- and land areas and to do scientific work, their covert task was to claim natural resources on Spitsbergen

²⁶¹ Tromsø Statsarkiv. Norway. Det Konglige Utenriksdepartementet. Beretning. Miljøverndepartementet. Norsk PolarInstitut. Norges Svalbard og Ishavsundersøkelser (NSIU) 1928. Vol: 0085: E-Korrespondanse of saksdokumenter.

²⁶² Drivenes. E-A. *Svalbardforskning og Svalbardpolitikk 1870–1925 - Forskere som politiske aktører*. In: Nordlit 29, 2012. P: 48.

²⁶³ Drivenes. E-A. *Svalbardforskning og Svalbardpolitikk 1870–1925 - Forskere som politiske aktører*. In: Nordlit 29, 2012. P: 49.

and to create companies that could uphold the rights to Norway's claims, either by renewing claims or by exploiting resources.

During the first decade of the 20th century, Norwegian whaling companies appeared to have little interest in supporting the geo-political agenda of their government in Spitsbergen. However, this appeared to change after 1911 when the two whaling companies that still operated in Spitsbergen were visited by the NSIU expedition. I have not been able to find any sources about what they discussed, but it is reasonable to assume that NSIU expedition members encouraged the whaling companies to increase their territorial claims. They had already done so with Norwegian mining entrepreneurs and the Norwegian whaling companies increased their territorial claims in Spitsbergen afterwards. Thus, these two Norwegian whaling companies may have actively supported the Norwegian government's ambitions to claim Spitsbergen for a period of time. Their geo-political role was small, however, in comparison with the mining industry and scientific expeditions.

The whaling companies used the Norwegian Foreign Ministry and NSIU as allies in their global networks. They used them in case of territorial disputes, since the Foreign Ministry had registered all their claims to land there. They could count on similar support from the scientific community, which was part of NSIU. Their primary task was to increase and secure control over large areas on behalf of the nation. It seems likely that they and the maps they produced supported and legitimized the claims of the Norwegian whaling companies when they were challenged.



Fig 33. De Norske Statsunderstøttede Spitsbergenekspedisjonene visiting Finneset whaling station in 1911. Photo courtesy of the Norwegian Polar Institute Archive.

During the First World War, a large number of mining companies were established and claimed large territories. In addition to these, a telegraph station was built at Finneset in 1911 by the Norwegian state. The combined effect of the scientific work, established mining companies, whaling industry, and the telegraph station strengthened Norway's position on the archipelago during the first two decades of the 20th century.

The legal status of Spitsbergen remained a no man's land until 1920, when the issue was solved at the Versailles negotiations, which granted sovereignty to Norway through the *treaty concerning the Spitsbergen archipelago including Bear Island*. At the same time, actors from signatory nations were given equal rights to exploit resources on the archipelago. After the ratification of the treaty in 1925, Norway formally took over sovereignty of the archipelago and introduced the name Svalbard.

Environmental conditions

In addition to the legal status of Spitsbergen and Bear Island, the whaling companies had to adapt to the environmental conditions in this part of the Arctic, in particular the sea ice.²⁶⁴ On several occasions, the sea was frozen in the fjords, preventing access to the harbours until late summer. Whaling companies could not access their anchorages or whaling stations, and had to adapt their operational structure. While some companies anchored alongside the edge of the sea ice where they flensed and processed whales, other companies tried to cut their way through the ice.



Fig 34. Summer sea ice extent in the European High Arctic in the spring and summer of 1907.²⁶⁵

These environmental conditions, combined with recurring fog, made it difficult for the whale catchers to operate and hunt whales. Fog also made sailing hazardous, since they risked hitting an ice flow and damaging the ship. This shortened an already short arctic

²⁶⁴ Isachsen. G. *Isforholdene omkring Spitsbergen 1907*. 1907. Pp: 120–125. In: Det Norske Geografiske Selskaps Aarbok 1906–1907. See also: Norsk Fiskeritidende. 1908. P:22. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway, and Norsk Fiskeritidende. 1909. P:16. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

²⁶⁵ Isachsen. G. *Isforholdene omkring Spitsbergen 1907*. 1907. Pp: 120–125. In: Det Norske Geografiske Selskaps Aarbok 1906–1907.

hunting season. There were few hunting grounds where sea ice had such an influential and dictating role in the success of industrial projects as in Spitsbergen.²⁶⁶

Renewed interest in arctic hunting grounds

During the First World War, whaling grounds in the European High Arctic once again became a target of the modern whaling industry. In 1915, L.M. Christensen from Tønsberg attempted to re-open the whaling station at Finneset for three consecutive seasons.²⁶⁷ Christensen was one of the most important suppliers of buildings for whaling stations across the world. From 1908, he started investing and became more active within the whaling industry in the northern hemisphere.²⁶⁸ The motive for renting Finneset whaling station was to exploit the blue, fin, sei, minke, and humpback whale populations in the North Atlantic ocean. They believed that these populations had recovered since whaling had ceased in Iceland, the Hebrides, Ireland, and Norway. Christensen believed that exploiting these whale populations from a whaling station in Spitsbergen could be profitable.²⁶⁹ His business idea was to supply the domestic market with oil and fat, which was scarce due to the First World War.

During the war, Great Britain declared whale oil as contraband and ceased control over the entire whale oil production because it could be used for war-time purposes. The needs on the domestic market could not be met, meaning projects like Christensen's could potentially be profitable. The attempt was, however, a complete failure as the entire expedition, which consisted of 125 men, was caught in the ice.²⁷⁰ It eventually had

²⁶⁶ Risting. S. *Av Hvalfangstens Historie*. 1922. P: 266.

²⁶⁷ "Letter to Mr. M de C. Findlay of the British delegation in Kristiania. December 18, 1915". Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. Archive: Hvalfangerforeningen. Diverse Pakkesaker. Vol 3. 1912–1922.

²⁶⁸ Sørensen. G, Hoff. J.O, Halvorsen. L & Salicath. C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 46. In 1908, he founded Arranmore Whaling Co with a base in Ireland, and three years later he purchased a whaling station in Iceland.

²⁶⁹ Norsk Hvalfangsttidende. 1916–1917. No 5. May 31, 1916. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

²⁷⁰ "Letter from Scott Turner, general manager of the Arctic Coal Company, to the Arctic Coal Company. October 3, 1915". Archive of Michigan Technological University. Houghton, USA. Archive: Arctic Coal Company. Scott Turner Collection. Box: CC, Fldr: CC13.

to return to Norway without catching a single whale.²⁷¹A second attempt was planned for the following year, but that also failed since Christensen had not been able to obtain any whale catchers.²⁷²

The dominance the whaling industry had during the first decade was never regained. From 1908 onwards, the mining industry became the dominant industrial activity in the archipelago. Unlike the modern whaling industry, the mining industry developed into an international activity. Despite this, whaling companies continued to exploit resources in the area until 1938. One of these companies was Spitsbergen Hval. This whaling company was owned and managed by the Norwegian Morten Andreas Ingebrigtsen and his son. They rented and re-opened Finneset whaling station from the mining company Store Norske Spitsbergen Kullkompani in 1920.²⁷³ This attempt was motivated by the belief that whale stocks in the arctic waters had recovered after almost a decade of no hunting, similar to what Christensen had believed. This project was also short-lived due to poor catches, and was the last time a whaling station was in operation at Finneset. Later attempts in 1926–1927 and in the 1930s were all pelagic projects based on floating factory ships that only visited Spitsbergen to buy coal from the mining companies and to resupply their fresh water tanks. Finneset whaling station was, however, not entirely abandoned. It was regularly used as storage for small boats. It is also likely that the station's forge continued to play an important role for expeditions, trappers, mining companies, as well as for the telegraph station at Finneset.

During the Second World War, the archipelago and its many coal mines became strategically important. The allied forces wanted to prevent German armed forces from gaining control over these, and sent up an expedition to evacuate the small population from the island and set fire to the coal deposits. The telegraph station at Finneset, which was of strategic importance, was bombarded by allied ships. These shells destroyed both the telegraph station and the whaling station.

²⁷¹ "Letter to Mr. M de C. Findlay of the British delegation in Kristiania. December 18, 1915". Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. Archive: Hvalfangerforeningen. Diverse Pakkesaker. Vol 3. 1912–1922.

²⁷² In October 1916, Chr. Nielsen & Co contracted the estate of Chr. Anker & Co to deliver 800 tonnes of coal to the station. "Letter to Høiesteretsadvokat Kristen Nygaard. Kristiania. October 21. 1916". Tromsø StatsArkiv. Norway. Archive: Privat Arkiv nr. 73. Store Norske Spitsbergen Kullkompani. Box: 452. (1914–1916).

²⁷³ «Letter from Hvalfangerforeningen to Andr. Ingebrigtsen. Kristiania. May 19, 1920". Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. Archive: Hvalfangerforeningen. Diverse Pakkesaker. Vol: 3. (1912–1922).

Today, there are still cultural remains of the modern whaling industry in Svalbard, particularly at Finneset. These remains were surveyed and mapped by a LASHIPA team in the summer of 2007. The results of this fieldwork will be discussed thoroughly in the chapter pertaining to this whaling station.

4. Finneset whaling station

Introduction

The remains of Finneset whaling station are located on a small, flat peninsula in Green Harbour. This is a southern fjord arm that extends from the larger Isfjorden on the west coast of Spitsbergen. The whaling station was established in 1905, and was operated by three different whaling companies until it was finally abandoned after the 1920 season.

The whaling companies that operated the station are:

- A/S Spitsbergen (1905–1908)
- A/S Nimrod (1909–1912)
- A/S Spitsbergen (1920–1921)

A/S Spitsbergen whaling company

A/S Spitsbergen whaling company was established in 1905 by the three Norwegians Severin Dahl, Lars Iversen, and Knut Raaum. A/S Spitsbergen succeeded the whaling company A/S Finmarken. Both Iversen and Raaum had worked for A/S Finmarken and initially claimed the peninsula Finneset for this company in 1904.²⁷⁴ Here, I will briefly discuss A/S Finmarken since it is relevant to the formation of A/S Spitsbergen later on and the company's decision to move their whaling station from northern Norway to Spitsbergen. A/S Finmarken was established in 1880 by the Tønsberg-based entrepreneurs Johannes Bruu, Olaus Røed, and Otto Thoresen with a capital of Kr 268,000.²⁷⁵ It is perhaps not surprising that the actors behind this whaling company came from Tønsberg, where the success of the local whaling entrepreneur Svend Foyn had not been unnoticed.

²⁷⁴ "Letter from A/S Spitzbergen, Firma Severin Dahl. Tønsberg, Norway to the Norwegian Foreign Ministry, December 24, 1908". The Norwegian National Archives. Archive of the Norwegian Foreign Ministry. Series: P7. Vol: B5145- Iversen. The claim was reported to the Norwegian Foreign Ministry by Knut Raaum on December 24, 1908 in "Letter from Supreme attorney Herman Christiansen to Mr. Jorstad, August 6, 1921". The Norwegian National Archives. Archive of the Norwegian Foreign Ministry. Series: P7. Vol: 5145- Finneset. The claim is also referred to in "letter to the Norwegian Foreign Ministry, Kristiania, July 2, 1910". StatsArkivet in Tromsø, Norway. Archive of Store Norske Spitsbergen Kulkompani. Private Archive No 73. Vol: 451. Fldr: 1909– 1923, Green Harbour/ AS Nimrod, and in Gunnar Isachsens *Green Harbour*. 1913. P: 41f. In: *L'expédition Norvégienne au Spitzberg 1909–1910 sous le direction du capitaine Gunnar Isachsen*.

²⁷⁵ Johnsen, A.O. *Finmarksfangstens Historie 1864–1905*. 1959. Vol 1. P: 466. In: *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*. See also: Sørensen, G, Hoff, J.O, Halvorsen, L & Salicath, C. "Hvalfangsten- Dens historie og mænd". 1912. P: 39.

A/S Finmarken was one of five Tønsberg-based whaling companies that were established that same year.²⁷⁶ Apart from being eager to participate in the whaling boom at the time, the company was also established because new whaling companies were joint stock projects in which people could invest and buy shares. According to Johnsen, the whaling companies were commonly divided into 24–70 parts or shares and were the first joint stock ventures to be based on public support and interest in Norway.²⁷⁷ Having secured the financial support of local shareholders, Bruu, Røed, and Thoresen hired Marcus Bull to manage the company and build its local network. Bull had extensive experience of shipping and whaling, having worked as the local manager of Svend Foyn's whaling station at Vadsø in northern Norway. Under the leadership of Bull, a whaling station and whaling fleet were developed throughout the 1880s. A few years later, Bull was replaced as manager by Jacob Dessen, and Bull moved to Iceland where he and his brother established their own whaling station.²⁷⁸ During the period 1885 to 1904, the company was relatively successful, catching approximately 1,360 whales.²⁷⁹ In 1899, there was a turning point for the whaling company, as well as the entire whaling industry in northern Norway. Whales were becoming scarcer. A/S Finmarken went from an average annual catch of 109 whales to 60 whales in 1899, and this dropped even further to 34 whales in 1900. The trend was similar throughout northern Norway and was a sign that whale stocks had become depleted after decades of being hunted. In an attempt to counteract the situation, the management of A/S Finmarken decided to replace the manager Jacob Dessen with Lars Iversen.²⁸⁰

Iversen managed to turn the trend by reorganising hunting. He had worked for the Greenland Shark fishing industry and the sealing industry in the northern seas before he was employed as the manager of A/S Finmarken.²⁸¹ Instead of organising the hunting activities as the company traditionally had done, with whale catchers operating from the stations at Sørvær, Iversen convinced the company management to invest in a steam-

²⁷⁶ In addition to A/S Finmarken, was Vestfold Hvalfangerselskap, Stokke Intressentskap for Hvalfangst, Jarfjord, and Haabet formed in 1880. For further reading, see: Sørensen, G, Hoff, J.O, Halvorsen, L & Salicath, C. *Hvalfangsten- Dens historie og mænd*. 1912, Risting, S. "Av Hvalfangstens Historie. 1922.

²⁷⁷ Johnsen, A.O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol 1. P: 467. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

²⁷⁸ Sørensen, G, Hoff, J.O, Halvorsen, L & Salicath, C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 40.

²⁷⁹ Risting, S. *Av Hvalfangstens Historie*. 1922. P: 605–619.

²⁸⁰ Sørensen, G, Hoff, J.O, Halvorsen, L & Salicath, C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 39.

²⁸¹ Sørensen, G, Hoff, J.O, Halvorsen, L & Salicath, C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 62f.

powered tug boat. This increased the company's operational range and allowed access to larger hunting grounds. Iversen decided to place the two whale catchers Fin and Frey at Bear Island, and to use the tug boat as a link between the whaling station in northern Norway and the whale catchers at Bear Island. By reorganising the hunting activities in this way, catches increased from 34 whales in 1900 to 49 in 1901, 66 in 1902, 79 in 1903, and 95 in 1904.²⁸² Although prices for whale oil dropped during the same period from £ 22 per ton in 1900 to £15 per ton in 1904,²⁸³ the number of catches indicated that whaling in the Arctic could be profitable. As a result, the management of A/S Finmarken decided to send Knut Raaum to Spitsbergen in 1903 to investigate the hunting grounds there and to locate and claim a piece of land on behalf of the company. Raaum was a ship owner from Tønsberg. His role in A/S Finmarken is unclear, but it is possible that he was a part of the company's management. Although Raaum failed to locate a suitable site for establishing a whaling station, the attempt was repeated in the summer of 1904.

This group consisted of Knut Raaum, Lars Iversen, and the manager of Tønsberg Brewery, who was probably one of A/S Finmarken's main shareholders.²⁸⁴ After failing to claim an area in Bellsound, which had already been claimed by the Bergenske Kulkompanie of Bergen,²⁸⁵ the group sailed north to Isfjorden and Green Harbour. Here, they located a large and unclaimed peninsula, which they named Finnæs, or Fine Point, on behalf of A/S Finmarken.²⁸⁶

²⁸² Sørensen, G, Hoff, J.O, Halvorsen, L & Salicath, C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 339f, See also: Johnsen, A.O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol 1. P: 529f. In: Den Moderne Hvalfangst Historie-Opprinnelse og Utvikling, and Risting, S. *Av Hvalfangstens Historie*. 1922. P: 149f.

²⁸³ Johnsen, A.O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol 1. P: 506f. In: Den Moderne Hvalfangst Historie-Opprinnelse og Utvikling.

²⁸⁴ *The Diary of Alex Lange 1904– 1907/08*. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord, Norway. The manager of Tønsberg Bryggeri was Johan Gmeiner. Later in 1907, he became one of the founders of the whaling company A/S Tønsberg Hvalfangeri. The company operated in South Georgia with the factory ship Bucentaur (which was operating on Spitsbergen at the time of his visit). Later the company established the whaling station Husvik.

²⁸⁵ Hoel A. *Svalbards Historie 1596–1965*. 1966. Vol 1. P: 423. The claim of A/S Finmarkens representatives is described in the "*Diary of Alex Lange 1904– 1907/08*". Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord, Norway.

²⁸⁶ "*Letter from A/S Spitzbergen, Firma Severin Dahl, Tønsberg, Norway to the Norwegian Foreign Ministry, December 24, 1908*". The Norwegian National Archives. Archive of the Norwegian Foreign Ministry. Series: P7. Vol: B5145- Iversen. The claim was reported to the Norwegian Foreign Ministry by Knut Raaum on December 24, 1908 in "*Letter from Supreme attorney Herman Christiansen to Mr. Jorstad, August 6, 1921*". The Norwegian National Archives. Archive of the Norwegian Foreign Ministry. Series: P7. Vol: 5145- Finneset. The claim is also referred to in "*letter to the Norwegian Foreign Ministry, Kristiania, July 2, 1910*".



Fig 35. Finneset Peninsula, Green Harbour. The peninsula is flat and dry, with good, sheltered harbour conditions on the southern side. Photo: U.I. Gustafsson. LASHIPA 3/2006.

Having claimed Finneset peninsula, the company started building their butchering and production facilities – their local network. It appears, however, that the local company management was unable to convince the shareholders of the idea. The shareholders favoured taking the compensation offered by the Norwegian government for the 1904 whale ban in northern Norway.²⁸⁷ This was because the company's local network were unable to generate enough economic profits to maintain the shareholder's support, and were not able to convince them of the hunting potential in the Arctic. The company's negotiations with the Norwegian government resulted in a Kr 56,000 compensation deal, which was less than the Kr 75,000 requested for their whaling establishment at

StatsArkivet in Tromsø, Norway. Archive of Store Norske Spitsbergen Kulkompani. Private Archive No 73. Vol: 451. Fldr: 1909– 1923, Green Harbour/ AS Nimrod, and in Gunnar Isachsens "*Green Harbour*". 1913. P: 41f. In: "L'expédition Norvégienne au Spitsberg 1909–1910 sous le direction du capitaine Gunnar Isachsen".

²⁸⁷ Johnsen, A.O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol 1. P: 622f. In: *Den Moderne Hvalfangst Historie-Opprinnelse og Utvikling*, and Risting. *S. Av Hvalfangstens Historie*. 1922. P: 158f.

Sørvær.²⁸⁸ As a result, Iversen and Raaum found themselves with a claim to a piece of land at Spitsbergen and a belief that the arctic whaling grounds could be profitable. In the spring of 1905, Iversen and Raaum managed to attract the interest of the Kristiania- (present day Oslo) based company, Firma Severin Dahl.

Firma Severin Dahl was founded in Tønsberg, Norway in 1867 by the entrepreneur Severin Dahl. Initially, Dahl's business focused on shipping insurance and supplying financial aid to Norwegian shipping firms. At the turn of the 20th century, Severin Dahl decided to move his operations from Tønsberg to Oslo, where they developed into a successful and profitable company, supplying insurance to several international companies.²⁸⁹ It is, however, uncertain when Severin Dahl left this position as director of the company. At the same time, it seems that the company changed its name to Noprivas. This company had two directors: Even Andersen and Bjarne Jørgensen, and Knut Raaum was chairman of the board.²⁹⁰ Raaum used his position as chairman to convince the board to invest in the project. According to Johnsen, Firma Severin Dahl/Noprivas decided to purchase the whaling station at Sørvær from A/S Finmarken, with all its buildings and technical installations, with the intention of moving it to Spitsbergen.²⁹¹ There are unfortunately no historical sources that give insight into the negotiations between the two parties. It is likely that their decision was inspired by the good results other whalers had in Spitsbergen between 1903 and 1904.²⁹² There was a widespread notion that there would be large exploitable whale stocks in the Arctic. Another factor was the availability of new technology – such as the hydrogenation of whale oil.

Activities and results 1905–1909

Firma Severin Dahl supplied the necessary capital to establish the whaling station at Finneset, Spitsbergen, while Iversen and Raaum had the expertise to realize the project.

²⁸⁸ Norsk Fiskeritidende. 1904. P: 6. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. Regarding the discussions between the whaling companies and the whaling taxation commission, please see Johnsen (1959), pp: 619ff.

²⁸⁹ <http://www.forsikringsforeningen.no/protector/>. Accessed 25.09.2016.

²⁹⁰ <http://www.forsikringsforeningen.no/protector/>. Accessed 25.09.2016.

²⁹¹ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol: 1. P: 623. In: Den Moderne Hvalfangstens Historie- Opprinnelse og utvikling.

²⁹² Risting, S. *Av Hvalfangstens Historie*. 1922. P: 248. See also: *The Diary of Alex Lange 1904– 1907/08*. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

Raaum and Iversen were contracted as managers of the newly formed whaling company and with the task of moving the whaling station from Finnmark and rebuilding it at Spitsbergen.²⁹³ During the spring of 1905, Iversen and Raaum hired people to disassemble parts of the former whaling station A/S Finnmarken at Sørvær in northern Norway and to move it part by part to Finneset where it was re-erected.²⁹⁴ The company spent a large part of the summer building the station at Finneset. As a result, production lagged behind. In spite of this, the company caught 81 whales and produced 2,700 barrels of whale oil.²⁹⁵ Compared with other whaling companies in Spitsbergen, this was an average result. The total catch and production for the eight companies operating in Spitsbergen in 1905 was 553 whales and 17,460 barrels of whale oil.²⁹⁶ In comparison, the Argentinean whaling company Cia Argentina de Pesca, which operated from Grytviken whaling station in South Georgia, caught 183 whales and produced 5,302 barrels of whale oil that same year.²⁹⁷

Given that the average price for whale oil on the domestic market was Kr 48.23 and the production costs were Kr 46.19, A/S Spitsbergen made a surplus of Kr 5,400²⁹⁸ This was, however, before the company had paid any salaries to their workers. I have not uncovered any data on the number of employees or their individual salaries, which makes it difficult to estimate these costs. It is reasonable to assume that the company did not make any profit in their first season. Considering this was the company's first hunting season, the management and shareholders probably regarded any profit as a good result. Prices for whale oil had declined since 1900. In 1905, they reached an all-time low – whale oil No 1 was sold at £ 15 per ton and whale oil No 4 was sold at £ 9.10 per ton, including barrels.²⁹⁹ These declining prices might seem odd considering the export of whale oil to the European markets increased in the period 1903–1905. According to Johnsen (1959), the decline in prices was the result of strong competition

²⁹³ Isachsens. G. *Green Harbour*. 1913. P: 42. In: L'expédition Norvégienne au Spitsberg 1909–1910 sous le direction du capitaine Gunnar Isachsen.

²⁹⁴ Isachsens. G. *Green Harbour*. 1913. P: 41. In: L'expédition Norvégienne au Spitsberg 1909–1910 sous le direction du capitaine Gunnar Isachsen.

²⁹⁵ Risting. S. *Av Hvalfangstens Historie*. 1922. P: 262.

²⁹⁶ Risting. S. *Av Hvalfangstens Historie*. 1922. P: 262.

²⁹⁷ Hart. I.B. *PESCA- The history of Compañia Argentina de Pesca Sociedad Anónima of Buenos Aires: An account of the pioneer modern whaling and sealing company in the Antarctic*. 2001. P: 503.

²⁹⁸ Data have been extracted from Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. P: 587. In: Den moderne Hvalfangst Historie- Opprinnelse og utvikling.

²⁹⁹ Johnsen. A.O. *Finnmarksfangstens historie 1864–1905*. 1959. Vol 1. P: 512. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

from animal, vegetable, and mineral oils, which entered the market in the core regions of Europe in huge quantities.³⁰⁰

PRICES FOR WHALE OIL (Ton) 1900–1905		
Year	No 1 (£)	No 4 (£)
1900	22.00	16.00
1901	20.00	13.00
1902	20.00	16.00
1903	19.00	13.10
1904	16.00	11.00
1905	15.00	9.10

AVERAGE WHALE OIL PRODUCTION 1900–1905		
Year	Average production	Number of companies
1900	801.57	14
1901	1,143.83	12
1902	1,994.90	11
1903	1,332.45	10+1
1904	2,496.66	10+2
1905	2,332.5	8

Fig 36 and 37. Tables indicating average prices for whale oil and average annual production per whaling company in northern Norway, Bear Island, and Spitsbergen.³⁰¹ Although the two tables indicate that production increased as prices dropped, the number of companies was also reduced, which increased average production per company. Despite this, it is obvious that the whaling companies increased their annual production over the period.

The 1906 season proved to be a difficult hunting season for all whaling companies operating in Spitsbergen. Overall, fewer whales were caught and it was not uncommon for whale catchers to lay stationed at sea for days without seeing any whales.³⁰² The whalers believed this was because there was less food along the west coast of Spitsbergen. There were rumours that there had been plenty of whales at Bear Island and in the vicinity of Hopen Island further to the south-east.³⁰³ Catching statistics from Spitsbergen and Bear Island might support these rumours. The company with the best result in Spitsbergen was A/S Nimrod, which caught 55 whales. Morten Andreas Ingebrigtsen at Bear Island managed to catch 60 whales and a large percentage of these were blue whales.³⁰⁴

³⁰⁰ Johnsen. A.O. *Finnmarksfangstens historie 1864–1905*. 1959. Vol 1. P: 508. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

³⁰¹ The figures are based on data reported in Norsk Fiskeritidende 1890–1905, The Economist 1890–1905, Grosser W. Hvistedahl & Co, Johnsen. A.O. (1959) and Risting. S. (1922). Please note, that for the period 1903–1904, the production for the two whaling companies operating in Bear Island and Spitsbergen have been included, while 1905 is entirely based on the latter.

³⁰² Norsk Fiskeritidende. 1906. P:72. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³⁰³ Norsk Fiskeritidende. 1906. P:72f. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³⁰⁴ "Dagbog D/S Skytten. 1906". National Library of Norway. Oslo. MS Fol 3905. See also: Risting. S. *Av Hvalfangstens Historie*. 1922. P: 262.

For A/S Spitsbergen, the 1906 season ended with a catch of 37 whales, 1,492 barrels of whale oil, and a few tonnes of dried and packed baleen. According to Tønnesen, whale oil prices were Kr 61.00 per barrel at the time, while the estimated production costs were approximately Kr 49.00 per barrel.³⁰⁵ This suggests that the company made a net profit of Kr 17,904 (excluding baleen), despite the difficult environmental conditions. Another growing concern for the whaling companies in Spitsbergen was the rising whaling industry in the Antarctic, which was attracting much attention with its large catches. This in turn attracted investors and other actors, and also gunners who wanted employment there. All whaling companies were dependent on a good gunner to secure good catches. As a result, they often competed over the best ones, using salaries as a tool to achieve this. This gave the gunners a unique opportunity to earn well. Not only did they have a good base salary, they were also paid per whale they brought in for processing. This made it difficult for the whaling companies in Spitsbergen to compete for the best gunners. What effect this had on the catches is, however, difficult to say.

In May 1907, when the whaling fleet approached Spitsbergen, they met a large belt of sea ice, which extended from north-western Spitsbergen to just south of Bear Island.³⁰⁶ To avoid getting trapped in the ice, the whaling companies positioned their ships alongside the edge of the sea ice. Here, they started the hunting season and flensed and processed whales alongside the ships. Although the sea ice prevented them from accessing the shelter of Spitsbergen's waters, the ice itself broke the large swells from the Barents Sea and provided enough shelter for the companies to process whales. By mid-June, the sea ice broke up and the companies could enter the fjords, using their whale catchers and tug boats to push the ice floes away from the factory ship. This carved a path that allowed the whaling companies to access their claimed harbours and territories along the west coast of Spitsbergen. Here, the companies operated until the end of August.³⁰⁷ Many companies that previously operated from Bellsound and Recherché Bay sought new anchorages because the harsh summer with ice and low temperatures had kept the fjord frozen for most of the season. Some companies took

³⁰⁵ Data have been extracted from Tønnesen, J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. P: 587. In: *Den moderne Hvalfangst Historie- Opprinnelse og utvikling*.

³⁰⁶ See figure 35 in chapter 3.

³⁰⁷ *Norsk Fiskeritidende*. 1908. P:21f. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

harbour in Isfjorden, while others established themselves at Prince Charles Foreland.³⁰⁸ A/S Spitsbergen encountered similar problems further north and anchored with its fleet alongside the edge of the sea ice. In June, the company was able to sail into the Isfjorden. Green Harbour and the whaling station were, however, still blocked by sea ice. To access the station, Iversen ordered his workers to cut a canal through the ice. In spite of the initial problems, the season was better than the previous one, with a total catch of 68 whales and 16 bottlenose whales, from which the company produced 2,200 barrels of whale oil and a few tonnes of baleen.³⁰⁹ According to Dole, A/S Spitsbergen also sold 200 barrels of salted whale meat to the Russian army, which added to the revenues.³¹⁰ Since prices for whale oil had dropped compared with last year to Kr 54.00 per barrel, the company made a net profit of Kr 24,200 (excluding baleen).³¹¹ For the third year in a row, the whaling station at Finneset, the company's local network, managed to produce enough whale oil to generate a profit for its investors. In spite of the declining catches, the whalers believed that whale stocks were larger than the numbers indicated. According to them, sea ice, fog, and irregular distribution of stocks were preventing them from catching larger numbers.³¹² After the season, three whaling companies chose to abandon their hunting operations in Spitsbergen and either cancel or transfer their operations to new and potentially more prosperous hunting grounds elsewhere.

It is worth noting that the increased whaling activities in Green Harbour had attracted other industrialists who wanted to profit from whaling activities. In 1907, the American Arctic Coal Company (ACC) established a coal mine in Green Harbour.³¹³ The motive behind this project was to mine coal and sell it to the whaling industry.³¹⁴ Shortly after the ACC was established, they made a verbal agreement with A/S Spitsbergen to use

³⁰⁸ Norsk Fiskeritidende. 1920/21. P:15. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. See also: Risting. S. *Av Hvalfangstens Historie*. 1922. P: 253.

³⁰⁹ Norsk Fiskeritidende. 1908. P:20. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³¹⁰ Dole. N.H. *America in Spitsbergen: The Romance of an Arctic Coal-Mine*. 1922. P: 331.

³¹¹ Based on whale-oil prices and production cost for a competing Norwegian whaling company on the domestic market. The prices per barrel were Kr 54.00 while production costs were Kr 43.00.

³¹² Norsk Fiskeritidende. 1908. P:23. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³¹³ Hoel. A. *Svalbards Historie 1596–1965*. 1966. Vol: 2. P: 608.

³¹⁴ "Letter to the President and Directors of the Arctic Coal Company, and Messrs. Ayer and Longyear. November 24. 1911". Archive of Michigan Technological University. Houghton. USA. Archive: The Arctic Coal Company. Scott Turner Collection. MS 031.

their harbour to transport goods from their mine to Longyear City. Over the following years, the ACC became the main supplier of coal to the whaling companies in the area.

At the start of the 1908 season, both Bellsound and Green Harbour were blocked by ice.³¹⁵ Several whaling companies took harbour in Safe Harbour on the northern side of Isfjorden and operated from there until August. A/S Spitsbergen anchored alongside the edge of the ice as they had done the previous season and cut the ice as they had done the year before. Parallel to this, the two whale catchers were hunting and bringing in whales for processing. These whales were flensed alongside the ship. After a period of ice cutting, the ice in Green Harbour broke up by itself. Throughout the remainder of the hunting season, A/S Spitsbergen and the other whaling companies were not disturbed by environmental conditions. For this season, the company and Firma Severin Dahl decided to transfer the guano factory from the former whaling station in Sørvær to Spitsbergen.³¹⁶ It was only the guano building that was transferred, and the guano mill inside was left behind. It appears that the company had decided to invest in new vertical guano drying machines rather than using the old horizontal one.³¹⁷ Inside the guano drier, there were several shelves for storing residues from whale oil production and the products were dried with hot air.³¹⁸ The dried products were crushed into a fine meal and placed in bags. It is likely that the decision to equip Finneset whaling station with full utilisation capability was motivated by declining catches. It became important to utilise all parts of the whale and throw nothing away. However, for unknown reasons, the guano factory was not assembled during the 1908 season.

Halfway through the season, A/S Spitsbergen got the opportunity to operate with another two whale catchers because the factory ship of A/S Nimrod, a competing Norwegian whaling company, had caught fire and sunk. The company lost 1,000 barrels

³¹⁵ Norsk Fiskeritidende. 1909. P:16. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³¹⁶ Norsk Fiskeritidende. 1920/21. P:92. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³¹⁷ Norsk Fiskeritidende. 1911. P:23. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³¹⁸ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del II: 1914–1924. Den Pelagisk fangst 1924–1937*. 1969. Vol: 3. P:33. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*".

of whale oil in the fire.³¹⁹ In an attempt to minimise losses, A/S Nimrod rented out their two whale catchers *Nimrod* and *Fiskeren* to A/S Spitsbergen. All in all, A/S Spitsbergen operated five catchers. In addition to the two from A/S Nimrod, the company rented a catcher from the Shetland Islands.³²⁰ This increased their catches substantially.³²¹ In spite of this, the company only caught 50 whales, from which they produced 1400 barrels of whale oil and some baleen. The barrels were sold at the market at Kr 45.00 per barrel, resulting in an annual net profit of Kr 11,200 before paying rent to A/S Nimrod and wages.³²² The result could perhaps be blamed on inexperienced gunners, but there are no sources to support this. It is more likely that the whale stocks were depleted after a few years of industrial exploitation.

A consequence of the declining catches was that several whaling companies chose to withdraw from the hunting grounds in favour of other areas. Several managers had been complaining for years that the hunting grounds at Spitsbergen had become too crowded, and that competition over the increasingly scarce whales had become fierce.³²³ It is difficult to estimate the effect the profits of Antarctic whaling companies had on investment from Europe and elsewhere in whaling projects in the European high Arctic. It probably became increasingly difficult to maintain the support of global networks for arctic projects, since their future and profitability looked bleak.

Over a period of a few months, A/S Spitsbergen constructed a local network in Spitsbergen that consisted of a functional and operational whaling station. Although the company failed to make a profit in their first season there, the prospects of improved catches and production in the coming season, combined with the recent success of the hydrogenation process, made the future seem bright. During the same period (1905–1908), as prices for whale oil improved, the catches and production of A/S Spitsbergen decreased. In spite of reduced catches, the company was able to generate a profit largely

³¹⁹ Holmsen. G. *Spitsbergens natur og historie*. 1911. P: 37.

³²⁰ Norsk Fiskeritidende. 1909. P:16. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³²¹ Norsk Fiskeritidende. 1909. P:2. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³²² Based on whale-oil prices and production cost for a competing Norwegian whaling company on the domestic market. The prices per barrel were Kr 45.00 while production costs were Kr 37.00.

³²³ *The Diary of Alex Lange 1904– 1907/08*, and Norsk Hvalfangsttidende. Nr 12, Dec 1919. P: 214. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

because the prices increased. These profits were apparently enough to maintain the support of the owners of Firma Severin Dahl.

Sale and production costs per barrel for A/S Spitsbergen 1905 to 1908.				
Year	Production	Sales rate	Production costs	Profit
1905	2,700	Kr48.00	Kr46.00	Kr5,400
1906	1,492	Kr61.00	Kr49.00	Kr17,904
1907	2,200	Kr54.00	Kr43.00	Kr24,200
1908	1,400	Kr45.00	Kr37.00	Kr11,200

Fig 38. Production of A/S Spitsbergen from 1905 to 1908, including estimated sales and production costs (based on accessible data for whaling companies that operated in the Antarctic). According to these figures, A/S Spitsbergen's profit was relatively small. But it is reasonable to assume that the production costs in the Arctic were less compared with the Antarctic, since it is less remote and the company made few new technical investments when they transferred the whaling station from northern Norway.³²⁴

The variable catches and production of A/S Spitsbergen during these years was due to competition over available resources, such as whales and fresh water, combined with environmental factors, such as sea ice and fog. According to Marcussen, the manager of A/S Nimrod, the reason behind the declining catches was a result of “*an unfortunate combination of variables. In 1907, the sea ice had presented an obstacle, and was followed in 1908 by un-favourable weather and current conditions, which meant there were no schools of krill to be found in the waters off Spitsbergen. It is likely that Spitsbergen will become a good hunting ground when weather and current conditions improve*”.³²⁵ From 1905 to 1907, the average catch per whale catcher dropped significantly. This was likely the primary reason that several companies withdrew from the arctic hunting grounds.³²⁶ A growing concern for the whaling companies that operated in Spitsbergen was the developing situation in the Antarctic. The large catches made there meant that

³²⁴ The table is based on catch and production data reported in Norsk Fiskeritidende 1905–1909, Risting, S (1922) and Tønnesen, J.O.H. (1959). Sales and production costs for the several Antarctic based whaling companies, have been extracted from Tønnesen, J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. P: 587. In: Den moderne Hvalfangst Historie- Opprinnelse og utvikling.

³²⁵ Norsk Hvalfangsttidende. No 6. June 1920. P: 91. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³²⁶ Norsk Fiskeritidende. 1909. P: 16. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

companies in the Arctic had problems attracting competent gunners. The comparatively small catches made in the Arctic were a great disadvantage for arctic-based whaling.³²⁷

Sale and closure of Finneset whaling station

The deteriorating situation meant that the company's local network in Spitsbergen found it increasingly difficult to maintain the support of their global network – the owners of Firma Severin Dahl – as they were becoming concerned for their investments. In 1908, A/S Spitsbergen lost the support of Firma Severin Dahl, who decided to withdraw from the project and sell the company's assets. The decision can hardly have come as a surprise to Iversen and Raaum. The company had suffered from the declining trends mentioned above, and the decreasing whale oil prices (rather than their catches and production) had affected their profits. If prices for whale oil turned, then Firma Severin Dahl were at risk of suffering large financial losses. It is reasonable to assume, therefore, that the decision to withdraw from the project and to sell the whaling station at Finneset was motivated by the belief that it was easier to sell a station before whale oil prices fell further and the whale stocks collapsed.

One party interested in purchasing the station and its installations and claims was the former manager Lars Iversen, who had plans to establish his own whaling company.³²⁸ His plans failed, however, because he was unable to attract enough financial support to purchase the whaling station from Dahl – perhaps because of competition from the Antarctic whaling industry and because of declining catches in the European high Arctic. In addition, Iversen got involved in a conflict with Dahl after he had attempted to sell a part of Finneset peninsula, arguing that it was his private property.³²⁹

³²⁷ Norsk Hvalfangsttidende. No 7. July 1920. P: 103f. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³²⁸ "Printed copy of letter, Dec 27, 1909 from the Arctic Coal Company and Frederick Ayer and John M. Longyear to the Secretary of State, relating to the coal properties in Spitsbergen and of report of manager and exhibits therein referred to". In: Report on the matter of the coal properties in Spitsbergen of the Arctic Coal Company and Frederick Ayer and John M. Longyear. Archive of Michigan Technological University. USA. MS 031. Box 1. Fldr 13. P: 89f.

³²⁹ Dole. N.H. *America in Spitsbergen- The romance of an Arctic Coal-mine*. 1922. Vol 1. P: 364f.

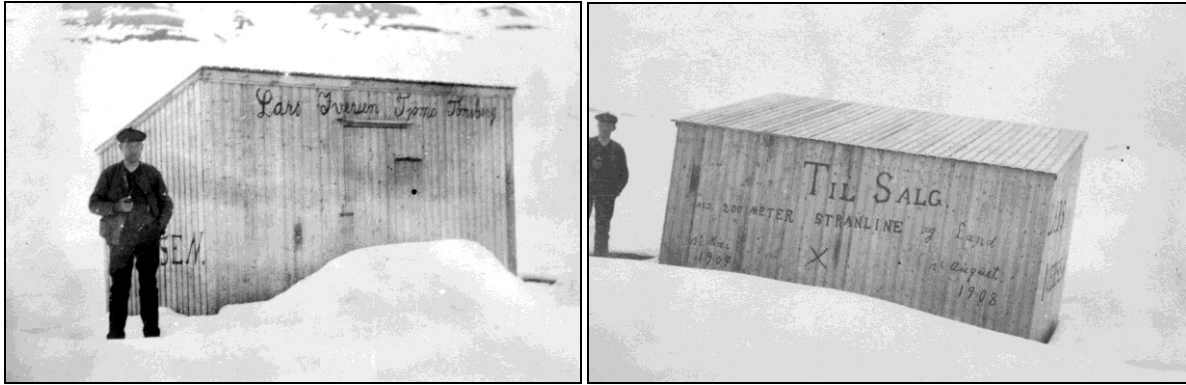


Fig 39 and 40. Lars Iversen's claim hut at Finneset, stating "for sale". The hut was placed upon the territorial claim he maintained that he had conducted on his own behalf in 1904, and which he attempted to sell to the Arctic Coal Company in the period after 1908. Both photos have been published with the kind approval of the Michigan Technological University's archive.

In 1909, Firma Severin Dahl initiated talks with Carl S. Sæther, the Norwegian representative for the American ACC. During these talks, Dahl informed Sæther that A/S Spitsbergen was going to be dissolved, and offered ACC the opportunity to purchase the company's claims and installations at Finneset for Kr 30,000.³³⁰ Dahl also told Sæther that if the ACC rejected their offer, the whaling station would be rented out for the upcoming hunting season to another whaling company.³³¹

The ACC was a coal-mining company that had established a small mine in the mountains overlooking Finneset. Through an agreement with A/S Spitsbergen, the ACC had been allowed to use a small section of Finneset peninsula to transport coal and goods to and from the coal mine. This was not the first time the whaling company had approached the ACC with an offer to buy their station and claims. In 1908, the company had approached Mr. Burrall, the local manager of the ACC in Spitsbergen, with a similar offer. Burrall believed that Dahl made the offer to Sæther because he thought the ACC would be interested, as they operated in the area.³³² It appears that Dahl neglected the fact that A/S Spitsbergen was one of the major customers of coal mined by the ACC in Green Harbour. It was indeed in the interest of ACC that the whaling stations remained

³³⁰ "Letter from Fredrik Burrall to The Arctic Coal Company. March 20, 1909". Archive of Michigan Technological University. USA. MS 031. Box 4. Fldr 20.

³³¹ "Letter from Fredrik Burrall to The Arctic Coal Company. March 20, 1909". Archive of Michigan Technological University. USA. MS 031. Box 4. Fldr 20.

³³² "Letter from Frederick Burrall to the Arctic Coal Company, August 30, 1908". Archive of Michigan Technological University. USA. MS 031. Box 4. Fldr 19.

operational there, but it was not in their interest to operate it themselves, since whaling was poor business. This might explain why they chose to turn the offer down.

The whaling company interested in renting the station at Finneset was A/S Nimrod from Larvik. They approached Firma Severin Dahl when it became apparent that Dahl was going to withdraw from the project and sell the company, including all its properties and claims.³³³ During the spring of 1909, the companies started their negotiations. In April, the representatives of the two whaling companies – Knut Raaum on behalf of A/S Spitsbergen and Christian Nielsen and Anders Marcussen on behalf of A/S Nimrod – came to an agreement. The agreement stated that Christian Nielsen & Co. would purchase A/S Spitsbergen's two whale catchers, Fin and Frey, including all the rights, installations, and tools of the whaling station at Finneset at Spitsbergen, as well as the un-assembled guano factory and all remains and machinery of the former whaling station at Sørvær in northern Norway for Kr 41,500.³³⁴

Discussion: Firma Severin Dahl and A/S Spitsbergen

The establishment of the modern whaling industry in the Arctic was an integrated part of the globalisation of the whaling industry and was motivated by increasing demands for whale oil and whale-related products in Europe and elsewhere. This expansion was not restricted to the Arctic, but included other areas, like Africa, South America, and the Antarctic.

Establishing a whaling industry in the Arctic meant the companies had to adapt to new geographical, environmental, and political circumstances. The geographical location meant increased distances and operational costs, and the companies' organisation, machines, and social strategies had to adapt to new environmental and political circumstances. The ability to do so determined the success or failure of the companies, since it was directly related to the ability to catch whales and produce whale oil.

³³³ "Sales-contract between A/S Spitsbergen and A/S Nimrod. April 1909". The Norwegian National Archives. Archive of the Norwegian Foreign Ministry. Series: P7. Vol: B5146. Fldr: Finneset.

³³⁴ "Sales-contract between A/S Spitsbergen and A/S Nimrod. April 1909". The Norwegian National Archives. Archive of the Norwegian Foreign Ministry. Series: P7. Vol: B5146. Fldr: Finneset.

To secure continuous support, a whaling project had to generate profit. If a whaling company failed to do so, it risked losing the support of the investors and their arctic whaling operations would fail. For A/S Finmarken, the declining catches and profits they made in northern Norway at the turn of the 20th century promoted the management to employ Lars Iversen as their new operational manager. It is likely that he, in turn, encouraged the management to send Knut Raaum to the Arctic to secure the future of the company. Having failed to convince the management to move their whaling activities to Spitsbergen, the company sold its assets to Firma Severin Dahl, a company with previous whaling experience. The archival sources show that Iversen and Raaum, who claimed Finneset in 1904, managed to attract Severin Dahl to invest in the project. Having secured the necessary support and funding to materialise the project, the two could proceed and construct the whaling station at Finneset. Under the management of these two actors, A/S Spitsbergen could construct the Finneset whaling station and develop it from 1905 to 1908. During this period, the company generated enough profit to uphold the support of Firma Severin Dahl, despite the environmental challenges they encountered at Spitsbergen. After three years, they decided to equip the whaling station to fully utilise the raw materials. This decision was motivated by a desire to increase economic profit as the company was catching fewer whales and because whale oil prices were increasing in core European markets. Although the whalers themselves firmly believed that whaling grounds in the region were rich enough to sustain large-scale industrial exploitation for many years to come, they failed to prove and convince their shareholders of this, since none of them managed to increase catches, production, or economic profits.

A/S Spitsbergen, Iversen, and Raaum managed to produce enough whale oil and baleen to generate a satisfactory profit from 1905 to 1908, which enabled them to maintain the support of their global network. In spite of increased financial investments in processing technologies, machines, and hunting capacity, A/S Spitsbergen failed, in 1908, to supply the necessary output to maintain Firma Severin Dahl's support. The main business interests of Firma Severin Dahl lay in shipping insurances and in supplying financial aid to Norwegian shipping firms, therefore investing in a large-scale industrial project in remote Spitsbergen was an adventurous project. The company had, up until the 1908

season, not invested in any additional machines or buildings at Finneset. Instead, they used buildings and well-tested machines, which they moved there from the former station in northern Norway. This strategy was financially beneficial and it secured functionality. Furthermore, the workers were familiar with these machines and knew how to operate them. This meant that the company did not have to waste time during the short arctic hunting season training their workers. Consequently, A/S Spitsbergen was able to immediately start processing whales and producing oil and other products.

The climatic circumstances of sea, fast ice, and fog meant the company had to adapt its operational strategies. This was done by hunting and processing alongside the sea ice during the early summer and by using tug boats to extend the range of the whale catchers. The company also focused exclusively on the production of whale oil. In addition to the company's technical and organisational choices, the management also used other strategies to ensure maximum efficiency and output of the station. These included the design of accommodation, a part-based salary system, leisure activities, and claim boards and fencing to protect territories and prevent disruptions of whale oil production. These strategies will be discussed later. Firma Severin Dahl had approached the industrial project carefully. They let A/S Spitsbergen and the arctic hunting grounds prove themselves as profitable for a period of three years before they invested in new machinery, which allowed A/S Spitsbergen to fully utilise the whales they caught. By doing so, they kept costs and risks to a minimum. Within a few years, catches decreased, which meant that the fundament of their whaling project at Spitsbergen was gone. Therefore, Firma Severin Dahl chose to withdraw from the project and sell the company. Despite declining catches and profits, two whaling companies (A/S Nimrod and Alfa & Beta) remained in these arctic grounds, motivated by a belief that the area contained enough whales to sustain an industry and become profitable. In 1909, A/S Nimrod bought the whaling station at Finneset. The primary reason for buying the station was that the company's own factory ship had caught fire and sunk earlier.

Christian Nielsen & Co. and A/S Nimrod

The whaling company A/S Nimrod was established by Christian Nielsen & Co. in 1904. Christian Nielsen, who later became one of the biggest whaling entrepreneurs of the 20th century, had a background of shipping and managing wood pulp production in Newcastle.³³⁵ In addition to this, he also had a network within the shipping business. Upon his return to Larvik in Norway, he started a business together with Hesselberg. Together, these two actors managed Laurvigs Intressentskab for Hvalfangst until Hesselberg withdrew a few years later, leaving Nielsen to single handedly manage the activities of the company until Ole Johannesen joined as joint manager in 1901.³³⁶ In effect, Laurvigs Intressentskab for Hvalfangst was a dormant company from 1904, although it formally remained in the company records until 1909.³³⁷ From 1904 onwards, the company operated under the new name: Christian Nielsen & Co.

The predecessor of Christian Nielsen & Co. was the whaling company Laurvigs Intressentskab for Hvalfangst. This company was formed by Hesselberg, Semb, Berntsen, Christian Nielsen, and a smaller group of shareholders on December 29, 1881.³³⁸ Christian Nielsen and Hesselberg were the managing directors of this company, and Anders Berntsen was the manager. The initiative to form a whaling company was to exploit whale stocks in northern Norway and had initially come from Berntsen. He had, for a number of years, been employed by Semb and was chartered by a whaling entrepreneur to master the factory ship *Laura*.³³⁹ These years had given Berntsen an opportunity to learn how the modern whaling industry was organised. The idea to form a whaling company was, in many ways, the result of years of network building and strategic manoeuvring, which secured the rights to build a whaling station in a suitable location in northern Norway.³⁴⁰

³³⁵ Sørensen. G, Hoff. J.O, Halvorsen. L & Salicath. C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 92.

³³⁶ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. P: 60. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling”.

³³⁷ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P:623. In: Den Moderne Hvalfangst Historie-Opprinnelse og utvikling”.

³³⁸ Sørensen. G, Hoff. J.O, Halvorsen. L & Salicath. C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 91f. See also: Risting. S. *Av hvalfangstens historie*. 1922. P: 125.

³³⁹ Sørensen. G, Hoff. J.O, Halvorsen. L & Salicath. C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 93.

³⁴⁰ Berntsen secured himself land for a whaling station at Svartnæs, opposite Vardø in north-eastern Norway. For further reading, please see: Sørensen. G, Hoff. J.O, Halvorsen. L & Salicath. C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 93f, and Johnsen (1959).

The stock capital of Laurvigs Intressentskab for Hvalfangst was Kr150,000, which was divided between fifteen shareholders.³⁴¹ This capital was used by the company's management to purchase technical equipment and installations for the whaling station and a whale catcher. After a successful season in 1883, the company increased its available stock capital by Kr24 000 and this allowed the company to buy a second whale catcher.³⁴² The company operated from Svartnæs until 1900, after which they decided to disassemble the station and move it further west to Bøle on Sørøen in northern Norway. The company made substantial losses in the years leading up to the 1904 whaling ban in Norway.³⁴³ In an attempt to counteract the situation, Nielsen and Berntsen established Shetland Hvalfangerselskap with a whaling station at Ronas Voe in the Shetland Islands.³⁴⁴ Much like in Norway, the whalers were initially welcomed by the local fishing communities.³⁴⁵ But within one year of industrial operations, an anti-whaling movement developed. The primary goal of this movement was, according to Risting, to prevent the whalers from operating in the surrounding waters.³⁴⁶ The argument was "*that if the whaling industry has been an obstacle for the Norwegian fishermen, the same must apply in the Shetlands. And if industries are banned from destroying the fishing industry in northern Norway, why should we allow foreign industrialists to do the same in the Shetlands?*"³⁴⁷ The British authorities responded to the developing situation by demanding full utilisation of the raw materials, faster processing times, and introducing restricted hunting areas in the region.

A/S Nimrod was, much like Shetland Hvalfangerselskap, a daughter company of Christian Nielsen & Co. The purpose of A/S Nimrod was to exploit the whale stocks in

³⁴¹ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 467. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling".

³⁴² Sørensen. G, Hoff. J.O, Halvorsen. L & Salicath. C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 92. See also: Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. Vol 1. 1959. P: 536. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling".

³⁴³ Johnsen. A.O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol: 1. P: 482. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

³⁴⁴ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. P: 61. In: Den moderne Hvalfangst Historie- Opprinnelse og utvikling.

³⁴⁵ Risting. S. *Av Hvalfangstens Historie*. 1922. P: 218.

³⁴⁶ Risting. S. *Av Hvalfangstens Historie*. 1922. P: 221.

³⁴⁷ Risting. S. *Av Hvalfangstens Historie*. 1922. P: 224.

the waters off Spitsbergen and process them into whale oil and by-products.³⁴⁸ To achieve this, the company bought a wooden sail ship named Figaro, which was converted into a floating factory with a loading capacity of 3,000 barrels. The idea was that Figaro would operate in conjunction with the company's two existing whale catchers (Fiskeren and Nimrod) under the leadership of Anders Marcussen of Sandefjord.³⁴⁹ Marcussen was the former operational manager of Bøle Trankokeri at Sørøya in northern Norway.³⁵⁰

The company's first arctic season was in 1905. According to Norsk Fiskeritidende, the company had initially planned to establish a base for their factory ship in Bellsound. All suitable harbours had, however, been occupied by competing whaling companies. The company went northward to Green Harbour, where Marcussen decided to anchor the ship at a harbour in Kokerineset on the west side of the fjord. Throughout the season, the company's two whale catchers Fiskeren and Nimrod brought whales for processing from the primary hunting grounds 100–200 km west of the west coast of Spitsbergen.³⁵¹ The factory ship Figaro remained A/S Nimrod's only production unit until 1908, when it caught fire and sank in Spitsbergen.

³⁴⁸ Tønnesen, J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. P: 93. In: Den moderne Hvalfangst Historie- Opprinnelse og utvikling.

³⁴⁹ Tønnesen, J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. P: 93. In: Den moderne Hvalfangst Historie- Opprinnelse og utvikling.

³⁵⁰ Bogen, H. *Firma Thor Dahl Sandefjord 1887–1937*. Anniversary publication. 1937. P: 147.

³⁵¹ Norsk Fiskeritidende. 1906. P: 116. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord, Norway.

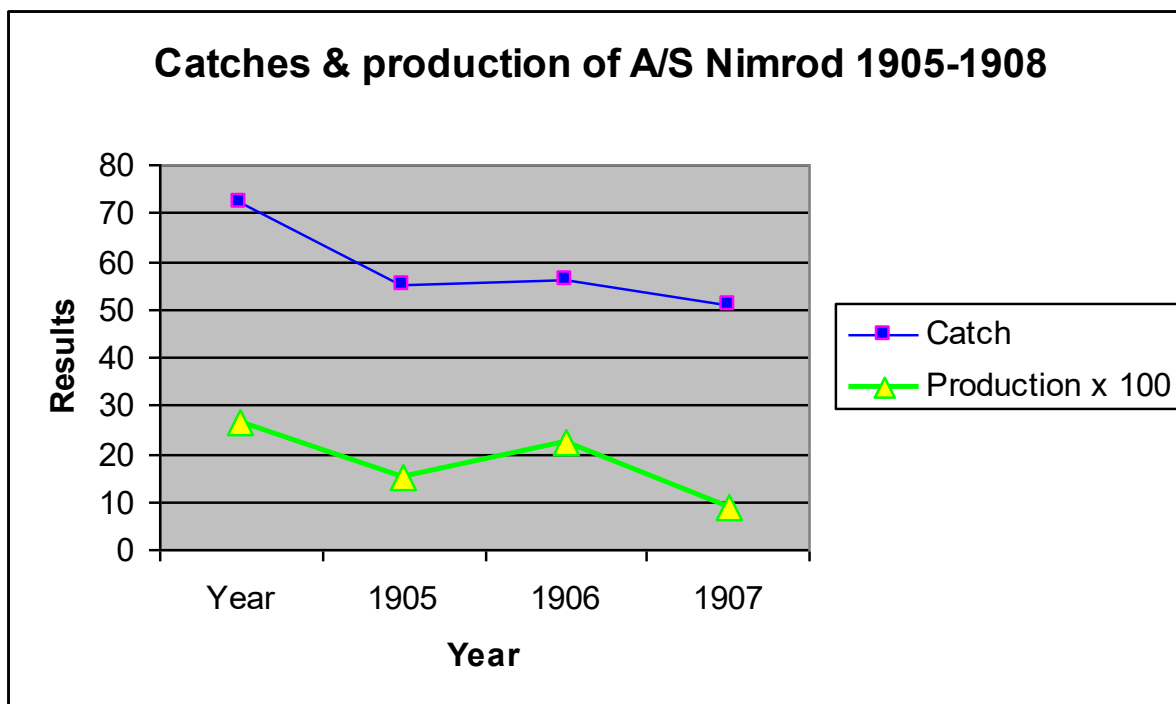


Fig 41. Catches and production for A/S Nimrod from 1905 to 1908. The company experienced a constant decline in catches and production, which peaked with the loss of a large percentage of the 1908 production and the company's floating factory ship Figaro.

Activities and results of A/S Nimrod 1905–1912

During 1905–1908, prices for whale oil varied causing fluctuations in the company's profits. It is difficult to estimate the exact profits or losses of the company since there are no data on the quality of whale oil produced or the companies operational and salary costs.

One of the few reliable sources of the company's economic success is a letter by one of A/S Nimrod's employees, Tønder Bull. According to him, A/S Nimrod's operational costs for the 1905 season were Kr109,000, which excluded the Kr30,000 that were subtracted for salaries and food.³⁵² Based on these figures, the company made a net profit of Kr79,000 in 1905, assuming that the company sold their whale oil at Kr40.90 per barrel. This does not seem unreasonable compared with data of other contemporary whaling companies (who sold at Kr49.00 per barrel). If one assumes that the production costs per barrel correspond to that of other whaling companies (approximately Kr46.00 per

³⁵² "Letter from Tønder Bull to the Norwegian Foreign Ministry, Kristiania July 2nd 1910". Tromsø StatsArkiv. Archive of Store Norske Spitsbergen Kulkompani. Private Archive No 73. Vol: 451. Fldr: 1909–1923 Green Harbour, A/S Nimrod.

barrel) then the company made a loss of Kr5.10 per barrel and a total loss of Kr13,586.40 after their first arctic season. This would hardly have motivated the company's board and shareholders to continue supporting the arctic whaling project. If one assumes that the company's produce was sold at prices corresponding to those of other whaling companies (Kr49.00 per barrel), then the result for the season was Kr127,872, indicating a net profit of Kr18,872 during their first season in Spitsbergen.³⁵³ Tønder Bull reported in his letter to the Norwegian Foreign Ministry that the company made a loss of Kr6,049 in 1906.³⁵⁴ If one adopts the same prices as for A/S Spitsbergen and other whaling companies at that time, the company made a profit of Kr17,892.³⁵⁵ Whatever the economic result, it was good enough to encourage Christian Nielsen & Co. and its shareholders to maintain their support and equip an expedition the following season.

The 1906 season was one of the toughest seasons recorded during the first decade of the 20th century, with extensive and prolonged sea ice that prevented whaling companies from gaining access to their harbours and operating effectively. The result for A/S Nimrod after the 1907 season was, according to Tønder Bull, 2,218 barrels of whale oil,³⁵⁶ even though the company had caught a similar number of whales as the previous year. A simple explanation for this is that the whales caught were either larger or the percentage of bigger whales was different. The end result was a profit of Kr24,398.³⁵⁷

³⁵³ This estimate have been deducted from costs and production reported in "*Letter from Tønder Bull to the Norwegian Foreign Ministry, Kristiania July 2nd 1910*". Tromsø StatsArkiv. Archive of Store Norske Spitsbergen Kulkompani. Private Archive No 73. Vol: 451. Fldr: 1909–1923 Green Harbour, A/S Nimrod, and prices per barrel of whale-oil have been extracted from Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. P: 587. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

³⁵⁴ Deducted from the data over production and expedition costs reported by T. Bull in a letter to the Norwegian Foreign Ministry of July 2nd 1910, and whale-oil prices reported by Tønnesen (1967).

³⁵⁵ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. P: 587. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

³⁵⁶ "*Letter from Tønder Bull to the Norwegian Foreign Ministry, Kristiania July 2nd 1910*". Tromsø StatsArkiv. Archive of Store Norske Spitsbergen Kulkompani. Private Archive No 73. Vol: 451. Fldr: 1909–1923 Green Harbour, A/S Nimrod.

³⁵⁷ This estimate have been deducted from costs and production reported in "*Letter from Tønder Bull to the Norwegian Foreign Ministry, Kristiania July 2nd 1910*". Tromsø StatsArkiv. Archive of Store Norske Spitsbergen Kulkompani. Private Archive No 73. Vol: 451. Fldr: 1909–1923 Green Harbour, A/S Nimrod, and prices per barrel of whale-oil have been extracted from Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. P: 587. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

After the 1908 season, only two out of the initial eight whaling companies remained in Spitsbergen and Bear Island.³⁵⁸ Despite a constant decline in catches and output, Christian Nielsen & Co. continued to support the local network in Spitsbergen. One can only speculate on the motives for this, but it is possible that they believed in better results with fewer competitors. The loss of the factory ship Figaro cost the company its production unit and a large percentage of its whale oil in 1908. It is reasonable to assume that the company had insured its ship for events like this. The crew did manage to salvage some of their produce, but the whale oil they lost meant that the company made a total loss of Kr49,300.³⁵⁹

Christian Nielsen & Co. decided to purchase Finneset whaling station for the upcoming season.³⁶⁰ That same year, Christian Nielsen & Co. also invested in and established the whaling company A/S Ocean with a whaling station at New Fortuna Bay in South Georgia where they had been granted a concession by British authorities.³⁶¹ This company was formed with a stock capital of Kr650,000. Christian Nielsen & Co. became, therefore, the first whaling company to simultaneously operate whaling stations in both polar areas. That same year, Laurvigs Intressentskab for Hvalfangst was formally dissolved in favour of Christian Nielsen & Co.³⁶² In 1908–1909, Christian Nielsen & Co. began to expand. Over the following years, the company expanded its activities and engagements across the globe and established a number of whaling stations and companies, such as A/S Norge in 1910–11 and A/S Spermacet in 1911.³⁶³ By 1913, Christian Nielsen & Co. had become the world's largest producer of whale oil, with a total production of 89,000 barrels. By 1914, the company ran six daughter companies,

³⁵⁸ Norsk Fiskeritidende. 1909. P: 16. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³⁵⁹ This estimate have been deducted from costs and production reported in "Letter from Tønder Bull to the Norwegian Foreign Ministry, Kristiania July 2nd 1910". Tromsø StatsArkiv. Archive of Store Norske Spitsbergen Kulkompani. Private Archive No 73. Vol: 451. Fldr: 1909–1923 Green Harbour, A/S Nimrod, and prices per barrel of whale-oil have been extracted from Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. P: 587. In: Den moderne Hvalfangst Historie- Opprinnelse og utvikling.

³⁶⁰ "Sales-contract between A/S Spitsbergen and A/S Nimrod. April 1909". The Norwegian National Archives. Archive of the Norwegian Foreign Ministry. Series: P7. Vol: B5146-Finneset.

³⁶¹ Sørensen. G, Hoff. J.O, Halvorsen. L & Salicath. C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 92.

³⁶² Johnsen. A.O. *Finnmarksfangstens historie 1864–1905*. 1959. Vol 1. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling. P: 623.

³⁶³ A/S Norge operated in the South Shetland Islands/Antarctica with the floating factory Solstreif, while A/S Spermacet operated along the African coast with the floating factory ship Vasco da Gama. For further reading, please see Risting. S. (1922), and Tønnesen. J.O.H and Johnsen. A.O. (1959–1976).

which operated 21 whale catchers and cargo ships, five floating factories, and four whaling stations across the globe.³⁶⁴ The company had developed into a giant industry with access to global markets and vast financial resources.

In this context, it is reasonable to question why the company wanted to invest in Spitsbergen, an area that was declining and was abandoned by contemporary whaling entrepreneurs. Although several whaling entrepreneurs and managers believed in the future prospects of arctic whaling grounds, others like Søren Berntsen, gunner for A/S Ørnen, argued that it was merely a matter of time until the whales were depleted due to the large numbers of companies competing for them.³⁶⁵ It seems, however, that many whalers continued to believe in Spitsbergen as a sustainable hunting ground with plenty of resources. This was perhaps a logical belief at a time when people's perception of nature was intertwined with religious beliefs that everything in nature had been created by God for the greater benefit of mankind.³⁶⁶ Exploiting nature's resources and benefiting from them was, in many ways, regarded as a divine quest.³⁶⁷ In addition, the large catches and economic profit of the antarctic hunting grounds may have drawn the whaling companies away from Spitsbergen. Tønnesen (1967) suggests that one of the main reasons for the declining catches in Spitsbergen was that the whale catchers were small and had limited operational range, which made them unsuitable for arctic conditions.³⁶⁸ The companies overcame the limited range of the whale catching boats by employing tug boats to extend their operational range. Perhaps a more simple argument for the rapidly declining catches after 1905 was overexploitation of a limited non-renewable resource combined with low utilisation, resulting in great waste.

The purchase of A/S Spitsbergen included the whaling station, its technical installations, and territorial claims, as well as the company's fleet. This meant that A/S Nimrod could

³⁶⁴ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. P: 60. In: Den moderne Hvalfangst Historie- Opprinnelse og utvikling.

³⁶⁵ "Diary of Alex lange, 1904–1907/08". Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord, Norway. See also: Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. :P 98f. In: Den moderne Hvalfangst Historie- Opprinnelse og utvikling.

³⁶⁶ Wråkberg. U. *Vetenskapens Vikingatåg- Perspektiv på svensk polarforskning 1860–1930*. 1999. P: 78.

³⁶⁷ Jacobsen. A.R. *Svend Foyn- Fangstpioner og nasjonsbygger*. 2008. P: 145f, and 300.

³⁶⁸ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. P: 100. In: Den moderne Hvalfangst Historie- Opprinnelse og utvikling.

operate four whale catchers in the 1909 season (Fin, Frey, Fiskeren, and Nimrod) as well as a tug boat and one 1,300-ton cargo ship.³⁶⁹ A/S Nimrod was one of the two whaling companies that remained operational in Spitsbergen after the 1908 season. The other company was the Sandefjord-based company Alfa & Beta. This company operated the floating factory Hecla with a base at Kokerineset on the west side of Green Harbour.³⁷⁰ The organisation of A/S Nimrod did not change, with Anders Marcussen as the local manager. Christian Nielsen & Co. decided to appoint their former employee, Tønder Bull, as the new managing director of A/S Nimrod.³⁷¹

When A/S Nimrod arrived at Green Harbour in the spring of 1909, the fjord was frozen and the company was unable to access the whaling station. The majority of workers were employed in cutting a canal through the ice to the station.³⁷² Having operated in the archipelago for a number of years, Marcussen was aware of the shifting conditions during spring. Before their departure, Marcussen equipped the company's steam-powered tug boat with a few cookers. This enabled the company to start hunting and processing whales immediately. This method proved to be successful. By the time the company had accessed Finneset whaling station, they had already killed and processed 25 whales and three bottlenose dolphins.³⁷³ Once they reached the whaling station, Marcussen divided the work into two teams, with one team prepared the whaling station for the upcoming season and the other erecting the guano factory. Building the guano factory meant that Finneset whaling station had full utilisation capacity.³⁷⁴ The company had problems getting the guano factory to function satisfactorily. They had big problems with the vertical driers they bought. Over the following three seasons, the company tried to solve these problems until they gave up in 1911. For the 1912 season, they disassembled the old horizontal guano drier from A/S Finmarken's former whaling

³⁶⁹ Risting. S. *Av Hvalfangstens Historie*. 1922. P: 256.

³⁷⁰ Bogen. H. *Firma Thor Dahl, Sandefjord*. Anniversary publication. 1937. See also: Tønnesen. J.O.H. (1967), p: 104, and Isachsen. G. (1913), p: 40f.

³⁷¹ Isachsen. G. *Green Harbour*. 1913. In: "L'expédition Norvégienne au Spitsberg 1909-1910 sous la direction du Capitaine Gunnar Isachsen". P: 43.

³⁷² Norsk Fiskeritidende. 1910. P: 41. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³⁷³ Norsk Hvalfangsttidende. No 7. July 1920. P: 103f. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³⁷⁴ Norsk Hvalfangsttidende. No 7. July 1920. P: 103f. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. See also: Dole. N.H. *America in Spitsbergen- The romance of an Arctic Coal-Mine*. 1922. Vol 1. P: 394.

station in northern Norway and moved it to Finneset.³⁷⁵ In 1909, the hunting grounds shifted and the whale catchers had to travel up to 400 km west of Spitsbergen to locate whales.³⁷⁶ During the season, A/S Nimrod extended their territorial claims to Linné River at the entrance of Isfjorden, where they erected a fishing hut.³⁷⁷ The purpose of this hut was twofold. Firstly, it meant that the company and its workers could get fresh fish. Secondly, it provided a leisure activity for the company's workers.



Fig 42. A/S Nimrod's fishing hut at Linné River. This hut was frequented by the workers of the whaling station. It provided a leisure activity and supplied the station with supplementary food. Photo: The Norwegian National Archives.³⁷⁸

The season ended with a catch of 68 whales, 2,990 barrels of whale oil, and an unknown amount of baleen. Considering the company operated four catchers and a tug boat, these figures were relatively small. According to Tønnesen (1967), the season's price for whale oil was Kr57.00 per barrel,³⁷⁹ amounting to Kr170,430 total gain. Deducting the operational costs for the company (approximately Kr139,000)³⁸⁰ the end profit was Kr31,430. This was the first time in three years that the company increased both catches and production, therefore generating a substantial profit for Christian Nielsen & Co. The result must have been encouraging for the company management who had taken a risk investing in the whaling station and new machinery. It is interesting to note that this

³⁷⁵ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol: 2. P: 94. In: Den moderne Hvalfangst Historie- Opprinnelse og utvikling.

³⁷⁶ Norsk Fiskeritidende. 1910. P: 41. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³⁷⁷ Hoel. A. *Svalbards Historie 1596–1965*. 1967. Vol 3. P: 1446.

³⁷⁸ Norwegian National Archives. The Archive of the Norwegian Foreign Ministry. Ref: B5146/ Finneset.

³⁷⁹ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol 2. In: Den moderne Hvalfangst Historie- Opprinnelse og utvikling. P: 587

³⁸⁰ "Letter from Tønder Bull to the Norwegian Foreign Ministry, Kristiania July 2nd 1910". Tromsø StatsArkiv. Archive: Store Norske Spitsbergen Kulkompani. Private Archive No 73. Vol: 451. Fldr: 1909–1923 Green Harbour.

was the first season the traditional anchorages at Bellsound and Recherchefjorden laid empty. This may indicate that the primary hunting grounds had already shifted to the north in previous years. Another advantage of basing operations in the Isfjord area was the easier access to a constant supply of coal and other commodities, since the coal-mining industry was well-established there and there were a few larger settlements.

In 1910, A/S Nimrod invested in a new and larger tug boat named Banan. This boat had previously operated as a cargo ship.³⁸¹ The investment was probably motivated by the increased towing distances to the primary hunting grounds west of Spitsbergen. Banan had a greater operational range and a more powerful engine, which meant that it reached the whale catchers faster and could tow a greater number of whales back to the whaling station. A/S Nimrod's expedition arrived to an ice-free Isfjorden at the end of May.³⁸² Like previous years, Green Harbour remained frozen and forced the company to take anchor alongside the sea ice where they remained until June 12. Once again, the company started the season here, killing and processing 12 whales into 200 barrels of whale oil.³⁸³

Occasionally throughout the season, drifting sea ice from the east became a problem for the whaling companies. By mid-July, a massive belt of sea ice filled several fjords along the west coast of Spitsbergen. A positive consequence of the sea ice was that the companies could catch whales closer to the archipelago because the whales followed the ice. It is also possible that the quality of whale oil was higher since decomposition of the whale carcasses was minimised because time between killing and processing was reduced. Decomposition (or autolysis) sets in immediately after the whale is killed and has a great impact on the quality and quantity of oil rendered from the whale. A newly killed whale has a body temperature of 37–38°C, which increases to 41°C within 24 hours and to 48°C after 48 hours.³⁸⁴ The body temperature increases because of internal decomposition of the intestines. The process accelerates when it reaches the

³⁸¹ Norsk Fiskeritidende. 1911. P: 21. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³⁸² Norsk Fiskeritidende. 1911. P: 21. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³⁸³ Norsk Fiskeritidende. 1911. P: 21. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³⁸⁴ Tønnesen. J.O.H. *Verdensfangsten 1883–1924, Del 2: 1914–1924. Den Pelagisk fangst 1924–1937*. 1969. Vol 3. P: 8. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

insulating blubber layer, because the increasing body heat is insulated. As a result, whales brought in for processing in Spitsbergen were often expanded like balloons. This meant that the companies could only use the top part of the blubber layer on the back of the whales,³⁸⁵ meaning much of the whale was wasted.



Fig 43. The floating factory Hecla of Alfa & Beta anchored at Kokerineset processing whales alongside its hull. Note the bloated-up whale carcass on the left. Photo published with the kind permission of the Norwegian Polar Institute.

The sea ice withdrew and the whales successively moved westward to Greenland. By the end of the season, the whale catchers were operating 500–600 km west of Spitsbergen. The manager of A/S Nimrod decided to investigate the hunting grounds further north at 80° north, but found few whales there. The company focused on getting their guano factory operational, but without success. Being unable to adapt and make the technology functional to arctic conditions, the station stored hundreds of tonnes of whale bones beside the whaling station for later processing. The hunting season ended on September 1 with a catch of 99 whales, three bottlenose whales, and 3,600 barrels of whale oil.³⁸⁶

³⁸⁵ Transcribed "intervju 25/10-1960 med skipteknisk konsulent Herman Christensen, Oslo". Archive: Norges Hvalfangstforbund, Korrespondanse ang Hvalfangstens Historie. Vol 5. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³⁸⁶ Norsk Fiskeritidende. 1911. P: 21. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

These were sold on the domestic market at Kr0.37 per kg or Kr62.90 per barrel,³⁸⁷ resulting in a profit of Kr222,000 before the company's operational costs were deducted. It is reasonable to assume that the company made a profit large enough to convince Christian Nielsen & Co. to prolong their support. Competition with antarctic hunting grounds for competent gunners greatly affected the total catch of the company. These southern hunting grounds had, by 1910, developed into the largest whaling grounds in the world and a large number of international actors and industrialists were involved. In the 1911 hunting season, the companies had many problems caused by drift ice. For 14 days at the start of the season, the whaling fleet could not sail northwards because of a drift ice belt that extended from Bear Island far into the Barents Sea. Not until June 19 were the ships of A/S Nimrod and Alfa & Beta able to sail into Isfjorden having used their whale catchers to plough a way through the ice. A/S Nimrod used their tug boat Banan, which they fitted with a few cookers, to process the bones, meat, and intestines of 18 whales.³⁸⁸ After these initial challenges, operations ran smoothly until the end of August when the season was over.³⁸⁹

Throughout the season, the whale catchers had to travel far west to reach the primary hunting grounds. This meant long towing distances for the tug boats. Again, Marcussen had sent a whale catcher to investigate the hunting grounds further north, hoping to discover more whales there. At 80° north, the company's whale catcher, Fiskeren, caught a Greenland right whale, a species that was believed to be extinct after decades of exploitation by Dutch, German, and English whalers in the 17th and 18th centuries. The problems with the guano factory continued at Finneset.³⁹⁰ The company's catch for the

³⁸⁷ "Chr. Nielsen & Co. AS. Larvik 25/2-1919. Oliepriser". Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. Archive: Hvalfangerforeningen. Korrespondanse ang salg av hvalolje. Vol: 1. 1907–1939.

³⁸⁸ Norsk Fiskeritidende. 1912. P: 6. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. The company did not process the blubber of these 18 whales, but stored it in a large tank to be processed once they reached the whaling station.

³⁸⁹ Norsk Fiskeritidende. 1912. P: 6. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³⁹⁰ Norsk Fiskeritidende. 1912. P: 6. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. However, Tønnesen (1967, p: 94) suggest that the company got the guano factory operational during the season, and reports that the company produced significant amounts of guano in addition to the whale-oil. Unfortunately, he fails to reference on what he bases his conclusion.

season was 90 whales, of which one-third were blue whales.³⁹¹ The company was able to produce 4,080 barrels of whale oil in addition to a few tonnes of baleen.

After 1905, whale oil prices generally increased, partly because of poor linseed harvests.³⁹² As a result, Christian Nielsen & Co. were able to sell their products on the market for approximately £22 per ton,³⁹³ or Kr0.40 per kg.³⁹⁴ One barrel of whale oil weighed about 170 kg, or approximately six barrels per ton.³⁹⁵ For A/S Nimrod this meant a financial gain of £14,960 or Kr272,000 before deducting the operational costs. It is not unlikely that these profits were similar to those of the 1909 season (Kr139,000). The net profit for A/S Nimrod was more than Kr100,000, which was probably regarded a success by the company management and its shareholders and a testament that their persistency in the Spitsbergen hunting grounds had finally paid off. The result convinced Christian Nielsen & Co. and its shareholders to prolong their support for the project in Spitsbergen.

At the start of the 1912 hunting season, A/S Nimrod stopped at the former whaling station of A/S Finmarken in northern Norway and disassembled a horizontal guano drier that had been used there. At Finneset, the workers made a concrete foundation for the drier outside the northern wall of the existing guano factory building. The reason for placing it here was probably that it was the simplest solution since it avoided re-designing or moving the existing furnace from inside the building. The horizontal guano drier proved to be highly functional and produced 2,700 bags of guano.³⁹⁶

³⁹¹ Norsk Fiskeritidende. 1912. P: 5. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³⁹² Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol: 2. P: 501. In: Den moderne Hvalfangst Historie- Opprinnelse og utvikling.

³⁹³ "Chr. Nielsen & Co. AS. Larvik 25/2-1919. *Oliepriser*". Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. Archive: Hvalfangerforeningen. Korrespondanse ang salg av hvalolje. Vol: 1. 1907–1939.

³⁹⁴ Norsk Fiskeritidende. 1912. P: 27. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

³⁹⁵ Deducted from the data supplied by Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del II: 1914–1924. Den Pelagiska Fangst 1924–1937*. 1969. Vol: 3. P: 7. In: Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling.

³⁹⁶ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol: 2. P: 94. In: Den moderne Hvalfangst Historie- Opprinnelse og utvikling.

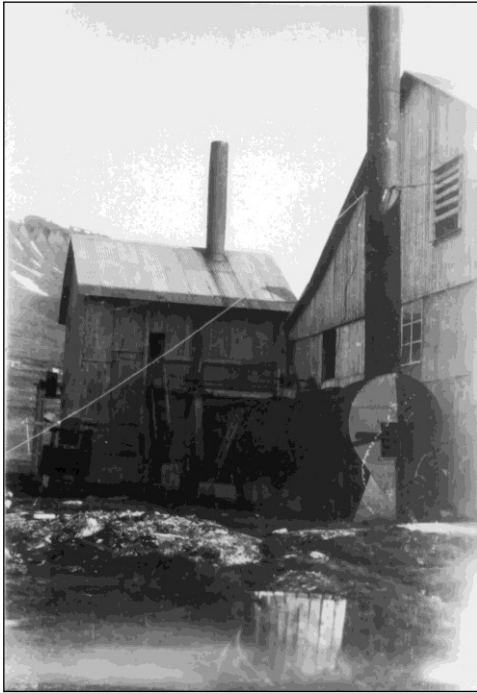


Fig 44. The horizontal guano drier that A/S Nimrod brought up to Finneset whaling station for the 1912 season. This older type of machinery proved to be highly functional in arctic environmental conditions. Photo published with the kind permission of the Norwegian Polar Institute.

Guano production increased the consumption of coal and freshwater. Water was difficult to get at Finneset. A/S Nimrod and A/S Spitsbergen had collected water and brought it to the whaling station through a metal pipe, which was connected to a large metal tank placed higher up in the landscape. There was often less water than the whaling station needed, and sometimes none because the little water available in the area was frozen. Therefore, both companies frequently collected freshwater from a larger river at Sandefjord Point on the south-west side of the fiord. The manager, Anders Marcussen, considered the freshwater issue so problematic that he planned to disassemble and move the entire station to Sandefjord Point. To make this possible, he claimed the entire peninsula at Sandefjord Point on behalf of A/S Nimrod and Christian Nielsen & Co.³⁹⁷

³⁹⁷ Isachsen. G. *Green Harbour*. 1913. In: *L'expédition Norvégienne au Spitsberg 1909-1910* sous la direction du Capitaine Gunanr Isachsen. P: 44.

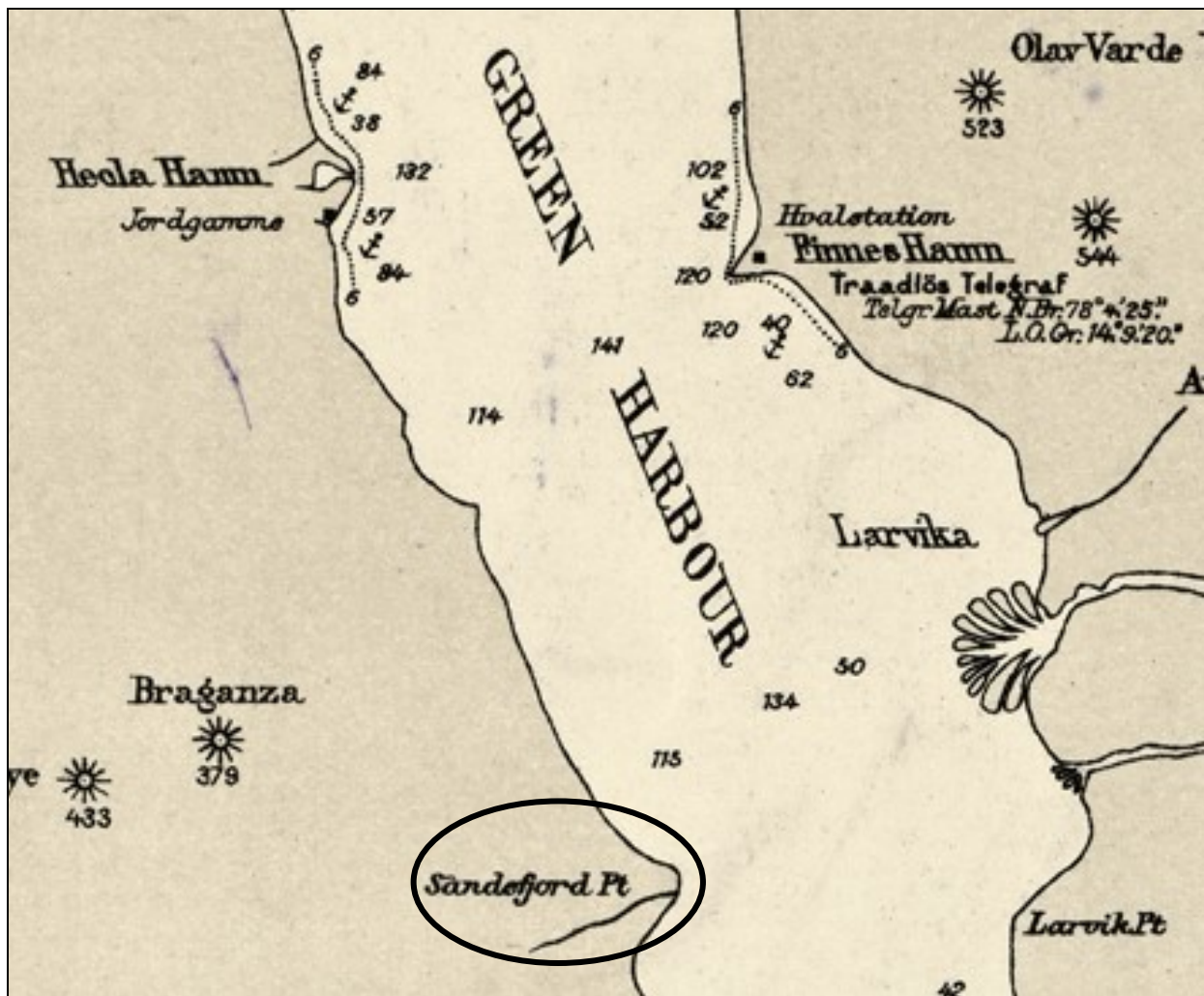


Fig 45. Map of Green Harbour with Finneset, Kokerineset (Hecla Havn), and Sandefjord Point. Sandefjord point is encircled. The map has been published with the approval of the Norwegian National Library.³⁹⁸

Over the following seasons, catches and production improved, but were still rather low compared with antarctic hunting grounds. Despite operating with four whale catchers in 1912, A/S Nimrod only caught 38 whales and produced 1,570 barrels of whale oil.³⁹⁹ These barrels were sold on the domestic market for Kr0.33 per kg,⁴⁰⁰ or Kr56.10 per barrel, giving a result of Kr88,077. Assuming that the annual production costs for the season were similar to those of previous years (Kr139,000), the company suffered a substantial loss of Kr50,923 at the end of the season. Although the 2,700 bags of guano

³⁹⁸ Oversiktskart over Spitsbergen – Sjøkarter optat av Ritmester Isachsens norske Spitsbergenekspedition med Marinen d/s Farm 1909–1910. The Norwegian National library. Reference no-kb_krt_00560.

³⁹⁹ Risting, S. *Av Hvalfangstens Historie*. 1922. P: 262f.

⁴⁰⁰ "Chr. Nielsen & Co. AS. Larvik 25/2-1919. Oliepriser". Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord, Norway. Archive: Hvalfangerforeningen. Korrespondanse ang salg av hvalolje. Vol: 1. 1907–1939.

were sold at approximately Kr11.00 per bag,⁴⁰¹ giving a profit of Kr29,700 before subtracting production costs, it contributed little to recovering the financial losses the company made.

Christian Nielsen & Co.'s decision to sustain and support the industrial project in Spitsbergen had resulted in profits over the last few years. The 1912 result showed that the hunting grounds had become depleted, and that despite having the technical capability to fully utilise the available resources, there were simply not enough resources to continue the project. It is remarkable that a company like Christian Nielsen & Co. – which by 1912 was one of the largest whaling companies in the world, with whaling stations and floating factories in South Georgia, South Shetland Islands, Africa, Australia, and New Zealand –⁴⁰² would support and sustain a small whaling station in Spitsbergen that barely generated a profit. Comparing the catches made by A/S Nimrod with other daughter companies of Christian Nielsen & Co., such as A/S Ocean (South Georgia) and A/S Norge (the South Shetland Islands), it is not clear what the economic motives were behind the project. Throughout 1909–1912, A/S Nimrod caught and processed 295 whales. During the same period, A/S Ocean caught 1,814 whales, and A/S Norge 1,532.⁴⁰³ Although these southern hunting grounds were more remote compared with Spitsbergen, the results show why so many whaling companies chose to abandon the Arctic. Nonetheless, from 1909 to 1912, A/S Nimrod generated (with the exception of the 1912 season) a profit large enough to cover the costs. Consequently, the local network at Finneset and Spitsbergen had maintained the support of Christian Nielsen & Co. and its shareholders until the catastrophic 1912 season, when they made a huge loss.

⁴⁰¹ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del II: 1914–1924. Den Pelagiske Fangst 1924–1937*. 1969. Vol: 3. P: 32. In: *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*.

⁴⁰² Sørensen. G, Hoff. J.O, Halvorsen. L & Salicath. C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 92.

⁴⁰³ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol: 2. P: 376 and 386f. In: *Den moderne Hvalfangst Historie- Opprinnelse og utvikling*. See also: Risting. S. *Av Hvalfangstens Historie*. 1922. P: 366f.

Consolidation and sale

After the results of 1912, the company management decided to sell A/S Nimrod's properties, installations, and claims on Spitsbergen.⁴⁰⁴ One interested buyer was a German company called Mathias Rohde & Co. The aim of this company was to secure territories on Spitsbergen to exploit coal deposits. Mathias Rohde & Co. came in contact with Christian Anker and the Green Harbour Coal Company.⁴⁰⁵ In the summer of 1913, Rhode & Co. sent a geological expedition, under the leadership of Dr. Voit, to Green Harbour and Kings Bay to investigate the potential of the Green Harbour Coal Company's claims. During negotiations between the parties, it became clear that the Germans were also interested in buying the whaling station and the properties of Christian Nielsen & Co. In the spring of 1914, Voit negotiated a potential purchase of Christian Nielsen & Co.'s properties in Spitsbergen with the company.⁴⁰⁶ Due to lack of archival data, it is unclear what was discussed and decided during these negotiations. Whatever these involved, the Germans withdrew from the deal. Having failed to sell the whaling station, Christian Nielsen & Co. left Finneset whaling station dormant during the 1913 and 1914 seasons. Even though Christian Nielsen & Co. probably had no plans to re-open the station, they made contracts with Christian Anker and the Green Harbour Coal Company for coal deliveries to the station on several occasions between 1913 and 1920.⁴⁰⁷ This was because they were negotiating renting out the station. In the summer of 1918, Christian Nielsen & Co. was contacted by Arthur S. Lewin. He was a coal-mining entrepreneur who had rented the claims of A/S De Russiske Kulfelter Green Harbour.⁴⁰⁸ Lewin wanted Christian Nielsen & Co. to support a large scale coal-mining operation in Spitsbergen. Apparently, Christian Nielsen & Co. found his proposal interesting. On August 30 1918, Spitsbergen Trading Co. Ltd A/S was formed under the management of

⁴⁰⁴ "Letter from Chr. Nielsen to Høiesteretsadvokat Kristen Nygaard. Larvik. March 9, 1914". Tromsø StatsArkiv. Norway. Archive: Private archive No 73. Store Norske Spitsbergen Kulkompani. Box. 452 (1914–1916). See also: Norsk Hvalfangsttidende. No 7. July 1920. P: 104f. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁴⁰⁵ Hoel. A. *Svalbards Historie 1596–1965*. 1966. Vol 2. P: 718.

⁴⁰⁶ "Letter to Herr Advokat Carl Lundh". Undated. Tromsø StatsArkiv. Norway. Archive: Private archive No 73. Store Norske Spitsbergen Kulkompani. Box. 452 (1914–1916).

⁴⁰⁷ "Letter to Messrs. Ayer and Longyear. October 25, 1912". Archive of Michigan Technological University. Houghton, USA. Archive: Arctic Coal Company. Scott Turner Collection. MS 031. See also: "Letter from Chr. Nielsen & Co to Herr Høiesteretsadvokat Kristen Nygaard. Kristiania. October 21, 1916", and in letter to "Herr Høiesteretsadvokat Kristen Nygaard. Larvik, May 18, 1917". Tromsø StatsArkiv. Norway. Archive: Privat Arkiv nr. 73. Store Norske Spitsbergen Kulkompani. Box 452. (1914–1916).

⁴⁰⁸ Hoel. A. *Svalbards Historie 1596–1965*. 1966. Vol: 1. P: 259.

Johannesen, Nielsen, Bie, and Bull, the former manager of A/S Nimrod.⁴⁰⁹ On the same occasion, all the rights and properties of A/S Nimrod were transferred to Spitsbergen Trading Co. Ltd A/S.⁴¹⁰ Shortly after, A/S Nimrod was formally dissolved and removed from the Norwegian company registers.⁴¹¹ The purpose of Spitsbergen Trading Co. Ltd A/S was to operate and develop the claims of A/S De Russiske Kulfelter Green Harbour together with Lewin. The project was formally managed by Christian Nielsen & Co., and Arthur S. Lewin managed the technical development of the coal mine in Spitsbergen. The active engagement of Christian Nielsen was short-lived. In the same year, the Norwegian coal-mining company, Store Norske Spitsbergen Kulkompani (SNSK), announced that they wanted to buy the properties and installations of Christian Nielsen & Co.

In November 1918, SNSK's attorney Kirsten Nygaard met with the management and shareholders of the former whaling company at their general assembly in Larvik to discuss the possibilities of purchasing its properties and installations.⁴¹² At this meeting, Mr Nygaard stated that SNSK could offer between Kr100,000 and Kr125,000 for the installations and claims of the whaling company. The shareholders thought the offer was too low to accept, wanting at least Kr132,127, which was the deficit A/S Nimrod had acquired from 1912 onwards.⁴¹³ After discussions in December 1918, SNSK agreed to offer A/S Nimrod and its shareholders Kr140,000. The offer included the claim at Finneset, including the whaling station and all its buildings and machinery.⁴¹⁴ SNSK's offer was accepted by the former owners and shareholders of the whaling company.

⁴⁰⁹ "Fuldmagt til Herr Tönder Bull from the directors of Chr. Nielsen & Co. Larvik. May 29, 1912." Avskrift. Tromsø StatsArkiv. Norway. Archive: Privat Arkiv nr. 73. Store Norske Spitsbergen Kulkompani.

⁴¹⁰ "Letter to Advokat Sven Brun, Kristiania. November 22, 1919", and "Letter from Chr. Nielsen & Co to Herr Advokat Sven Brun, Kristiania. Larvik November 17, 1919". Tromsø StatsArkiv. Norway. Archive: Privat Arkiv nr. 73. Store Norske Spitsbergen Kulkompani. Box: 453. Fldr: 1919–1920, De Russiske Green Harbour feltene.

⁴¹¹ Norsk Hvalfangsttidende. 1919. P: 39 Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁴¹² "Letter from Kirsten Nygaard presented at Store Norske Spitsbergen Kulkompani board-meeting on November 14, 1918". Tromsø StatsArkiv. Norway. Archive: Privat Arkiv nr. 73. Store Norske Spitsbergen Kulkompani. Box: 451. Fldr: 1909–1923, Green Harbour. A/S Nimrod.

⁴¹³ "Letter from Kirsten Nygaard presented at Store Norske Spitsbergen Kulkompani board-meeting on November 14, 1918". Tromsø StatsArkiv. Norway. Archive: Privat Arkiv nr. 73. Store Norske Spitsbergen Kulkompani. Box: 451. Fldr: 1909–1923, Green Harbour. A/S Nimrod.

⁴¹⁴ Hoel. A. *Svalbards Historie 1596–1965*. 1966. Vol 2. P: 808. See also: Gustafsson. U. *Industrialising the Arctic: Settlement design and technical adaptations of modern whaling stations in Spitsbergen and Bear Island*. 2009. P: 47–59. In: Whaling & History III. Editor: Ringstad. J.E. Publikasjon nr. 33. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

The purchase was most likely motivated by SNSK's desire to secure a good supply of potentially profitable coal resources and as much territory as possible for the nation. Today, Finneset and the area south are still owned by the Norwegian company. For a number of years, they rented it out to the Russian mining company Trust Arktikugol under the name "kontrakts-gruva" (contract mine). During the autumn of 1919, the contract between Lewin and A/S De Russiske Kulfelter Green Harbour expired. New negotiations were initiated between Spitsbergen Trading Co. Ltd A/S and the Russian industrialists and the contract was extended until May 1920. After that, the area went back to A/S De Russiske Kulfelter Green Harbour, an area the consortium had invested Kr850,000 in developing.⁴¹⁵ In 1920, the Russian company sold the area to a group of Dutch entrepreneurs who continued to develop the mining settlement, which was named Barentsburg.⁴¹⁶

Unfortunately, I have not been able to find more data that shed light on the driving forces behind the activities of Spitsbergen Trading Co. Ltd A/S. It is probable that Christian Nielsen & Co. saw the investment in a coal mine as potentially profitable. In addition, the investment could have secured coal deliveries to their antarctic whaling expeditions. It is unclear whether any of the 10,200 tonnes of coal, which was mined at the site, was used by any of Christian Nielsen & Co.'s whaling companies.⁴¹⁷ With the sale of A/S Nimrod to SNSK in 1918, and of Spitsbergen Trading Co. Ltd A/S in 1920, the activities of Christian Nielsen & Co. in Spitsbergen came to an end.

Discussion: Christian Nielsen & Co. and A/S Nimrod

Much like other contemporary whaling companies in northern Norway, Laurvig's Intressentskab for Hvalfangst and Christian Nielsen & Co. adapted to the highly competitive situation in northern Norway by extending the operational hunting range of their whale catchers. They also established Shetland Hvalfangerselskap and erected a whaling station at Ronas Voe. In 1904, the company's management decided to move

⁴¹⁵ "Report by Struicken regarding the rights of the Nederlandsche Spitsbergen Compagnie in Spitsbergen". Dutch National Archives. Archive: 2.05.21. Inventaris van het archief van het ministerie van Buitenlandse zaken: A-dossiers, 1919-1940. 1723.

⁴¹⁶ For further reading on the driving forces, motivations and activities of this company please see the dissertation of Dr. Hidde De Haas.

⁴¹⁷ "Report by Struicken regarding the rights of the Nederlandsche Spitsbergen Compagnie in Spitsbergen". Dutch National Archives. Archive: 2.05.21. Inventaris van het archief van het ministerie van Buitenlandse zaken: A-dossiers, 1919-1940. 1723.

their industrial operations to Spitsbergen, where activities were based on a floating factory rather than in a whaling station. This allowed them to operate in two areas that had not been exploited before. In addition, the factory ship gave them the flexibility to go elsewhere if the hunting grounds at Spitsbergen became unfavourable.

The season of 1908 was an offensive re-organisation of Christian Nielsen & Co. The company bought Finneset whaling station and established A/S Ocean with a whaling station at South Georgia. Over the following years, Christian Nielsen & Co. continued to expand and established two whaling companies in 1910–1911: A/S Norge and A/S Spermacet. This made the company a giant in the modern whaling industry, with access to capital, competence, markets, and networks across the globe. A/S Nimrod could, however, not compete with its sister companies elsewhere in terms of catches and output. From 1909 to 1912, A/S Nimrod caught 295 whales and produced 12,240 barrels of whale oil and 2,700 bags of guano. During the same period, A/S Ocean caught 1,814 whales and produced 66,161 barrels of whale oil and 27,985 bags of guano.⁴¹⁸ This gave the shareholders of A/S Ocean a 30% dividend during the first season, and a 100% dividend for the second.⁴¹⁹ Despite comparably meagre results, A/S Nimrod was able to generate a profit that was apparently large enough to secure the prolonged support of Christian Nielsen & Co.

The decision to cease their arctic project after the 1912 season was because the local network failed to generate a profit, although the global network had made several investments in the station over the last few years. Since there was little interest in buying the station, Christian Nielsen & Co. decided to keep it and to rent it out in 1915 and 1916. However, the expedition (under the leadership of Siegwarth) that agreed to rent the station got stuck in the ice and never reached the station. The company maintained this strategy until Lewin managed to interest them in his coal-mining project. Since Christian Nielsen & Co. had failed to sell their properties at a price high enough to compensate the losses they made in 1912, they decided to participate in Lewin's project. To achieve this, Christian Nielsen & Co. transferred the ownership of

⁴¹⁸ Tønnesen. J.O.H. *Verdensfangsten 1883–1924. Del 1: 1883–1914*. 1967. Vol: 2. P: 376. In: Den moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁴¹⁹ Galteland. O. *Hvalfangst på Syd-Georgia. A/S Sandefjords Hvalfangerselskab / A/S Vestfolds fangst fra landstasjonen Strømnes 1906–1931*. P: 167. 2009

A/S Nimrod's properties and claims to the consortium. In 1917, the company expanded their activities and built several new buildings at Heerodden.⁴²⁰

The decision to get involved in the mining project was probably motivated by the belief that there would be a great need for coal after the First World War had ended. Secondly, investing in the project could secure the necessary coal supplies for Christian Nielsen & Co.'s entire whaling enterprise. Christian Nielsen & Co.'s negotiations and later sale of their claims and installations to SNSK was what the company had sought to achieve for several years. Having recovered the accumulated losses A/S Nimrod had made in their final year of operations, Christian Nielsen & Co. withdrew from Spitsbergen.

Shortly after the First World War had ended, a new whaling company established itself at Finneset whaling station in Spitsbergen. Who was the actor behind this project, and what was the purpose of this company? How did this company operationalise their objective, and what were the consequences and results of their activities?

Spitsbergen Hval

As we have seen, Spitsbergen Hval was established by Morten Andreas Ingebrigtsen and his son Andreas Ingebrigtsen in 1920.⁴²¹ Ingebrigtsen started his career hunting beluga whales in Spitsbergen in the 1860s. In 1892, he sold his boat, Hvidfisken, and invested in the steamboat D/S Skytten,⁴²² which he converted into a whale catching boat. Operating with only one whale catcher, Ingebrigtsen caught and processed as many whales as his competitors did with two or more whale catchers each year. In 1905, Ingebrigtsen established a whaling station in Walrus Bay on Bear Island. Having abandoned the arctic whaling grounds in 1908, he went to Angola, Mexico, and later Alaska. In 1920, he returned with his son to Spitsbergen, motivated by a belief that these hunting grounds

⁴²⁰ Rossnes. G. *Norsk overvintringsfangst på Svalbard 1895–1940*. Norsk polarinstitutt, Meddelelser nr 127 1993, side 69–70.

⁴²¹ "Letter from Hvalfangerforeningen to Andr. Ingebrigtsen. Kristiania. May 19, 1920". Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. Archive: Hvalfangerforeningen. Diverse Pakkesaker. Vol: 3. (1912–1922).

⁴²² Ytreberg. N.A. *Tromsø Bys Historie*. 1962. Vol: 2. P: 207 & 217. The background of M.A. Ingebrigtsen will be discussed more thoroughly in chapter 4, which deals with Ingebrigtsens whaling station in Walrus Bay on Bear Island.

had recovered from the exploitation a few years earlier. Ingebrigtsen and his son purchased two whale catchers, Hobarth and Maquaria, which they renamed Sørkap and Viking III.⁴²³ These boats were larger and more powerful and had a larger operational radius compared with the whale catchers previously used in Spitsbergen.

Risting (1922) states that he knew of no other hunting ground where sea ice had such an influential and dictating role on the success or failure of industrial projects as it had in Spitsbergen. He argued that a company of experienced whalers equipped with modern hunting capability could probably make arctic whaling profitable once again.⁴²⁴ It is remarkable how much faith the whalers appear to have had in these hunting grounds. A/S Nimrod and Alfa & Beta had been motivated by similar beliefs. Similar beliefs also encouraged Christensen and Siegwath to make an attempt in 1915 and 1916. Although these failed to make a profit because of poor catches, Morten Andreas Ingebrigtsen and Andreas Ingebrigtsen still chose to make a new attempt.

In May 1920, the company made a deal with SNSK to rent Finneset whaling station.⁴²⁵ Spitsbergen Hval agreed to pay an annual rent of Kr5,000 in addition to Kr5 per barrel of whale oil and Kr0.50 per bag of guano they produced throughout the season. In return, SNSK would supply the station and the whaling company's boats with 500–800 tonnes of coal annually.⁴²⁶ Even though Ingebrigtsen and his son only rented the whaling station for a single season, they negotiated an option in the contract that allowed them to re-new the contract for another five years, and a right to buy the whaling station if they wanted.⁴²⁷ Throughout the 1920 season, the company's two whale catchers hunted off the west coast of Spitsbergen, where there were few whales. The company decided to try even further west in an area between Spitsbergen and Greenland. But the result was

⁴²³ Norsk Hvalfangsttidende. No 9, Sept 1920. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁴²⁴ Risting. S. *Av Hvalfangstens Historie*. 1922. P: 266.

⁴²⁵ "Contract between Store Norske Spitsbergen Kulkompani A/S and Whaler Andr. Ingebrigtsen. May 3, 1920". Tromsø StatsArkiv. Norway. Privatearchive no 73. Store Norske Spitsbergen Kulkompani. Vol: 453. Fldr: 1917–1925, Green Harbour. Eiendomsforhold.

⁴²⁶ "Contract between Store Norske Spitsbergen Kulkompani A/S and Whaler Andr. Ingebrigtsen. May 3, 1920". Tromsø StatsArkiv. Norway. Privatearchive no 73. Store Norske Spitsbergen Kulkompani. Vol: 453. Fldr: 1917–1925, Green Harbour. Eiendomsforhold.

⁴²⁷ "Contract between Store Norske Spitsbergen Kulkompani A/S and Whaler Andr. Ingebrigtsen. May 3, 1920". Tromsø StatsArkiv. Norway. Privatearchive no 73. Store Norske Spitsbergen Kulkompani. Vol: 453. Fldr: 1917–1925, Green Harbour. Eiendomsforhold.

the same. The end result for 1920 was a catch of 18 whales and 549 barrels of whale oil.⁴²⁸ The prices for whale oil had been negotiated by the Norwegian Whaling Union to £90 per ton for No 1, £85 for No 2, £80 for No 3, and £72 for No 4.⁴²⁹ Spitsbergen Hval sold their oil for £7,813.08 before paying production costs and salaries⁴³⁰ and the required Kr2,745 plus Kr5,000 rent to SNSK. The season's catches and production must have been a financial loss, and Ingebrigtsen withdrew from Spitsbergen. The results of Spitsbergen Hval are a testament to the devastating long-term effects that large-scale industrial exploitation had on whale stocks in the north, and highlighted that it would take more than a few years for whale populations to recover. Although whales do migrate over great distances to feed and breed, it is unlikely that changing migration patterns caused the declining catches. Uncontrolled exploitation that initially included eight competing whaling companies and an abundance of whale catchers simply diminished the whale stocks after a few years. This fact, together with difficult climatic circumstances, explains why later attempts to re-open and exploit these hunting grounds failed.

In spite of the results of this project, a number of industrial projects took place later that targeted whale stocks in the north Atlantic using pelagic floating factory ships that could process whales at sea. This enabled actors to pursue whales wherever they were and was not bound to a land-based production unit for processing and supplies.

Discussion: Spitsbergen Hval

Ingebrigtsen and his son's plan to re-open the whaling station at Finneset was motivated by the same belief and hope that encouraged the same industrial projects throughout the second decade of the 20th century. Despite renting a station with the capacity to fully utilise the resources and two modern whale catchers operated by very experienced whaling entrepreneurs, the project failed. The failure of this project marked the end of

⁴²⁸ Norsk Hvalfangsttidende. No 9, Sept 1920. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. There is indeed a striking difference between the results of the two whale catchers; while Viking under the leadership of Andreas Ingebrigtsen managed to catch 13 whales, Sørkap under the management of M.A. Ingebrigtsen only managed to catch 5. Of the annual production of 549 barrels; 265 barrels were No 1, and the remaining 284 No 4.

⁴²⁹ Risting. S. *Av Hvalfangstens Historie*. 1922. P: 462f.

⁴³⁰ The prices have been deducted from data supplied by Risting. S (1922), p: 462f, and by calculating the number of tonnes of oil Spitsbergen Hval produced throughout the season, by dividing the number of barrels with 5.88 (*the number of barrels per ton*). Please see price-discussion on page 20.

the shore-based whaling industry in Spitsbergen. It is curious that Ingebrigtsen later returned to Spitsbergen to hunt and exploit beluga whale stocks as he had done during the 1880s.

Finneset as a base for pelagic whaling

From 1915 onwards, a number of semi-pelagic attempts to exploit the whale stocks of Spitsbergen were conducted. I will only briefly discuss these and their results since they were semi-pelagic and not connected to Finneset whaling station. These expeditions were all primarily motivated by the relatively high whale oil prices.⁴³¹ An attempt by Christensen and Siegwarth failed in 1915. The first relatively successful attempt took place in 1918–1919 by the Norwegian brothers Sæbjørnsen, who operated in the waters of Spitsbergen with the boat Vikertangen. Although their boat was relatively small, they managed to kill and process 14 fin whales and four bottlenose whales.⁴³² After this attempt, no one invested in whaling projects in the Arctic until the summer of 1926. Tønnesen and Johnsen (1969) argued that interest in whaling in the Arctic was reignited because many believed that the whale populations had recovered after six years of no hunting. A contributing factor was also the relative vicinity of the arctic hunting grounds compared with the Antarctic, which reduced operational costs and encouraged investment in smaller expeditions.⁴³³ One must not overlook the domestic market and the increasing need for oil and fat, especially during the First World War when whale oil from the Antarctic was classified as contraband by the British authorities.⁴³⁴ In 1926 and 1927, a semi-pelagic whaling expedition was managed by Andreas Nilsen of Sandefjord. The expedition used one floating factory ship (Foldin 1) and two whale catchers (Maar 1 and Ulv 1).⁴³⁵

⁴³¹ Tønnesen. J.O.H. *Verdensfangsten 1883-1924, Del 2: 1914-1924. Den Pelagiske Fangst 1924–1937*. Vol: 3. P: 224. In: *Den Moderne Hvalfangst Historie- Opprinnelse of Utvikling*. 1969.

⁴³² Norsk Hvalfangsttidende. Nr 11, November 1926. P: 173. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁴³³ Tønnesen. J.O.H. *Verdensfangsten 1883-1924, Del 2: 1914-1924. Den Pelagiske Fangst 1924–1937*. Vol: 3. P: 228. In: *Den Moderne Hvalfangst Historie- Opprinnelse of Utvikling*. 1969.

⁴³⁴ "Brev fra den Kgl. Utenriksdepartementet til den norske hvalfangerforeningen. 15. August 1914". Archive: Hvalfangerforeningen. Div pakkesaker, Vol: 4. 1913-1920. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁴³⁵ Norsk Hvalfangsttidende. No 11. November, 1927. P: 185. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.



Fig 46. The floating factory ship Foldin 1 anchored at the former Finneset Whaling station in Green Harbour on Spitsbergen in 1926. The photo has been published with the kind approval of the Norwegian Polar Institute.

It would be wrong to refer to this expedition as a pelagic, since Foldin 1 was unable to operate and process whales at sea. The expedition used the harbours at Bellsound as well as Safe Harbour and Green Harbour in Isfjorden.⁴³⁶ The result of the expedition over two seasons was a catch of 77 whales and 3,008 barrels of whale oil.⁴³⁷ This result was too small to encourage further activities.

The next attempt took place in 1928, by Leif Bryde and his company Ishavet A/S.⁴³⁸ Bryde had previously operated in Spitsbergen and gained knowledge of good anchorages and where to find freshwater supplies. Bryde purchased the diesel powered ship M/S Haugar and two whale catchers in Haugesund in southern Norway. M/S Haugar had a capacity to store 18,000 barrels and could produce up to 400 barrels per day.⁴³⁹ Compared with the floating factories used in 1903–1912, this factory ship was

⁴³⁶ "Skipsjournal. D/S Ulv 1. M. Torgersen (maskinmester), 1927". Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. Archive: Skipsjournaler. F-skipsjournaler, D/S Ulv 1. Vol: 0230. Fldr: 1926–1927.

⁴³⁷ Norsk Hvalfangsttidende. No 11. November, 1927. P: 185. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway, and Tønnesen. J.O.H. *Verdensfangsten 1883–1924, Del 2: 1914–1924. Den Pelagiske Fangst 1924–1937*. Vol: 3. P: 228. In: Den Moderne Hvalfangst Historie- Opprinnelse of Utvikling. 1969.

⁴³⁸ Norsk Hvalfangsttidende. No 11. November, 1926. P: 169, and Norsk Hvalfangsttidende. No 5. May 1929. P: 124. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. See also: Tønnesen. J.O.H. *Verdensfangsten 1883–1924, Del 2: 1914–1924. Den Pelagiske Fangst 1924–1937*. Vol: 3. P: 228f. In: Den Moderne Hvalfangst Historie- Opprinnelse of Utvikling. 1969.

⁴³⁹ Norsk Hvalfangsttidende. No 5. May 1929. P: 124. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

well equipped and modern. The first purpose-built factory ship that operated in these waters was A/S Ørnens Admiralen. This 1,500-ton ship could only process blubber and store 5,000 barrels of whale oil.⁴⁴⁰ In comparison, the 2,242-ton M/S Haugar was equipped with ten cookers for processing meat and bones, and one Hartmann cooker for processing blubber.⁴⁴¹ Initially, Bryde planned to rent Finneset whaling station from SNSK,⁴⁴² but for unknown reasons he chose to buy a floating factory instead. In the 1929 season, the expedition operated in the waters of Bear Island and they made good catches over the three months they operated there, resulting in a profit of Kr74,000.⁴⁴³ Despite making a profit, the company did not return to these arctic hunting grounds until 1933. For that expedition, Bryde hired Andreas Ingebrigtsen to manage the expedition.⁴⁴⁴ Unfortunately, I have been unable to uncover any results for the 1933 season, but the 1934 results amounted to a catch of 150 whales and a production of 6,799 barrels of whale oil.⁴⁴⁵ It is remarkable that actors continued to invest in whaling expeditions in the Arctic even though most made poor catches compared with other hunting grounds. Most of these attempts were motivated by the domestic need for oil and fat combined with beliefs that arctic whale populations had recovered after a break from hunting.

Finneset whaling station

It was the Norwegian whaling company A/S Spitsbergen that built the whaling station at Finneset. They moved it from northern Norway and rebuilt it over a period of six weeks in the summer of 1905. The company established the station to process blubber, meat, and baleen. In August 2007, an international team of LASHIPA researchers surveyed and conducted a comprehensive archaeological documentation of all remains of human

⁴⁴⁰ Norsk Hvalfangsttidende. No 8. August 1929. P: 202f. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁴⁴¹ "Dagbok Hvalfångstselskapet Haugar A/S. Bestyrer Andr Ingebrigtsen, dagbokfører Peder Nüst 1ste styrman. 1934". Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. Archive: Hvalrådet. Fångstdagbøker 1931–1943. Vol: 15. Fldr: Hvalfangstselskapet Haugar A/S.

⁴⁴² Norsk Hvalfangsttidende. No 11. November, 1926. P: 169. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁴⁴³ Tønnesen. J.O.H. *Verdensfangsten 1883–1924, Del 2: 1914–1924. Den Pelagiske Fangst 1924–1937*. Vol: 3. P: 229. In: *Den Moderne Hvalfangst Historie- Opprinnelse of Utvikling*. 1969.

⁴⁴⁴ "Dagbok Hvalfångstselskapet Haugar A/S. Bestyrer Andr Ingebrigtsen, dagbokfører Peder Nüst 1ste styrman. 1934". Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. Archive: Hvalrådet. Fångstdagbøker 1931–1943. Vol: 15. Fldr: Hvalfangstselskapet Haugar A/S.

⁴⁴⁵ "Dagbok Hvalfångstselskapet Haugar A/S. Bestyrer Andr Ingebrigtsen, dagbokfører Peder Nüst 1ste styrman. 1934". Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. Archive: Hvalrådet. Fångstdagbøker 1931–1943. Vol: 15. Fldr: Hvalfangstselskapet Haugar A/S.

activity at Finneset, as well as other contemporary whaling sites in Green Harbour. The team used total station, highly accurate GPS units, photography, hand measurements, and text descriptions of the sites, and added this data to a database. The primary purpose of this work was to study how whaling companies a) organised their production system, b) arranged their settlement for employees, c) adapted technologies, machines, and settlement plans to local environmental and political circumstances, and d) claimed ownership to territories and freshwater resources.

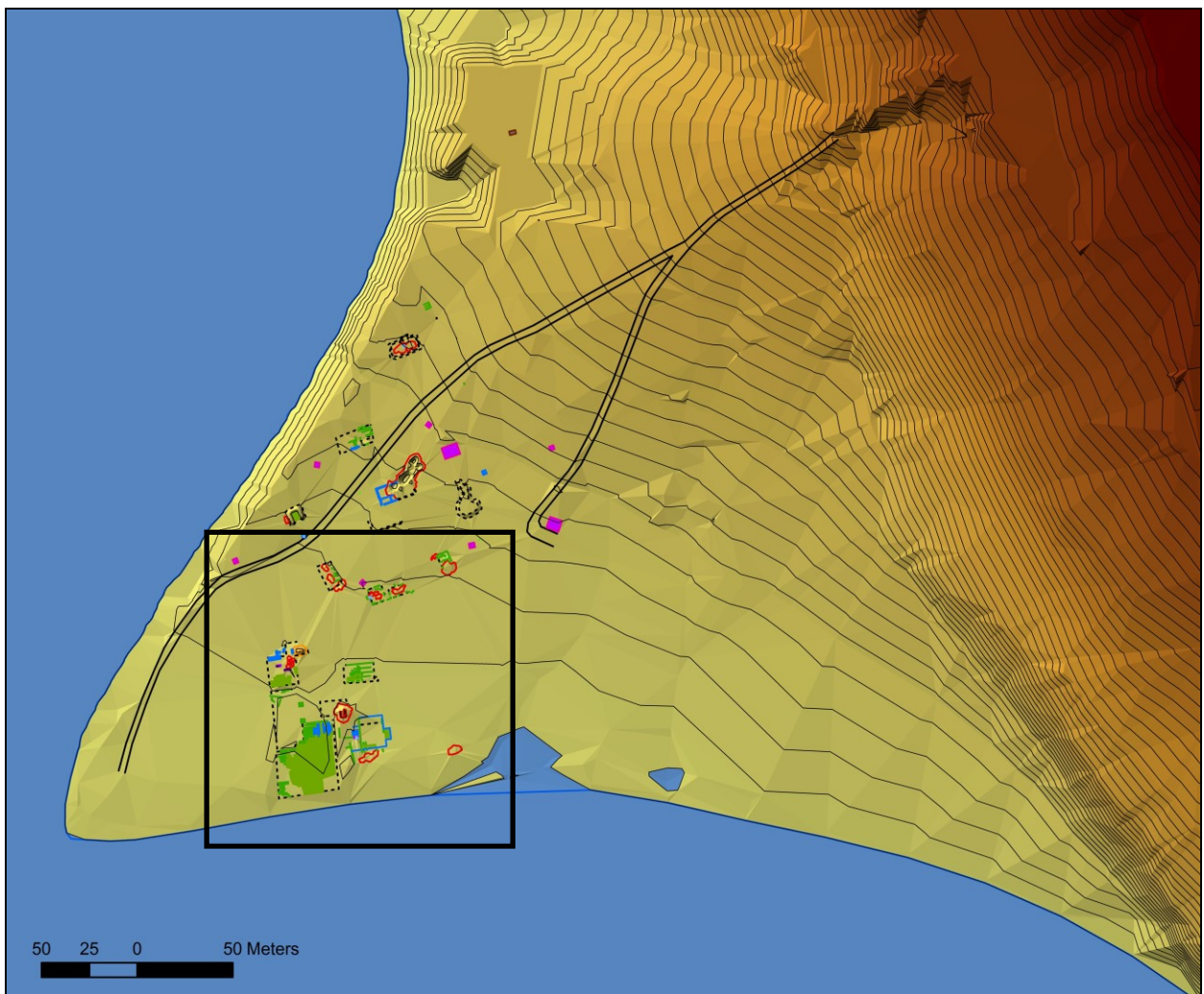


Fig 47. Total station map of Finneset peninsula and the whaling station by: Bolhuis.E, Gustafsson.U.I, Avango.D, De Haas.H, Hartnell.C and Depasqual.S. LASHIPA 5/ 2007. The remains of the whaling station are located within the demarcated box on the southern side of the peninsula. On the northern side of the peninsula, there are remains of a telegraph station.

Features of Finneset whaling station

Please see LASHIPA 4 fieldwork report (2007) for more details.

1 – Workers' barracks	2 – Manager's villa
3 – Bakery	4 – Guano factory
5 – Meat cookery	6 – Flensing platform
7 – Bedding	8 – Steam engine house
9 – Blubber cookery	10 – Blubber cutter
11 – Forge	12 – House foundation
13 – Shed foundation	14 – Shed foundation
15 – Area for drying baleen	40 – Wooden construction
41 – Wooden construction	45 – Grave

The former whaling station of A/S Finmarken, which A/S Spitsbergen purchased in 1905, was initially designed to process blubber and meat. Later, the station was equipped with a guano factory, which allowed full utilisation of the raw materials. The production process started as soon as whale catchers delivered the whales to the south-side of the station at high tide. From here, the whales were pulled onto the flensing platform where the workers cut off the blubber layer into long strips. These were pulled off the carcass using powerful steam winches.⁴⁴⁶ The remainder of the carcass was towed onto an elevated wooden platform called the lemming platform. Here, the meat was separated from the body and processed. The meat was cooked into whale oil in cookers under the lemming platform. Initially, bones were collected in large piles on the shore east of the station. After the guano factory was assembled, the bones were crushed by a steam-powered hammer device into small pieces before being fed into the guano mill. Beside the local manager and the crew onboard the two whale catchers (Fin and Frey), the station employed 40 men in the production line.⁴⁴⁷

In May 1905, A/S Spitsbergen dismantled the houses and installations at the whaling station in northern Norway. A few weeks later, the expedition arrived in Spitsbergen with the cargo. During June, the workers started to erect the whaling station. The buildings at Finneset whaling station were subdivided into accommodation, production,

⁴⁴⁶ Ohlin. A. *Några anteckningar om den nutida hvalfångsten i norra ishafvet*. 1894. P: 153. In: Ymer. Tidsskrift utgifven af Svenska Sällskapet för antropologi och geografi.

⁴⁴⁷ Ohlin. A. *Några anteckningar om den nutida hvalfångsten i norra ishafvet*. 1894. P: 154. In: Ymer. Tidsskrift utgifven af Svenska Sällskapet för antropologi och geografi.

and ancillary functions.⁴⁴⁸ These were designed to process the raw material as effectively as possible and to generate economic profit. The company painted the name *Firma Severin Dahl* in large letters on the blubber cookery. Whether this was done to enforce their territorial claim or not remains uncertain, but if this was the purpose, it would have been more effective to paint it on the opposite side of the building, which faces the fiord opening where competitors would have come sailing in. In addition to this, the company erected several claim boards in the surrounding landscape that stated the company's name.



Fig 48 and 49. Firma Severin Dahl's name painted visibly on the southern side of the blubber cookery at Finneset whaling station. Right: A/S Spitsbergen's claim board, which the company erected in the surrounding landscape to establish their rights to the area. Both photos published with the kind approval of the private archive of Fred Tibbets (USA) and The Norwegian Polar Institute.

⁴⁴⁸ LASHIPA 4 fieldreport. 2007. P: 24–36. See also: Isachsen. G. *Green Harbour*. 1913. P: 41f. In: *L'expédition Norvégienne au Spitsberg 1909–1910 sous la direction du Capitaine Gunnar Isachsen.*

The organisation of production

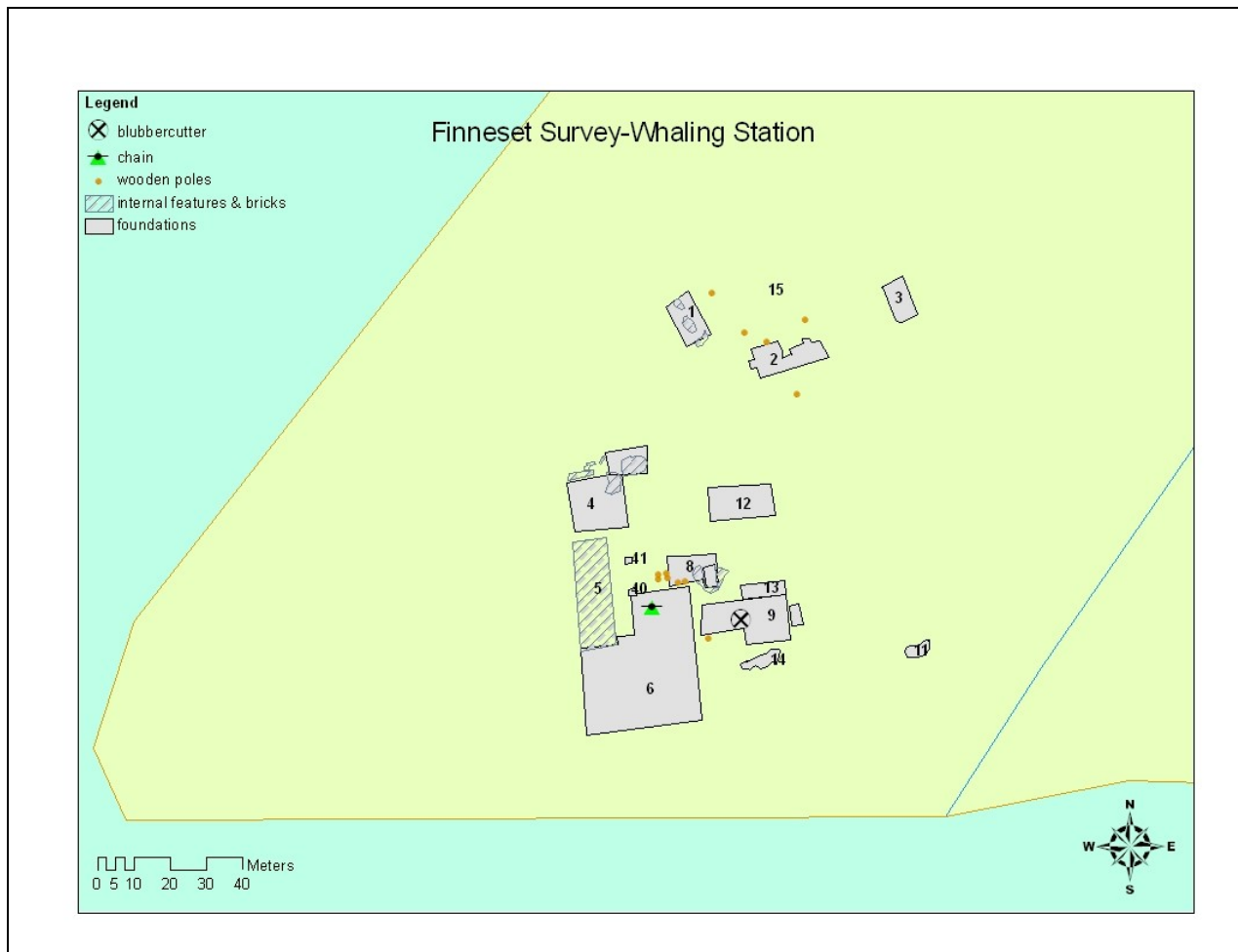


Fig 50. Features recorded at Finneset Whaling Station survey area. The area contains remains of A/S Spitsbergen, A/S Nimrod, and other actors' industrial activities in 1905–1927. Map by Ulfi Gustafsson and Dag Avango.

The production process at the whaling station started on the south-facing wooden flensing plan (Fig 50, No 6). The platform faced south so the company could use the sheltered and deep harbour on the southern side of the peninsula, instead of the north-facing part of the peninsula, which is more exposed and less deep. The flensing plan was equipped with three steam winches on the northern end of the platform. These were used to haul the whale carcasses from the water onto the flensing platform for processing. The platform was also equipped with two manual winches on the west side of the plane, which rotated the carcass.⁴⁴⁹ On the flensing platform, flensers cut the blubber layer into long strips. These strips were pulled off by attaching wires from the

⁴⁴⁹ Gustafsson, U.I. *Industrialising the Arctic: Settlement design and technical adaptations of modern whaling station in Spitsbergen and Bear Island*. 2010. P: 51. In: *Whaling & History III*. Editor: Ringstad, J.E. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

steam winches to a small hole that was cut in the blubber. The strips of blubber were fed into a large box containing a steam-driven rotating blubber cutter.⁴⁵⁰ This device was an extension of the blubber cookery (Fig 50, No 9). The blubber cutter was equipped with a large metal wheel fitted with two large, sharp blades that rotated at high speed and cut the blubber strips into smaller pieces. This device was connected to an elevator, which transported the blubber pieces to the second floor of the blubber cookery. It was important to cut the blubber into smaller pieces since it made the cooking process more effective. Once on the upper floor, the blubber pieces were distributed into eight vertical open blubber cookers, which processed the blubber into oil. As soon as one cooker was filled, steam was turned on to start the cooking process and the blubber was cooked for approximately 10 to 12 hours.⁴⁵¹

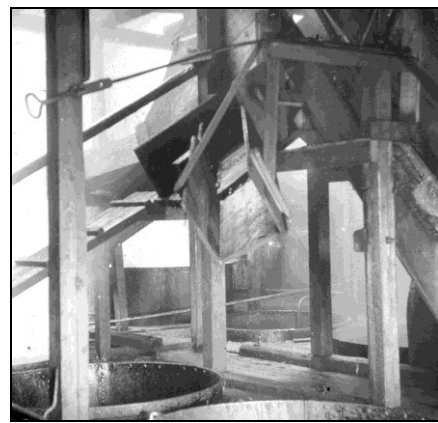


Fig 51 and 52. Remains of the rotating blubber cutter at Finneset whaling station. Right: the upper floor of the blubber cookery. Note the elevator on the far right, which transported the pieces of blubber to the first floor, and which were distributed into the cookers via a wooden distribution system. Photos: Ben Bekooy. LASHIPA 5/2007. The photo on the right has been published with the kind approval of Michigan Technological University, USA.

Finneset whaling station had circular open iron cookers with a steam pipe and tapping mechanism attached in the bottom of each cooker. Once the blubber was cooked, the cooker was tapped to remove the whale oil. The whale oil was transferred into open clearing tanks where it was left to cool before being tapped into wooden barrels and stored nearby the whaling station. At the end of the season, the barrels were loaded onboard the company's ships and transported to the markets for sale. Wooden barrels

⁴⁵⁰ The LASHIPA 4 archaeological expedition on Svalbard. Fieldwork report, 2007. Pp: 24–35.

⁴⁵¹ Tønnesen. J.O.H. *Verdensfangsten 1883–1924, Del 2: 1914–1924. Den Pelagiske Fangst 1924–1937*. Vol: 3. P: 10. In: *Den Moderne Hvalfangst Historie- Opprinnelse of Utvikling*. 1969.

were often a nuisance for the companies. Not only were they expensive and took up precious storage space onboard the ships, they also had a tendency to leak.

After the blubber layer was stripped, the whale carcass was rotated using two manual winches and positioned on the west side of the flensing plan. Here, the carcass was attached to a steam winch on the north side of the lemming plane and pulled onto an elevated wooden platform for further processing (Fig 50, No 5). Meanwhile, a new whale was pulled onto the flensing plan. It was important that all parts of the process went as planned otherwise the whole chain of production was halted. This had a direct effect on the output, the quality of the oil, and the salary of the workers.



Fig 53. Flensing workers and general workers busy processing whales on the flensing platform. Note the two manual winches operated by two workers in the background. Photos published with the kind approval of Michigan Technological University, USA.

The meat-cutting platform (lemming platform) and cookery (Fig 50, No5) was an elevated extension of the wooden plan. This platform was equipped with one steam winch, one boiler, and five open cookers beneath the platform itself.⁴⁵² The lemming workers cut whale meat from the bones into smaller pieces to maximise the effect of the

⁴⁵² Gustafsson. U.I. *Industrialising the Arctic: Settlement design and technical adaptations of modern whaling station in Spitsbergen and Bear Island*. 2010. P: 51. In: *Whaling & History III*. Editor: Ringstad. J.E. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

cooking process. It is likely that the meat took longer to cook than the blubber, since the cookers were more exposed. Cooking the meat was not as important since the oil produced from meat was lower quality (No 3 and No 4) and less valuable than the high-quality blubber oil (No 1 or No 2). After the meat was cooked, residues such as grax and glue water were drained from the cookers and thrown into a small tide water lake immediately west of the station. The whale bones were collected in large piles beside the whaling station to be processed into guano and bone meal at the guano factory (Fig 50, No 4). This factory was built as an extension of the meat cutting platform. The guano factory made production more effective since the bones and residues were transferred directly to the next phase of production rather than being discarded.

Although A/S Nimrod invested in new machines to process the whale, they were not able to process whale bones until 1912. Initially, the guano factory was equipped with two vertical driers placed inside the building. Over three years, A/S Nimrod failed to make the factory operational. This was because they could not get the new driers to work and had to disassemble an older horizontal drier from A/S Finmarken's former whaling station in northern Norway. This drier was placed alongside the northern wall of the existing factory building and allowed the company to dry the whale bones without redesigning the building and changing the flow of production. At the opposite end of the drier, the company placed a small elevator, which transported the finished product (guano and bone meal) inside the building where it was packed into bags and stored until the end of the season. In addition to producing whale oil, whaling companies also utilised baleen. Baleen are the bone plates used by baleen whales to sieve food. These were cut from the whales' mouths, cleaned, and washed in caustic soda before being dried in an open area immediately north east of the production area. Steam for the whole whaling station was produced and supplied by the steam boiler house (Fig 50, No 8). This building was equipped with three boilers and one large water container.⁴⁵³ To produce enough steam, a constant flow of freshwater and supply of coal were needed. Coal could be purchased from local coal mines, but access to freshwater posed a bigger problem for whaling companies.

⁴⁵³ "Hvalstationen I Green Harbour". Inventory report by SNSK. Tromsø StatsArkiv. Store Norske Spitsbergen Kulkompani. Privatearchive no 73. Vol: 451. Fldr: Green Harbour. Topografiske kart, bygninger, tekninger.

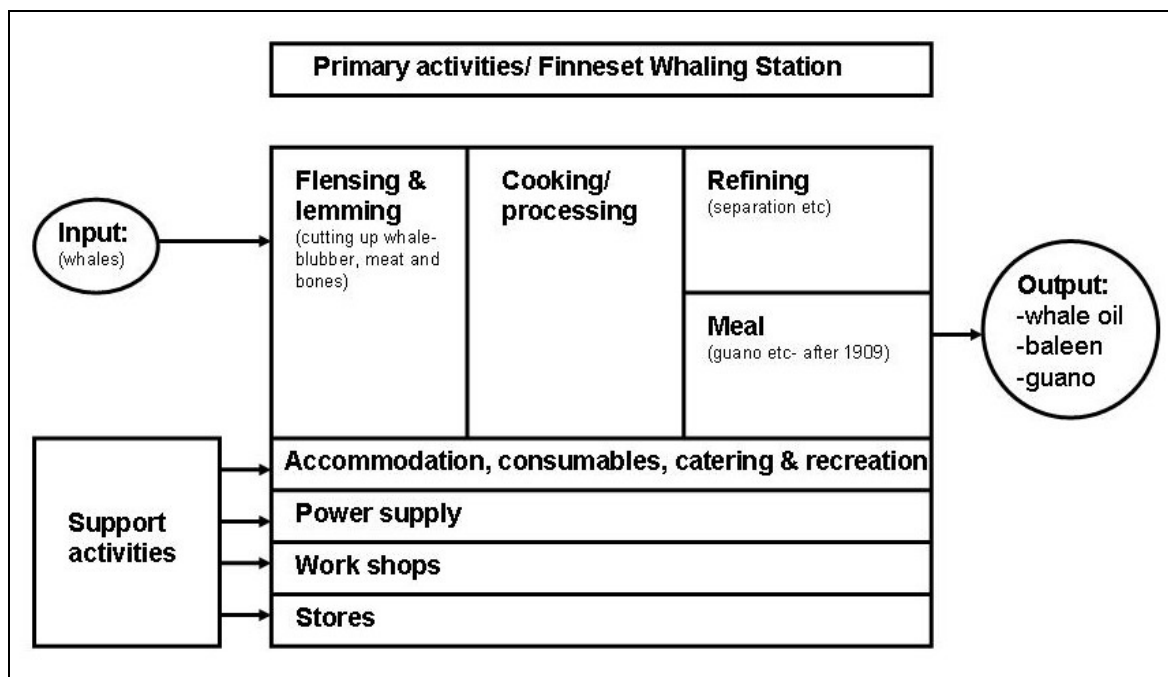


Fig 54. Primary activities at Finneset whaling station 1905–1921.

The primary source of water was a small run-off stream that ran from the mountains east of the station area. To make the most effective use of this stream, A/S Spitsbergen constructed a small dam and placed a large metal tank beside it. From this tank, they led a pipe through the landscape to the whaling station. One of the disadvantages of this small stream was that it frequently froze.

A/S Spitsbergen adapted and partly solved this problem by collecting water at a glacial river on the south-west side of Green Harbour, a procedure which A/S Nimrod adopted when they took over the station. Coal for producing steam was, during the first few years, primarily purchased in Norway and brought to the archipelago onboard the boats. Some whaling companies bought coal from the two mining settlements at Advent Bay,⁴⁵⁴ Advent City operated by the British Spitsbergen Coal & Trading Co. Ltd, and Longyear City operated by the American ACC. In 1907, the ACC established a small coal mine in Green Harbour and became one of the largest local coal suppliers for the

⁴⁵⁴ "Letter from Ernest D.Black (onsite manager for the Spitzbergen Coal & Trading Co. Ltd in Spitsbergen) to F. Davenport Esq. Advent Bay, July 30. 1907". National Museum of Science and Technology. Stockholm, Sweden. Archive: William Olsson's Archive 1899–1922. Vol: F2:20. Also in: "Letter from Johan Bryde to the Norwegian Foreign Ministry. 12/11–1908". Archive of the Norwegian Foreign Ministry. Vol: 5174, sak 8-9, Johan Bryde. Norwegian National Archives

whaling industry.⁴⁵⁵ The whaling companies could purchase coal at a local market, saving valuable space onboard their boats going to the hunting ground and during the season in Spitsbergen.

The forge (Fig 50, No 11) and the repair shop (Fig 50, No14) at Finneset whaling station maintained the station's technical elements and keep them functional. This house was located on the east side of the Finneset peninsula some distance from the blubber cookery. This was probably because the blacksmith worked with an open fire pit, which the company obviously wanted to keep away from flammable whale oil. The forge also assembled whale oil barrels and sharpened and repaired flensing knives. By organising and structuring production this way, whaling companies could process whales into whale oil and other by-products effectively.

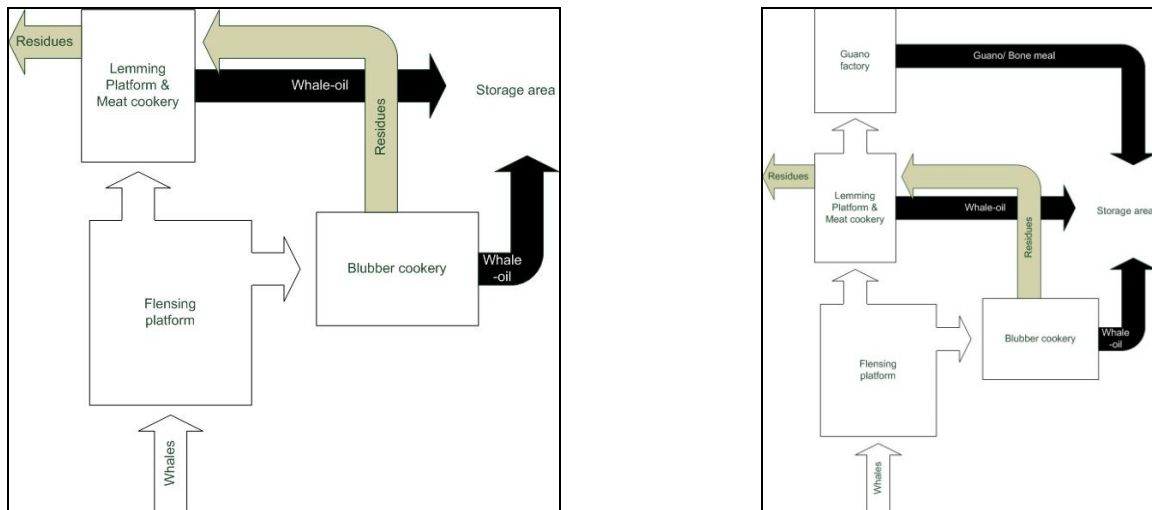


Fig 55 and 56. The flow of production at Finneset whaling station under A/S Spitsbergen 1905–1909 (left) and A/S Nimrod 1909–1912 (right).

The south-facing position of the whaling station did not only offer protection. The deeper water on the southern side made it easier for whale catchers to deliver whales to the station, which made the on-shore work easier. The company management placed the accommodation buildings north of the main production area to separate the workers from the station manager. The workers were accommodated in a 10.5 x 7.5 m insulated

⁴⁵⁵ "Letter from Tønder Bull to the Norwegian Foreign Ministry. Kristiania. July 2, 1910". Tromsø StatsArkiv. Archive: Store Norske Spitsbergen Kulkompani. Private archive no: 73. Vol: 451. Fldr: 1909–1923 Green Harbour, A/S Nimrod.

wooden barracks containing four large rooms each with ten beds (Fig 50, No 1).⁴⁵⁶ The manager's house (Fig 50, No 2) had a south-facing view. The status of the manager's house was displayed with a flagpole at the front of the house flying the newly independent Norway's national flag. It is possible that some of the workers, such as the blacksmith and the baker, were accommodated at their respective workplaces since these were large enough to accommodate beds. Unfortunately, there is no data to either support or disprove this.

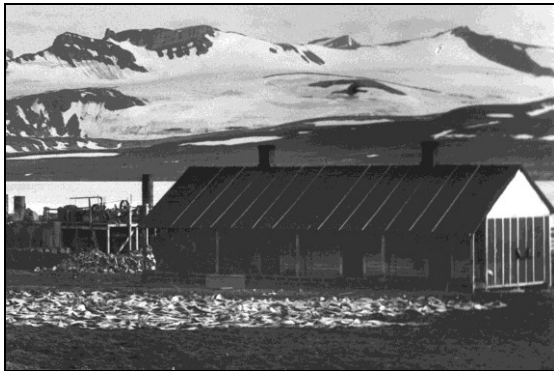


Fig 57 and 58. The workers barrack at Finneset whaling station during the first decade of the 20th century. Right: Remains of one of the workers barracks chimneys and stoves. The documentation and mapping of the remains at Finneset revealed information on spatial layout and the organisation of production, as well as architectural features of the stations features. Photo published with the kind approval of Norsk Folkemuseum photo collection. Right: Ben Bekooy. LASHIPA 5/2007.

Wooden houses at the whaling station were double-walled and covered with tar paper to improve insulation and to protect from cold winds. The roofs had corrugated steel plates. Fieldwork shows that each building contained one or more heat sources (ovens) depending on the number of people living there. These ovens provided a hospitable temperature and allowed the workers to dry their clothes.

The station's ancillary functions included a kitchen and mess (Fig 50, No 2), a bakery (Fig 50, No 3), food storage (Fig 50, No 21), and a graveyard (Fig 50, No 45).⁴⁵⁷ These were located north of the station away from the odour and noise of the production area. The kitchen and mess were placed beside the manager's house, while the bakery was located approximately 100 m to the east. This was probably for safety reasons, since the

⁴⁵⁶ "Hvalstationen I Green Harbour". Inventory report by SNSK. Tromsø StatsArkiv. Store Norske Spitsbergen Kulkompani. Privatearchive no 73. Vol: 451. Fldr: Green Harbour. Topografiske kart, bygninger, tekninger.

⁴⁵⁷ See appendix for a larger map over Finneset peninsula.

building had a brick furnace, and to keep food and bread away from the smell of the station. The company also built food storage inside an elevated earth embankment north of the kitchen building. This allowed food to be stored in a cold and dark place and kept it fresh for longer. On an elevated brink north-east of the peninsula, the whaling company established a graveyard. In the period 1905 to 1912, at least one whaler lost his life while working at the station. Today, his grave remains standing in the landscape as a part of the archipelagos cultural heritage. Operating and hunting whales in harsh arctic conditions was dangerous due to ice and low water and air temperatures and this is reflected by the many graves of Dutch and German 18th century whalers. Falling into these waters rapidly reduced body temperatures and caused death within a few minutes. This was an ever present danger for the whale catcher crews. At whaling stations and on pelagic platforms, flensers were some of the most exposed workers because they worked on slippery, oil-drenched wooden platforms and handled long, sharp knives and powerful steam winches to remove different parts of the whale. On floating factories, flensers were even more exposed since they either balanced on top of the whale carcass alongside the ship, or worked in a small wooden boat alongside the whale.

Ancillary stations were placed across Finneset peninsula to maintain the flow of production and everyday life in the whaling station, as well as to maintain hierarchical boundaries. These buildings enhanced the whaling companies' physical control and claim to the peninsula since they occupied the whole peninsula and its harbours. Although the primary motive behind the design and spatial layout of the whaling station was to generate economic profit, it also aimed to create social control, hierarchical division, and boundaries for power relations, which was important for securing control of the entire peninsula, its freshwater supplies, and harbours. In his article *A Ship Ashore*, Basberg argues that the organisation and structure of a whaling station resembles that of a ship with all its hierarchical divisions and highly specialised working categories.⁴⁵⁸ While this is true, one could also argue that they were not dissimilar from

⁴⁵⁸ Basberg, B.L. *A ship ashore? Organisation and living conditions at South Georgia whaling stations, 1904–1960*. 2002. In: *International Journal of Maritime History*. Vol: XIX, No 1.

any other remote and isolated company town at the turn of the 20th century, which displayed similar divisions and functions.⁴⁵⁹

Strategies for social control

The whaling station at Finneset was designed for maximum efficiency. The company organised the production line efficiently and the settlement was also designed to promote control over the work force and achieve social control. This was by no means unique at the turn of the 20th century, most industries used the same strategy. However, the Arctic and Antarctic posed particular challenges that were less common elsewhere. To begin with, Spitsbergen was far away from population centres, which made it difficult for whaling companies to replace supplement workers they deemed undesirable, such as unionists. They had to stick with the employees they had recruited, and control them. Moreover, the legal status of the archipelago as a no man's land meant that state support (i.e., police or army) was not available to break up strikes. And strikes were a particular concern. Whaling took place over a short summer season. During this time, companies had to produce an economic surplus to maintain the support of its shareholders. A strike during this short season could have potentially devastating effects on the company's ability to make a profit.

Modern whaling in the Arctic needed people, machines, organisations, and settlements to be adapted to these environmental and legal circumstances to function effectively. The legal status of Spitsbergen and Bear Island as terra nullius was both advantageous and challenging for the companies. From an economic point of view, the status was favourable since no national state could interfere and impose restrictions, taxes, or regulations on their activities. On the other hand, the lack of state authorities and laws meant that the companies had few tools to deal with strikes or territorial disputes. Although it remains uncertain when the strategies to achieve better social control were

⁴⁵⁹ Avango. D. *Sveagruvan: Svensk gruvhantering mellan industri, diplomati och geovetenskap*. 2005, Ahnlund. M and Brunnström. L *The company town- Architecture and society in the early industrial age*. 1992, Brunnström. L. *Kiruna- ett samhällsbygge I sekelskiftets Sverige*. 1981, Evjen. B. *Bergverksamfunn I Arktis*. 2004. Pp: 113-177. In: Norsk PolarHistorie. Vol: 3. Editors: Jølle.H.D and Drivenes. E.A.

first established, they were already in place during the 1880s.⁴⁶⁰ It is interesting that Johnsen (1959) and others have analysed these strategies as a means to create motivation.

These strategies “*laid the foundation for the team-work structure, which in many ways served as a model for the development of the modern whaling industry*”.⁴⁶¹ Nielsen (1921) argued that the part-based salary system was healthy and sensible as it made “*the soil fruitless for Bolshevism*”; everyone worked hard and energetically because they were part owners of the enterprise.⁴⁶² According to Isachsen (1929), “*there is no more brotherhood in whaling than in gambling*”.⁴⁶³ Whatever one’s opinion may be about these social strategies, they were adopted by the whaling companies to create an economic incentive for the workers and to secure the company’s control over its workforce, territorial claims, and resources. The companies’ strategies to achieve social control included a part-based salary system, architectural design features, leisure activities, technological choices, and more. The social segregation and hierarchical division between the workers and the local management was an integrated part of this. When A/S Spitsbergen moved their whaling station to Spitsbergen, the management adapted their strategies to the no man’s land status using the environment and the landscape. This included spatial division of the workers and the management at Finneset whaling station to enhance the local management’s control and to increase the station’s output by preventing strikes or unrest that may compromise the flow of production and output.

The workers were divided into shore- and boat workers. These two groups had little interaction with each other. While shore workers worked and slept at the station, boat workers (crew) stayed onboard the ships more or less during the entire season. The two groups had distinct accommodation, work titles, and part-based salary systems. This system was designed to differentiate skilled workers from unskilled workers and shore workers from boat workers/crews in a way which created a mutual dependence between the groups. While the sShip crews received a fixed salary and an additional

⁴⁶⁰ Johnsen.A.O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol 1. P: 455. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁴⁶¹ Johnsen.A.O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol 1. P: 442. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁴⁶² Nielsen. A.K. *En Hvalfangerfærd gjennom tropene til Sydishavet*. 1921. P: 95.

⁴⁶³ Isachsen. G. *Modern Norwegian Whaling in the Antarctic*. In: Geographical Review. Vol: 19, No 3. July 1929.

bonus based on the whale species and number of whales they delivered to the whaling station. The shore worker's salary was based on the number of barrels of whale oil, tonnes of baleen, and bags of guano the station produced. This system encouraged the ship crews to catch larger whales (like blue whales and fin whales), which have more blubber than smaller whales (like minke whales). The shore workers were dependent on the ship crews delivering enough whales for processing into whale oil and by-products. And if the shore workers were unable to keep up with the ship crew, the local manager could halt further hunting until processing had caught up, balancing the two out. Therefore, all workers remained dependent on one another and disturbance in any part of the production line affected everyone's salary.

The management of A/S Spitsbergen divided the shore workers' accommodation away from the local manager to maintain hierarchy and emphasize who was in charge. In addition, the architectural design features, such as double-walled houses insulated with tar paper and iron stoves showed that the company management regarded the workers' comfort as important.

At contemporary workers accommodations in the mining settlements at Advent City and Longyear City, the companies distinguished between single-walled houses intended for the summer workers and insulated houses for the winter workers. The whaling company apparently wanted to avoid complaints about the accommodation from the workers, which could cause bad feelings. It is worth mentioning that these mining settlements experienced a number of strikes, which commonly started with complaints from summer workers about poor accommodation, salary, and food.⁴⁶⁴ Finneset whaling station may have had a shower with hot water from the steam production. Unfortunately, fieldwork provided no data to support this. It is probable that whaling station employees had access to some form of hygiene installation.

⁴⁶⁴ Arlov. T.B. *Svalbards Historie*. 2003. P: 259f.

Work at the whaling station was intense and consisted of long hours with few opportunities for leisure activities.⁴⁶⁵ At Finneset whaling station, the workers were able to go hiking, fishing, and hunting during their spare time. Some workers got involved in mineral prospecting. At least two territorial claims were made by the station's employees during the first decade of the 20th century.⁴⁶⁶ Although A/S Nimrod's claim at Linneelva in 1909 was primarily motivated by getting supplementary food for the station's employees, it was also used as a leisure hut for the workers. In addition to this, it was an actant in the arctic landscape that signalled ownership and ongoing activities to others. It might be coincidental that the hut was established after a series of devastating strikes in the mining settlements of Advent Bay.⁴⁶⁷

It is questionable whether claiming the fishing area at Linneelva was a social strategy to provide another leisure activity or an attempt to secure supplementary food. When A/S Spitsbergen established their whaling station, they based it on the former buildings, installations, and machines of A/S Finmarken's former whaling station in northern Norway.⁴⁶⁸ This made use of simple and well-tested machines that fulfilled several purposes. Firstly, they limited the company's initial costs in setting up the whaling station. Secondly, the technologies and machines they transferred were proven functional in environmental circumstances not dissimilar to those encountered in the Arctic, and would probably work there also. Thirdly, the workers knew how these machines worked. By transferring well-known machines, the company and its shareholders secured themselves an immediate and constant flow of resources with limited financial risk. Furthermore, they cut costs and avoided the need to invest time training workers how to operate new machines and technologies. The advantages of this were demonstrated from 1909 to 1911 when A/S Nimrod frequently failed to adapt their new vertical guano driers to local conditions. This problem was eventually solved by transferring an old well-tested horizontal drier from northern Norway – a similar set up to what it had been in northern Norway during the last few decades. By sticking with

⁴⁶⁵ Johnsen.A.O. *Finmarksfangstens Historie 1864–1905*. 1959. Vol 1. P: 441. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁴⁶⁶ For further reading, see Ytteborg. A. Forthcoming.

⁴⁶⁷ For further reading, please see the dissertation of Dr Frigga Kruse.

⁴⁶⁸ Isachsens. G. *Green Harbour*. 1913. P: 41. In: L'expédition Norvégienne au Spitsberg 1909–1910 sous le direction du capitaine Gunnar Isachsen.

known methods, the station was re-erected easily and fully operational just six weeks after arriving at Green Harbour in the summer of 1905.

Accessing the whaling station at the start of the season in spring was often problematic. From 1905 to 1915, whaling expeditions had frequent problems with sea ice and fog, which prevented them from accessing the station and harbours and also prevented them from hunting. To adapt to these challenging conditions, A/S Spitsbergen and A/S Nimrod altered the organisation of production and the machines they used. On several occasions, these companies started their hunting season anchored alongside the ice edge, where they flensed and partly processed the whales they caught. To be able to do this, the companies re-built their tug boats and equipped them with cookers that could be removed later. The companies that operated with a floating factory had an advantage during this period since they could operate as normal. However, by adapting to the recurring ice problems, A/S Spitsbergen and A/S Nimrod could start hunting and processing immediately, therefore extended their production time and output.

Who were the people that sought employment in the whaling industry, and what were their motives to do so? What is, in fact, a whaler? Tønnesen (1969) has remarked that the word *whaler* is often loosely used to describe those people employed by whaling companies. There are many glorified images of whalers. These are often dominated by a gunner or harpooner standing at the stern of a boat by his harpoon cannon, or with a firm grip on his hand-held harpoon. Most people's understanding of a whaler has probably been influenced by Herman Melville's famous book, *Moby Dick*. Although the hunt and kill were an essential part of whaling, the industry included diverse working positions, such as flensers, cookers, electricians, blacksmiths, carpenters, cooks, chemists, and many more. Each worker fulfilled tasks that enabled the whaling station to process whale carcasses smoothly and maintain the support of its management and shareholders. It is difficult to determine who these people were and where they came from because no data were collected on the birthplace and homestead of the workers until after 1930. There are also no preserved company records in national archives. Throughout the whaling period in northern Norway, the majority of workers were

recruited at home in Vestfold County, and some additional workers were recruited on site.⁴⁶⁹

Even though the modern whaling industry had become an international business by the turn of the 20th century, it is not uncommon to come across statements suggesting that it was still a national affair. In existing whaling literature, one often comes across statements suggesting that it was an exclusive Norwegian activity: “*Norwegian whaling in the Southern Ocean is certainly the toughest and most hazardous industry in the world. The Norwegians are alone in it, and will stay so since no other people in the world would endure the harshness and dog life down there*”.⁴⁷⁰ It is correct that whaling was dominated by Norwegian workers and knowledge in the 19th and 20th centuries, but it also included workers, investors, machines, and markets from Great Britain, Argentina, Chile, South Africa, and many others. The whaling industry offered the men and boys who joined it the possibility to earn an income and have a career at a time when unemployment and societal transitions dominated at home. Others were undoubtedly driven by a sense of curiosity and a will to see parts of the world they otherwise could not have done. Economic factors were, nonetheless, primarily what attracted people to the well-paid whaling industry. Working for the whaling industry offered the opportunity to earn 5 to 10 times more than a farm worker, whose average annual salary was Kr300,00 in 1905.^{471,472}

Other possible motives for joining whaling expeditions to the polar regions was the opportunity for adventure and being part of a greater polar narrative that revolved around masculine ideals formed by national heroes such as Nansen, Nordenskiöld, and others. These scientists and explorers were often depicted as men who selflessly challenged nature’s elements, seeking to explore the unknown, and who were driven by

⁴⁶⁹ Johnsen.A.O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol 1. P: 411. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁴⁷⁰ Tønnesen. J.O.H. *Verdensfangsten 1883–1924, Del 2: 1914–1924. Den Pelagiske Fangst 1924–1937*. Vol: 3. P: 86. In: Den Moderne Hvalfangst Historie- Opprinnelse of Utvikling. 1969.

⁴⁷¹ Central Bureau of Statistics of Norway. *Historical Statistics* 1978. P: 544.

⁴⁷² Johnsen.A.O. *Finnmarksfangstens Historie 1864–1905*. 1959. Vol 1. P: 447. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

national pride and the quest for knowledge.⁴⁷³ The polar expeditions were also means to a career and funding. At the turn of the 20th century, the heroic image and rhetoric became incorporated into industrial projects. It was not only science that defined the greatness of a nation, but also industrial and technical progress as shown by the popular fairs and trades. During the last decades of the 19th century, Svend Foyn was a national hero together with his contemporary explorers.⁴⁷⁴ Associations with the Viking heritage were an integrated part of the Nordic legacy and heritage and, according to Wråkberg, became a vital part of Nordic identity in the late 19th century.⁴⁷⁵ The modern whaling industry fulfilled a role that polar expeditions did not: presence and economic profit. These were two important factors, which played an important role in industrialisation – and nationalisation in northern Scandinavia. Avango and Houltz (2008) have demonstrated that adventure was an important motivational factor for seeking employment in the arctic coal mines,⁴⁷⁶ and it is reasonable to assume that similar motives existed within the modern whaling industry.

AVERAGE WHALING SALARIES FOR SPITSBERGEN, SHETLAND ISLANDS, AND THE FAROE ISLANDS.					
SHORE:	Fixed	Kr/Per barrel			
Foreman	1,200.00/season	1.20–2.00			
Blubber cooker	50–70.00/month	0.05–0.10			
Meat cooker	50–60.00/month	0.05–0.07			
Flenser	50–70.00/month	0.05–0.10			
Blacksmith	60–70.00/month	0.05–0.10			
General worker	35.00/month	0.02–0.03			
BOAT CREW:	Fixed	Kr/Blue whale	Kr/Fin whale	Kr/Sei whale	Kr/Humpback
Gunner/captain	100.00/month	80.00	30–50.00	20–30.00	20–30.00
1st engineer	130–150.00/month	6.00–7.00	6.00–7.00	6.00–7.00	6.00–7.00
2nd engineer	50–65.00/month	4.00–5.00	4.00–5.00	4.00–5.00	4.00–5.00
Ships mates	45–50.00/month	4.00	4.00	4.00	4.00

Fig 59. Average seasonal salaries at a whaling station in 1903, including an estimate for the 1905 season of A/S Spitsbergen.⁴⁷⁷

⁴⁷³ For further reading about the physical, intellectual and ideological significance of polar expeditions, please see: Wråkberg. U. *Vetenskapens Vikingatåg- Perspektiv på svensk polarforskning 1860–1930*. 1999.

⁴⁷⁴ See chapter two for further discussion.

⁴⁷⁵ Wråkberg. U. *Vetenskapens Vikingatåg- Perspektiv på svensk polarforskning 1860–1930*. 1999. P: 95.

⁴⁷⁶ Avango. D and Houltz. A. *Arbetets hjältar? Skildringar av liv och arbete i Arktis under tidigt 1900-tal*. 2008. Pp: 37–53. In: *Arbete pågår- i tankens mönster och kroppens miljöer*. Editors: Houltz.A, Lundström.B, Magnusson.L, Morell.M, Nisser.M and Silven.E.

⁴⁷⁷ Norsk Hvalfangsttidende. No: 7. July 31, 1916. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

The gunners onboard the whale catchers were crucial for the success or failure of the whaling company and its employees since the production of whale oil was directly linked to how many and which whales were caught. A bad or unfortunate gunner would immediately compromise the catches, production, profit, and part-based salaries of the workers. A competent gunner would have the opposite effect. It was, therefore, vital to secure and hire good gunners. This dependence was financially beneficial for the gunners, since competition between whaling companies for their skills drove up their salaries.

Approximate salaries within whaling (1903) (Whale catcher crew)					
Title	Fixed/month	Per blue whale	Per fin whale	Per sei/humpback whale	Income 1905 (A/S Spitsbergen)
<i>Gunner</i>	Kr100.00	Kr80.00	Kr30–50.00	Kr20–30.00	Kr4,350.00
<i>1st Engineer</i>	Kr130–150.00	Kr6–7.00	Kr6–7.00	Kr6–7.00	Kr876.00
<i>2nd Engineer</i>	Kr50–65.00	Kr4–5.00	Kr4–5.00	Kr4–5.00	Kr474.00
<i>Ships mates</i>	Kr45–50.00	Kr4.00	Kr4.00	Kr4.00	Kr459.00

Fig 60. Average seasonal salaries of whale catcher crew members in 1903, including an approximate estimate for the 1905 season of A/S Spitsbergen.

Salaries varied not only depending on the work position but also between companies and hunting grounds. In fact, the whaling industry did not have a collective salary agreement until 1920.⁴⁷⁸ Tønnesen argues that the whalers failed to organise themselves earlier mainly because they were an un-homogenous group, which made it difficult for them to fit into a workers union at the time.⁴⁷⁹ Un-homogenous or not, the formation of workers unions was something that company managements tried to prevent using social strategies and hierarchical segregation. The managements also used work contracts to prevent their employees from joining any unions: “*I will not organise meetings to discuss and, by force, try to achieve things that violate the contract and the company’s interest, in that case I have forfeited my right to earned salary and part*”.⁴⁸⁰ Unfortunately, I have not been unable to uncover any contracts between the whaling companies that operated in Spitsbergen and their workers. However, it is reasonable to

⁴⁷⁸ Tønnesen. J.O.H. *Verdensfangsten 1883–1924, Del 2: 1914–1924. Den Pelagiske Fangst 1924–1937*. Vol: 3. P: 92. In: *Den Moderne Hvalfangst Historie- Opprinnelse of Utvikling*. 1969.

⁴⁷⁹ Tønnesen. J.O.H. *Verdensfangsten 1883–1924, Del 2: 1914–1924. Den Pelagiske Fangst 1924–1937*. Vol: 3. P: 93. In: *Den Moderne Hvalfangst Historie- Opprinnelse of Utvikling*. 1969.

⁴⁸⁰ Tønnesen. J.O.H. *Verdensfangsten 1883–1924, Del 2: 1914–1924. Den Pelagiske Fangst 1924–1937*. Vol: 3. P:108. In: *Den Moderne Hvalfangst Historie- Opprinnelse of Utvikling*. 1969.

assume that contracts between hunting grounds were not too dissimilar since many of the whaling companies, such as Christian Nielsen & Co., operated whaling stations and pelagic enterprises across the world and most likely tried to keep their contracts uniform so they could easily transfer employees and boats from one hunting ground to another. The motive behind these contracts was partly the fear that workers would place demands for better living conditions and higher salaries, and go on strike to get their demands. A strike in these remote areas, where the management had no possibility of replacing the workers with others, combined with the short season and high investments would have devastating effects on the future of the industrial project. The part-based salary system was invented to create a mutual dependence between company employees by linking their performances to everyone's salaries. Despite this, whaling companies adopted additional strategies to enhance their control over production and output.

One of the advantages of operating in the Arctic was the midnight sun, which allowed processing to continue long into the night since there were no fixed working hours. Consequently, the midnight sun had a direct effect on the organisation of production, together with environmental variables such as sea ice and fog. The sea ice caused problems, but could also be useful since it represented a source of freshwater as well as a temporary flensing platform.

The decision to establish the whaling station at Finneset was based on many variables, such as space, access to freshwater, good harbour conditions, shelter from swell and strong winds, relative vicinity to the primary hunting grounds, and reduced competition with other whaling companies. The documentation and mapping of the peninsula in 2007 made it clear how the company had designed and spatially planned their station to maximise output and profit, and to claim and control the territory. The survey also revealed how the company manoeuvred and used design features and leisure activities to achieve hierarchical division and social control. Although the companies that operated the whaling station experienced problems (primarily lack of freshwater and sea ice) Green Harbour was regarded by the whaling industry as one of the better areas on the west coast of Spitsbergen for basing an industrial project.

Conclusions

The establishment of the modern whaling industry in Spitsbergen was motivated by the desire to make economic profit from whale oil and by-products on the international and domestic markets. Following the failure to catch enough whales to make a profit, all but two whaling companies abandoned Spitsbergen in favour of other hunting areas. Those that remained appear to have been motivated by beliefs that whale populations were large enough to generate a profitable result, and that their chances for doing so increased with less competition over the resources. Environmental problems such as fog and sea ice were constantly challenging for the companies and affected their operations negatively. It is, however, unlikely that those environmental problems were the only reason for declining catches throughout 1905–1912. A more reasonable explanation is that whale populations could not sustain this sudden wave of exploitation, and that the whale population was not as large as the industry assumed. Although our knowledge of the migratory patterns of whales is scarce, it is not unlikely that the whales hunted at Spitsbergen belonged to the same populations as those exploited in northern Norway, which were already severely reduced after decades of exploitation. The transfer of whaling from northern Norway was partly promoted by the Norwegian authorities' decision to introduce a ban. Although this ban effectively prevented the companies from hunting, killing, or processing whales in northern Norway for ten years, diffusion to the Arctic was part of the globalisation of whaling, which already started in the 1880s. By the turn of the 20th century, profitable hunting grounds included the Arctic and the Antarctic.

The success of the hydrogenation process enabled cheap whale oil to be sold to the profitable margarine producing industry. Although hydrogenation was not properly industrialised until a few years later, it created an economic incentive for investors to invest in potentially profitable industrial projects in the polar regions. During the first decade of the 20th century, the markets for whale oil became more stable and increasingly lucrative. The diffusion from northern Norway to the Arctic (a no man's land) was a geographical shift in environmental circumstances that forced whaling companies and their management to adapt and incorporate new strategies to maintain their projects. These included social strategies, such as the part-based salary system, hierarchic segregation, choices of technologies, machines, and settlement designs

features, as well as territorial strategies aimed at securing the company's rights to resources and territories. A large percentage of the whaling companies that established themselves in Spitsbergen chose to use an early type of floating factory to base their operations in Spitsbergen. This decision might reflect their uncertainty towards operating under harsh arctic conditions. It may also reflect their belief in the whale population size in these hunting grounds. The choice may also have been motivated by fears of authorial interferences similar to those in northern Norway, despite the no man's land status of the archipelago. Although this type of production platform provided manoeuvrability to pursue whale populations everywhere, it also had some drawbacks. For example, it could not process whales in a true pelagic sense on the open sea. They were dependent on calm weather to be able to flense whales alongside the hull and to process them into whale oil onboard the ship. Consequently, it was vital to secure control over a deep and sheltered harbour. They also had less storing space compared with a whaling station, which meant they needed land in the vicinity to store barrels and coal. This was also a safety precaution since whale oil is flammable. Therefore, processing was very weather dependent. Processing whales into whale oil was a reverse salient, or bottleneck, for this type of production unit.

A/S Spitsbergen's choice to move a whaling station might, from this perspective, be seen as a rational choice. However, establishing a whaling station meant less flexibility compared with competitors who could move with the whale populations. The whale catcher risked having to spend a long time and precious fuel towing whales back to the station for processing. This could, in turn, affect the quality of the whale oil, which was reduced as the whale decomposed. The company solved this problem by purchasing a tug boat, which transported food, coal, harpoons, and more to the whale catchers, and towed the whales back to the station for processing. This gave the gunners more hunting time as no time was wasted transporting the whales. Motivated by beliefs in the hydrogenation process and the untouched arctic hunting grounds, Iversen and Raaum were able to attract the investment of Severin Dahl and his company in their industrial project. With the support of Firma Severin Dahl, the company's global network was secured and they were able to purchase the properties and claims of the former A/S Finmarken, allowing Lars Iversen and Knut Raaum to diffuse and establish the local

network at Spitsbergen. The experience and local knowledge of Raaum and Iversen were instrumental in securing the establishment at Finneset whaling station. They located and claimed a suitable site for the station, and negotiated the sale of A/S Finmarken properties. These two actors were the central network builders, while Firma Severin Dahl, together with other geo-politically motivated actors, represented the global network. From the perspective of Firma Severin Dahl, the actor network surrounding the whaling project in the Arctic could swing both ways. The careful approach used by Firma Severin Dahl, Raaum, and Iversen was, perhaps, characterised by a reluctance to invest, but was also way to secure immediate resources and output. It was advantageous to use functional and well-tested machines that workers could operate rather than investing in new costly machines. With this approach, A/S Spitsbergen could process resources and generate economic profit without too much interference. By maintaining this restrictive investment policy, the global network was able to exert pressure on the network builders to secure a local network that supplied a constant flow of resources and economic profit. This was necessary to sustained the support of Firma Severin Dahl and its shareholders. If the company failed to deliver, Firma Severin Dahl and its shareholders may choose to minimise risks and withdraw their investment. Consequently, Iversen and Raaum had to ensure that all related artefacts and technical installations in the local network functioned together as *one* unit, as well as taking care of the interrelated social, economic, and political factors required to maintain the support of the global network.

Law and Callon have argued that “*the stability and form of artefacts should be seen as a function of the interaction of heterogeneous elements as these are shaped and assimilated into a network*”.⁴⁸¹ From this follows that the conditions under which the network was built and stabilised are an intertwined part of the network that indirectly exercises pressure on the outcome of the success or failure of the actor network. Thus, the system builder must create a network of heterogeneous and sustainable elements, which they must dissociate from hostile forces and adapt them to their project. These elements cannot, however, be separated from one another since they interact and dictate the

⁴⁸¹ Law, J. *Technology and Heterogeneous Engineering: The Case of Portuguese Expansion*. 1989. P: 113. In: *The Social Construction of Technological Systems- New Directions in the Sociology and History of Technology*. Editors: Bijker, W.E, Hughes, T.P, and Pinch, T.

outcome of an industrial project. Therefore, reducing the factors to only economic ones (as is often the case in historical research on the modern whaling industry) have often resulted in unsatisfactory analysis of the driving forces behind the establishment and sustainment of whaling in the polar regions. In the polar regions, the capability of the network builders to implement tactics and strategies to link related elements directly affected the stability and sustainability of the network, and thereby the project's success. This is not an easy task since elements such as sea ice, fog, scarce resources, and freshwater supplies are difficult to control. When dealing with industrial projects, particularly in the Arctic and Antarctic, it is vital to adopt the same analytical approach or symmetrical principle towards the physical environment and all other elements that the network builder identifies as having an effect on the project. The environment was not only an opponent for the whaling companies to adapt to, but also a productional platform and a source of freshwater, transforming it to an allied rather than an opponent.

A/S Spitsbergen and the actor network of Iversen and Raaum eventually collapsed in 1908 because of different factors. Firstly, Raaum and Iversen failed to control all the interrelated elements. Consequently, they and the local network were unable to generate enough resources to maintain the support of the global network. Secondly, they were unable to convince the global network that whale populations were not depleted, and that they could generate enough resources even if the prices for whale oil dropped. Thirdly, they failed, much like other whaling companies, to attract experienced gunners, which were vital for securing a higher output from the local network.

Christian Nielsen and Marcussen were better at bringing the elements together (resources, sea freshwater and knowledge) than many other whaling companies. They managed to maintain a higher degree of stability and control over the elements in their actor network. The tighter structure of their network with the owner Christian Nielsen (the global network) closely and directly connected with the local network (the manager and the workers, the whaling station, all technological artefacts, knowledge, etc.) in Spitsbergen. Christian Nielsen (the owner) and Marcussen (the manager of A/S Nimrod) were both builders and a part of the global network. They initiated the project in 1904 when they outmanoeuvred Laurvigs Intressentskab for Hvalfangst and reorganised the

internal structure of the company to make decision-making quicker and more effective. Financial, market distribution, and political communications in the hands of Christian Nielsen, and operationalisation of the local network under Marcussen's control enabled them to construct an actor network that functioned smoothly since both actors were experienced and knew how to run a sustainable whaling operation. Their ability to adapt organisational structures, machines, and strategies and to make the local network functional was vital for securing a constant flow of resources, which allowed them to maintain the support of the company's shareholders. With the purchase of Finneset whaling station, which was a part of an expansionistic phase of the company Christian Nielsen & Co., the focus and the internal structure of the actor network was changed in that new elements were introduced in the organisation. Although all sister companies (A/S Nimrod, A/S Ocean, A/S Norge, A/S Spermacet aso) of Christian Nielsen & Co. each had their own defined roles and local networks, they shared a common global network with which they had to interact and supply resources to. For the local network of A/S Nimrod, restructuring of the global network resulted in a new internal structure. Tønder Bull was hired as the managing director of A/S Nimrod to work alongside the operational manager, Marcussen. Together, these two managed to maintain control, adapt the network, and supply the necessary resources.

One might, however, question the motives and driving forces behind the continuous support of a whaling enterprise that was barely able to generate an economic profit. One explanation is perhaps that geo-political ambitions contributed to sustaining it. In chapter 1, I argued that not only economic, but also technical, social, and political factors dictated the evolution and sustainment of the modern whaling industry in the Arctic and Antarctic. The reasons for the failure of A/S Nimrod were much the same as for A/S Spitsbergen – they failed to maintain control over all the elements and successfully exploit resources from what appears to have been an ever more depleted reservoir. Consequently, they failed to generate the necessary output, which was vital to keeping the shareholders' support. Secondly, they had difficulties adapting new machines to the local network and linking these to the existing production line. Finally, they failed to attract competent gunners even though Christian Nielsen & Co. had access to personnel, equipment, and networks across the globe that could potentially have been

redistributed within the multitude of local networks that belonged to Christian Nielsen & Co.

Although beliefs in the capacity and regeneration of the north Atlantic whale population were strong enough to encourage new attempts to establish industrial projects, no one managed to develop a profitable and sustainable project. The primary reason was that the hunting grounds were depleted and that environmental conditions were difficult. Furthermore, none of these projects were able to attract and maintain the support of investors because the hunting grounds could not compete with the more profitable hunting grounds in the south.

5. Walrus Bay whaling station, Bear Island

Introduction

Bear Island is a small island in the Barents Sea, approximately halfway between Spitsbergen and Norway. The island is located where cold water from the Arctic basin meets the warmer waters of the North Atlantic Current and the Gulf Stream. As a result, the island is often covered in fog. Unlike Spitsbergen and other parts of the Svalbard archipelago, Bear Island lacks glaciers. The northern part of the island is relatively flat, while the southern part is more mountainous.

During winter and spring, the island is often surrounded by sea ice, which drifts in with the East Spitsbergen Current. The coast is dominated by steep cliff and skerries that make access to the island difficult. At the beginning of the 20th century, the island was used as a base for whaling, with a whaling station in Walrus Bay. Today, the island is often used as a shelter by fishing vessels that operate in the area.

The whaling company

The company that established and operated the whaling station at Walrus Bay in 1905–1908 was the only whaling company based on the island. Other companies that moved their activities from northern Norway to the Arctic operated from bases in Spitsbergen further north.

M.A Ingebrigsten's whaling company

The whaling station at Walrus Bay on Bear Island was established by Morten Andreas Ingebrigtsen in 1905. The whaling company apparently had no formal company name besides the name of its owner. This perhaps illustrates the structure of the company, which was owned, controlled, and managed by M.A. Ingebrigtsen.

In 1904, Ingebrigtsen had claimed parts of Bear Island to establish a whaling station.⁴⁸² His claim was strategic and was a direct result of the whaling ban that was introduced in

⁴⁸² «Logbook of D/S Skytten 1904» Nasjonalbiblioteket in Oslo, Norway. MS Fol 3905.

northern Norway. His plan also reflected the developing interest in harbours and anchorages in the High Arctic, where whaling operations were increasing.



Fig 61. Morten Andreas Ingebrigtsen. The photo has been published with the kind approval of the Hay-Ingebrigtsen family.

Morten Andreas Ingebrigtsen was born in 1848 in Malangen, northern Norway.⁴⁸³ From 1866 until 1891, he hunted beluga whales in Spitsbergen, which, according to Ytreberg (1962), made him one of the wealthiest people in Tromsø.⁴⁸⁴ In 1891, the beluga population became severely depleted after decades of exploitation. According to Ingebrigtsen, only a small population of 400–500 whales remained in the waters of Spitsbergen.⁴⁸⁵ Ingebrigtsen chose, therefore, to withdraw from the beluga industry and to sell his boat, Hvidfisken, to Ingvald Svendsen.⁴⁸⁶

During these years, he gained important knowledge of operating in the Arctic, local currents, and distribution and migration patterns of marine mammals like whales. In addition, he knew of good and sheltered harbours and anchorages in Spitsbergen and Bear Island. This knowledge was to be important for his later activities in the modern whaling industry.⁴⁸⁷ In 1892, Ingebrigtsen bought a steam-powered boat for Kr26,000, which he named Skytten and converted into a whale catching boat.⁴⁸⁸ By this time, the modern whaling industry had become well established and developed in northern

⁴⁸³ Norsk Hvalfangsttidende. No 10, October 1932. P: 217. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁴⁸⁴ Ytreberg. N.A. *Tromsø Bys Historie*. Vol: 2. 1962. P: 217.

⁴⁸⁵ Norsk Hvalfangsttidende. No 6, July 1918. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁴⁸⁶ Ytreberg. N.A. *Tromsø Bys Historie*. Vol: 2. 1962. P: 207.

⁴⁸⁷ Norsk Hvalfangsttidende. No 10, October 1932. P: 217. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁴⁸⁸ Ytreberg. N.A. *Tromsø Bys Historie*. Vol: 1. 1962. P: 747.

Norway. Ingebrigtsen managed and financed his whaling company by himself. Whether this was his choice or because there were no investors in Tromsø remains unclear. It is noteworthy that Ingebrigtsen started his whaling career by immediately returning to Spitsbergen.⁴⁸⁹ He had seen for himself the potential of the arctic hunting grounds; he had noticed the abundance of large whales in Spitsbergen during his earlier career there, and decided to exploit them. Why he decided not to pursue this initiative in Spitsbergen remains unclear. During Ingebrigtsen's first two years in the industry, he operated from his home port at Tromsø and processed the whales he caught at the Anglo-Norwegian Fishing Company's whaling station at Karlsø. This company was established in 1887 by the Norwegian Johannes H. Giæver and the Englishmen James Wilson and a Mr. Shephard.⁴⁹⁰

In 1894, Ingebrigtsen established his own whaling station at Rolfsø in north-western Norway where he lived throughout the hunting season with his family.⁴⁹¹ This whaling station was designed to utilise and process blubber into whale oil and baleen. Ingebrigtsen brought whales he had caught with D/S Skytten into his station for processing. The whales were attached to a buoy that was located in the water immediately outside the whaling station. From this buoy, the shore workers pulled the whales onto the beach for processing. This whaling station did not have a wooden flensing platform; instead the whales were winched up onto the beach at high tide. Once low tide set in, the flensers stripped the blubber into long strips. These strips were pulled to the blubber cookery building and fed into a rotating blubber cutter, after which the blubber pieces were transported to the upper floor via an elevator for cooking. After cooking, the whale oil was transferred into a large clearing tank then tapped into wooden barrels for storage.⁴⁹² When high tide set in again, the whale carcass was rotated and the process repeated itself. Once the blubber had been stripped off, the carcass was pulled off the beach at high tide and towed to Tønsberg Kraftfoderfabrik where it was processed into guano.⁴⁹³ Ingebrigtsen operated his whaling station with

⁴⁸⁹ "Journal holdt ombord i Hvalfangerdampaaden Skytten tilhørende Skibsreder Morten. A. Ingebrigtsen. Ført av Capt. Lars Hansen, 1892". National Library of Norway. Oslo. MS Fol 3905.

⁴⁹⁰ Sørensen. G, Hoff. I.A, Hoff. J.O, Halvorsen.L, and Salicath.C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 104. See also: Ytreberg. N.A. *Tromsø Bys Historie*. Vol: 2. 1962. P: 211.

⁴⁹¹ Sørensen. J. *Nordland og Finnmarken- reiseindtryk*. 1903. P: 37f.

⁴⁹³ *Kvalstasjonen på Rolvsøya*. 1985. Pp: 35-39. In: *Ultima Thule. Årgång 1*.

⁴⁹³ *Kvalstasjonen på Rolvsøya*. 1985. Pp: 35-39. In: *Ultima Thule. Årgång 1*.

the whale catcher D/S Skytten until the national ban on whaling was introduced in 1904. That Ingebrigtsen lived throughout the year in Tromsø meant that he was more flexible than his competitors and could initiate the hunting season as soon as possible. Ingebrigsten's logbook revealed that he, unlike many other contemporary whaling companies, hired workers from northern Norway rather than from Sandefjord and Tønsberg. This gave him an advantage over other companies because he could start the season at short notice as soon as whales were recruited. His workers were most likely fishermen who were familiar with the hunting areas. As a result, Ingebrigsten's whaling station was often operational from early February when he pursued humpback whales that migrated northward along the continental shelf.⁴⁹⁴

Ingebrigtsen's results were better than those of other whaling companies, although he only operated with one whale catcher.⁴⁹⁵ The choice to establish his whaling station at Rolfsø was strategic and the location contributed greatly to his success as it gave him an operational range that extended far into the north Atlantic. He frequently operated and kept his whale catcher stationed in the waters around Bear Island, and was also the first to use a steam-powered tug boat to link his whale catcher with the processing unit in northern Norway.⁴⁹⁶ From 1898 onwards, Ingebrigtsen frequently used the tug boats Haalogaland and Viken to tow whales back to his whaling station.⁴⁹⁷ Ingebrigsten often used the harbours at Bear Island to shelter during storms. He attached his catches to buoys in Southern Harbour/Sørhamna while waiting for the tug boat to arrive. The river at Russehamna was used to re-supply freshwater.⁴⁹⁸

During these years, Ingebrigtsen gained important knowledge of the island's natural environment, which became important later on when he moved his operations there. Throughout the period 1896 to 1904, Ingebrigtsen caught and processed 637 whales into 18,773 barrels of whale oil.⁴⁹⁹

⁴⁹⁴ Norsk Hvalfangsttidende. No 6, July 1918. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁴⁹⁵ Risting. S. *Av Hvalfangstens Historie*. 1922. P: 611f.

⁴⁹⁶ Norsk Hvalfangsttidende. No 6, July 1918. Also in issue No 10, October 1932. P: 217. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁴⁹⁷ "Dagbog D/S Skytten. 1899-1910". National Library of Norway. Oslo. MS Fol 3905. Also in: Risting. S. "Av Hvalfangstens Historie". 1922. P: 624f.

⁴⁹⁸ "Dagbog D/S Skytten. 1904-1908". National Library of Norway. Oslo. MS Fol 3905.

⁴⁹⁹ Risting. S. *Av Hvalfangstens Historie*. 1922. P: 611f.



Fig 62. M.A. Ingebrigtsen's whaling station at Rølfssøya in northern Norway.⁵⁰⁰

The 1904 whaling ban in Norway meant a shift of production units rather than a shift to new hunting grounds for Ingebrigtsen and his workers, since he already operated in this area and knew of anchorages, freshwater supplies, coal deposits, and potential sites for industrial facilities. In June 1904, Ingebrigtsen sailed to Bear Island and claimed a part of the island.⁵⁰¹ The claim at Bear Island secured control over the harbours on the east side, as well as coal outcrops on the island, which was important since it would secure a sustainable fuel supply for the project. Having made the claim at Bear Island, Ingebrigtsen continued to Spitsbergen and Bellsound, where he also planned to claim land. However, all the suitable harbours in Bellsound were already claimed by competing whaling companies. Ingebrigtsen investigated a potential area at Aksel Island, which was deemed unsuitable for an industrial project. Ingebrigtsen spent some time catching whales along the coast of Spitsbergen with D/S Skytten and his tug boat Viken until they returned to Bear Island.⁵⁰²

In the spring of 1905, Ingebrigtsen and his workers moved the whaling station from northern Norway to Walrus Bay. The whaling station here was designed to produce whale oil and baleen. This meant that a large part of the available oil was stored on land and the whale bones were discarded and dumped at sea. The lack of competition meant

⁵⁰⁰ *Kvalstasjonen på Rølfssøya*. 1985. P: 36. In: *Ultima Thule*. Årgång 1.

⁵⁰¹ "Logbook of D/S Skytten 1904" Nasjonalbiblioteket in Oslo, Norway. MS Fol 3905.

⁵⁰² "Dagbog D/S Skytten. 1904". National Library of Norway. Oslo. MS Fol 3905. See also the «Diary of Alex lange 1904-1907/08» Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

that the company made relatively good catches compared with competitors further north. The company successively increased its catches and production during 1905–1907, which encouraged continued operations. Much like in Spitsbergen, the company dealt with severe sea ice conditions from time to time. Difficult environmental conditions combined with material losses and poor catches meant the project was cancelled after the 1908 season.

In 1909, M.A. Ingebrigtsen returned to Bear Island to extend his territorial claim. Together with a group of investors that consisted of banker K.G. Hvatum from Larvik, attorney S. Mayer from Tønsberg, and Captain J.O. Hoff, Ingebrigtsen secured control over lead and coal deposits, which they intended to exploit together.⁵⁰³ This territorial claim extended from Ingebrigtsen's initial claim at Walrus Bay along the entire east coast of the island.⁵⁰⁴ It is probable that Ingebrigtsen had discovered other mineral deposits during his years operating the whaling station. In 1915, this claim was extended to include the whole territory east of a line from Sørhamna in the south to Nordhamna in the north.⁵⁰⁵ Later that same year, these claims were sold for Kr100,000 to I/S Bjørnøen Kulkompani.⁵⁰⁶ One year later, this company established the coal mine Tunheim, which remained operational until 1925 when it was closed.

The whaling industry and early Norwegian sovereignty ambitions

The activities of the modern whaling industry were described by the Norwegian foreign minister Wilhelm Christophersen in 1908 as the predominant economic activities in Spitsbergen and Bear Island.⁵⁰⁷ The industry and its activities became the focal point of the Norwegian government from 1906 onwards.⁵⁰⁸ In January 1907, the former foreign minister Jørgen Løvland invited Norwegians with economic interest in the archipelago for a meeting. The purpose of the meeting was to investigate and map the extent of

⁵⁰³ «Letter to the Norwegian Foreign Ministry from M.A. Ingebrigtsen, K.G. Hvatum, S. Meyer and J.O. Hoff. June 8, 1908». The Norwegian National Archives. Archive of the Norwegian Foreign Ministry. Vol: 5174.

⁵⁰⁴ Hoel. A. *Svalbards Historie 1596-1965*. 1967. Vol 3. P: 1360.

⁵⁰⁵ «Letter to the Norwegian Foreign Ministry from M.A. Ingebrigtsen. May 12, 1915». The Norwegian National Archives. Archive of the Norwegian Foreign Ministry. Vol: 5174. See also Hoel. A. *Svalbards Historie 1596-1965*. 1967. Vol 3. P: 1360.

⁵⁰⁶ «Letter to the Norwegian Foreign Ministry from M.A. Ingebrigtsen. December 30, 1915». The Norwegian National Archives. Archive of the Norwegian Foreign Ministry. Vol: 5174. See also Hoel. A. *Svalbards Historie 1596-1965*. 1967. Vol 3. P: 1371.

⁵⁰⁷ Berg. R. *Norge på egen hånd 1905-1920*. 1995. In: Norsk utenrikspolitikk historie. Vol 2. P: 163.

⁵⁰⁸ Arlov. T.B. *Svalbards historie 1596-1996*. 1996. P: 283.

Norwegian presence and their respective economic activities for the upcoming international negotiations on the legal status of the archipelago. These negotiations were called the Kristiania conferences. They were held in 1910, 1912, and 1914, and included Norway, Sweden, and Russia. The purpose of these meetings was to establish an international legal regime on the archipelago.⁵⁰⁹ No progress was made, however, since all nations involved saw the proposals of others as attempts to claim sovereignty. As I mentioned previously, this increased interest in the Arctic was a direct result of 19th century colonialism.

The Foreign Ministry under Løvland created a legal regime, arguing that strikes and conflicts in the mining settlements and tourism business called for such a system. Their initiative has been explained by researchers as a rhetorical tool to promote Norwegian control and management with the ultimate goal of gaining sovereignty. Before the 1907 meeting took place, the Foreign Ministry sent out questionnaires to the managers of whaling companies. These contained questions on the number of whale catchers they used, the size of the crews, the number of employees, catch and production data, as well as economic profits. The questions were, however, not only about economic aspects but also asked whether the whaling companies experienced problems due to the legal status of the archipelago.⁵¹⁰ Representatives from the different industrial projects in Spitsbergen and Bear Island participated in the meeting. M. A. Ingebrigtsen had been selected to represent the whaling industry. Several experts on the Arctic and politics participated in the meeting, such as Fridtjof Nansen, parliament representative Hans Horst, researcher and explorer Gunnar Isachsen, the head of the department for political issues Johan Wollbaek, and geology professor W.C Brøgger.⁵¹¹ The results of the questionnaires were discussed, but none of the respondents had reported problems with the legal status of the archipelago.⁵¹² Ingebrigtsen argued that there was no future

⁵⁰⁹ Berg. R. *Norge på egen hånd 1905-1920*. Bd 2 in *Norsk utenrikspolitikks historie*. 1995. P: 164ff. See also: Singh. E.C. *The Spitsbergen (Svalbard) Question: United States Foreign Policy 1907-1935*. 1980. P: 32f, and Mathisen. T. *Svalbard in International Politics 1871-1925. The solution to a unique international problem*. Skrifter No 101. Norsk Polarinstitut. 1954.

⁵¹⁰ *Norsk Fiskeritidende*. 1909. P: 17-18. Kommendør Chr. Christensens Hvalfangstmuseum, Sandefjord, Norway.

⁵¹¹ "*Beretning*" *Norsk Svalbard og Ishavsundersøkelser (NSIU) 1928*. Vol: 0085. E-Korrespondanse og saksdokumenter. Tromsø Statsarkiv, Norway. This has also been described and analysed by Berg. R. *Norge på egen hånd 1905-1920*. 1995. In: *Norsk utenrikspolitikks historie*. Vol 2. P: 158.

⁵¹² *Norsk Fiskeritidende*. 1909. P: 17-18. Kommendør Chr. Christensens Hvalfangstmuseum, Sandefjord, Norway.

for the modern whaling industry, the sealing industry, or the coal mining industry. This conclusion was supported by Nansen.⁵¹³ As the whaling industry's representative, Ingebrigtsen had good reasons for saying this. The 1904 national whaling ban was the result of the last political involvement in the industry's activities. It is reasonable to assume that the whaling industry regarded the no man's land status as favourable since it meant that no one could impose restrictions or regulations on their activities that could potentially influence the economic output and profit of the industry. The main conclusion of the meeting was that the modern whaling industry alone was not a sound enough basis for a Norwegian claim to the archipelago.⁵¹⁴

In spite of this, it was decided that regulations and governance were needed to control the strikes that had occurred at some of the coal mines. The Foreign Ministry were assigned the task of designing international rules to regulate use and property rights on the archipelago.⁵¹⁵ The Foreign Ministry later questioned this when they realised that both Ingebrigtsen and Nansen had additional agendas (see Berg 1995), and that the Norwegian economic interest on the archipelago was larger than what had been reported at the meeting. This is illustrated by a statement from foreign minister Christophersen in 1908. However, the sources do not state whether these economic interests were strong enough to make a claim for the archipelago. In 1909, Norway offered to establish a legal regime and take care of managing and enforcing the regime, if Sweden and Russia would consent. Their main argument was that it was primarily Norwegian citizens that were exploiting the archipelago's natural resources, and that people from northern Norway regularly travelled in the Arctic. Another argument was that Norway was geographically the closest of the three interested countries.

The role of the whaling industry subsided gradually as catches and profits reduced. After the 1908 season, only two whaling companies remained operational in Spitsbergen and this activity hardly supported the goal of the Foreign Ministry. From 1908, the coal

⁵¹³ "Beretning" Norsk Svalbard og Ishavsundersøkelser (NSIU) 1928. Vol: 0085. E-Korrespondanse og saksdokumenter. Tromsø Statsarkiv, Norway. This has also been described and analysed by Berg. R. *Norge på egen hånd 1905-1920*. 1995. In: Norsk utenrikspolitikk historie. Vol 2. P: 158.

⁵¹⁴ Arlov. T.B. *Svalbards historie 1596-1996*. 1996. P: 347.

⁵¹⁵ "Beretning" Norsk Svalbard og Ishavsundersøkelser (NSIU) 1928. Vol: 0085. E-Korrespondanse og saksdokumenter. Tromsø Statsarkiv, Norway. This has also been described and analysed by Berg. R. *Norge på egen hånd 1905-1920*. 1995. In: Norsk utenrikspolitikk historie. Vol 2. P: 158.

mining industry was increasingly used as a geo-political tool by the Foreign Ministry. From 1910, the new foreign minister, Irgens implemented a covert strategy that involved scientific expeditions to coordinate Norwegian industrial activities on the archipelago and to secure large territorial claims.⁵¹⁶



Fig 63. View over Walrus Bay, Bear Island. Photo: Gustav Rossnes. LASHIPA 5/2008.

Activities and results 1905–1908

The spring of 1905 was the first season, since the whaling industry was established in northern Norway in the 1860s, that there was no hunting there. Some whaling companies had chosen to simply abandon their former whaling stations and leave the industry after receiving compensation from the Norwegian government. Others adapted to the situation, for example by equipping their ships with cookers so whales could be processed at sea. Or by disassembling their stations and rebuilding them in new locations. M.A. Ingebrigtsen was one of these. A possible motive for doing so was that, unlike other whaling companies, he had been operating for decades prior to the ban and

⁵¹⁶ "Beretning" Norsk Svalbard og Ishavsundersøkelser (NSIU) 1928. Vol: 0085. E-Korrespondanse og saksdokumenter. Tromsø Statsarkiv, Norway.

his whaling station (established in 1894) was relatively new.⁵¹⁷ Moving relatively simple and well-tested technologies to Walrus Bay was an economic decision that reduced costs and guaranteed functionality. Fieldwork also revealed that, with the exception of Sørhamna, Bear Island was the only suitable location for a whaling station. Using a floating factory here would have been difficult since most anchorages were exposed to winds and drift ice and skerries were common along the entire coastline.

In April 1905, Ingebrigtsen hired 40 men in Tromsø to disassemble the whaling station's buildings and installations at Rolfsø.⁵¹⁸ The whale catcher D/S Skytten and the cargo ship Maiston sailed back and forth between the station at Rolfsø and Walrus Bay at Bear Island with materials, workers, and equipment. Despite a few disturbances caused by sea ice, the company managed to assemble the whaling station at Walrus Bay and make it operational by mid-July.⁵¹⁹ Establishing a whaling station on Bear Island was, according to Tønnesen (1967), a foolhardy experiment for a dignified man of Ingebrigtsen's stature.⁵²⁰ Tønnesen's scepticism was not unfounded. The location of the whaling station on the east coast of the island meant that it was exposed to both drift ice and swells coming from the Barents Sea. Accessing the harbour by boat was difficult due to the large number of skerries in the area and the lack of sea charts. The exposed position of Walrus Bay also caused problems during the construction of the whaling station. Repeatedly, boats transporting building materials and installations were forced to take shelter in the nearby harbour at Sørhamna, meaning most materials had to be transported to Walrus Bay by land.⁵²¹ Even though the distance was short, the workers had to haul the materials over the steep cliffs that circumvene Sørhamna and make it the best protected harbour on Bear Island.

⁵¹⁷ Sørensen. J. *Nordland og Finnmarken- reiseindtryk*. 1903. P: 37f.

⁵¹⁸ "Dagbog D/S Skytten. 1905". National Library of Norway. Oslo. MS Fol 3905.

⁵¹⁹ "Dagbog D/S Skytten. 1905". National Library of Norway. Oslo. MS Fol 3905.

⁵²⁰ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2. P: 95. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁵²¹ *Dagbog D/S Skytten. 1905-1908*". National Library of Norway. Oslo. MS Fol 3905.



Fig 64. The harbour at Sørhamna on the south-eastern part of Bear Island. This harbour was an important part of Ingebrigtsen's local network at Bear Island. Here, Ingebrigtsen deployed a second buoy for whales. The harbour was also used as shelter and for Ingebrigtsen's boats. Photo: U. I. Gustafsson. LASHIPA 5/2008.

Ingebrigtsen's logbooks provide insight into how they dealt with dangerous sailing conditions at Bear Island during the spring when the coastline and its harbours quickly became filled with drift ice. *"Wednesday, May 31, 1905. At dinnertime the large swell made the ice become more packed. We worked on board both ships so that they would not get severely damaged, but an accident seemed imminent. All men assembled their clothes on deck. The strong ice movement and large swell continued the whole day, and the men worked full time with the fenders and planks to reduce the pressing of the ice. The chances for salvaging the ships, and Skytten especially, seem small. God be with us."*⁵²²

The first building to be re-erected at Walrus Bay was the forge. Soon after followed the accommodation building overlooking what was to become the production area. By mid-May, the workers had completed these buildings and started working on erecting the blubber cookery.⁵²³ Ingebrigtsen used four boats for his hunting activities – the whale catcher D/S Skytten, the two steam-powered tug boats Bjølfen and Dovre, and the cargo ship Maiston. The task of D/S Skytten and Bjølfen was to hunt for whales and to tow carcasses to the whaling station for processing. Dovre was used to mine coal at Kolbugten and Nordhamna for the ships and whaling station. Maiston was primarily used as a cargo vessel during the initial phase of the season, carrying installations and buildings from the former whaling station. It was also used to transport workers and empty barrels to the new site at Walrus Bay.

⁵²² "Dagbog D/S Skytten. 1905". National Library of Norway. Oslo. MS Fol 3905.

⁵²³ "Dagbog D/S Skytten. 1905". National Library of Norway. Oslo. MS Fol 3905.

Throughout the remainder of the season, Maiston laid anchored at Sydhamna when she was loaded with the barrels of whale oil that had been produced.⁵²⁴ During a large part of the season, Bjølften towed most of the whales to the whaling station.⁵²⁵

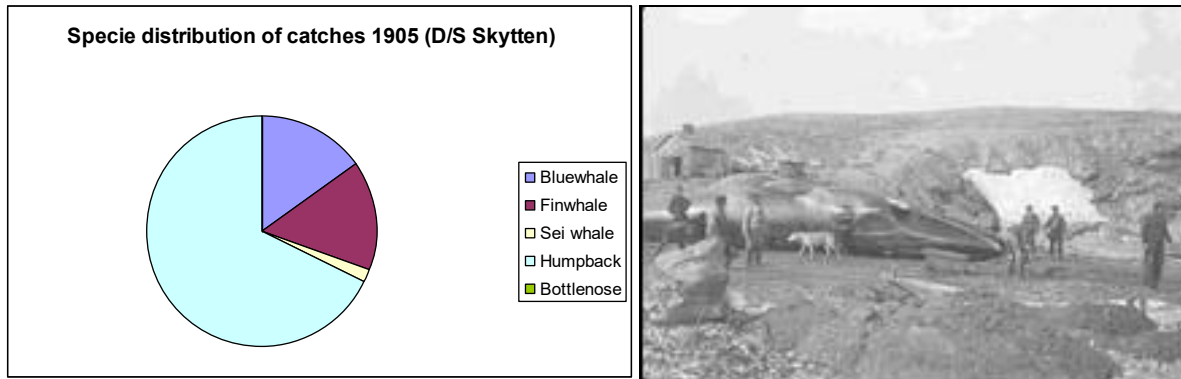


Fig 65 and 66. Species distribution of whale catches for the 1905 season. Note the exceptionally large percentage of humpback whales.⁵²⁶ Right: Workers processing whales at Walrus Bay whaling station. The building in the background is the forge. The photo has been published with the kind approval of *Forschungsinstitut und Naturmuseum Senckenberg, Germany*.

Apart from the start of the season, operations went well and were not disturbed by drift ice. The company managed to catch 46 whales. As shown in Fig 65, most of the catch consisted of humpback whales, fin whales, and blue whales. These 46 whales were, according to Ingebrigsten's logbook, processed into 1,301 barrels of whale oil, of which 1,255 barrels and 43 kg of baleen were transported to Kristiania (present day Oslo) on board Dovre to be sold there.⁵²⁷ *Norsk Fiskeritidende* (1906) and Risting (1922) stated that the total production for 1905 was 1,200 barrels.⁵²⁸ Assuming that the whale oil was sold at the market in Kristiania for approximately Kr48.00 per barrel, and that production costs amounted to Kr46.00 per barrel,⁵²⁹ Ingebrigtsen made a small profit of Kr2,561. Considering that the company had transferred materials and assembled the whaling station at Walrus Bay for almost half the hunting season, Ingebrigtsen must have regarded this as a good result. The organisation of production with only one designated whale catcher may partly explain the result. The initial plan was that Bjølften

⁵²⁴ "Dagbog D/S Skytten. 1906". National Library of Norway. Oslo. MS Fol 3905.

⁵²⁵ "Dagbog D/S Skytten. 1905". National Library of Norway. Oslo. MS Fol 3905.

⁵²⁶ "Dagbog D/S Skytten. 1905". National Library of Norway. Oslo. MS Fol 3905.

⁵²⁷ "Dagbog D/S Skytten. 1905". National Library of Norway. Oslo. MS Fol 3905.

⁵²⁸ *Norsk Fiskeritidende*. 1906. P: 114. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway, and Risting. *S. Av Hvalfangstens Historie*. 1922. P: 262.

⁵²⁹ Data have been extracted from Tønnesen. J.O.H. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol 2. P: 587. In: *Den moderne Hvalfangst Historie- Opprinnelse og utvikling*.

would also hunt, but to avoid D/S Skytten wasting time towing whales to the station, Bjølfen was used as a tug boat. This indicates that most of the hunting was done at a distance from Bear Island. This adaptive measure reduced the company's catching capacity. Therefore, only a small part of the available workforce and boats brought in raw materials. To increase the company's hunting capacity for the coming season, Ingebrigtsen bought a second whale catcher, D/S Bjørn. In addition to this, he chartered the cargo ship Stabil, which was used to transport workers, barrels, provisions, and produce between the whaling station and the market in Norway.⁵³⁰

In mid-May, Ingebrigtsen hired the season's workers in Tromsø and they departed for Bear Island three days later.⁵³¹ The arrival at Bear Island was anything but simple. D/S Bjørn started taking in water having struck ice outside of Bear Island. The ice belt prevented the expedition from accessing any harbour along the east coast for several days. Eventually, they managed to navigate through the ice and reach the harbour at Russehamna, north of Walrus Bay. Here, the workers, supplies, and some equipment were placed on land while the boats returned to Norway to fix the damages they had sustained in the ice. Meanwhile, the workers were ordered to carry supplies and equipment to the whaling station a few kilometres south. At Russehamna, there were a few houses from earlier expeditions that the workers used as accommodation. This delayed the start of the hunting season until June 8.⁵³²

Throughout the season, the cargo ship Stabil and its crew mined coal along the coast of the island. Coal was essential for all operations.⁵³³ Environmental conditions had generally made the 1906 hunting season difficult for the whaling companies that operated in this part of the Arctic. Those that operated in Spitsbergen made relatively poor catches compared with Ingebrigtsen, who was less affected by drift ice. The whalers themselves argued that the poor catches were caused by lack of food for the whales around Spitsbergen.⁵³⁴ On several occasions, storms and fog prevented the

⁵³⁰ "Dagbog D/S Skytten. 1906". National Library of Norway. Oslo. MS Fol 3905.

⁵³¹ "Dagbog D/S Skytten. 1906". National Library of Norway. Oslo. MS Fol 3905.

⁵³² "Dagbog D/S Skytten. 1906". National Library of Norway. Oslo. MS Fol 3905.

⁵³³ "Dagbog D/S Skytten. 1906". National Library of Norway. Oslo. MS Fol 3905.

⁵³⁴ Norsk Fiskeritidende. 1907: P: 72, and Norsk Fiskeritidende. 1909, P: 18. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway, See also: Risting. *S. Av Hvalfangstens Historie*. 1922. P: 256f.

companies in Spitsbergen from hunting and processing. At Bear Island, the situation was better. The swell did not often push drift ice into the islands eastern coastline. Because of the structural changes Ingebrigtsen made to his organisation, the company increased its catches to 60 whales, and its production to 2,015 barrels of whale oil and 121 kg of baleen.⁵³⁵ Almost 48% of the whales caught were blue whales, which gave a higher yield of oil than other species.

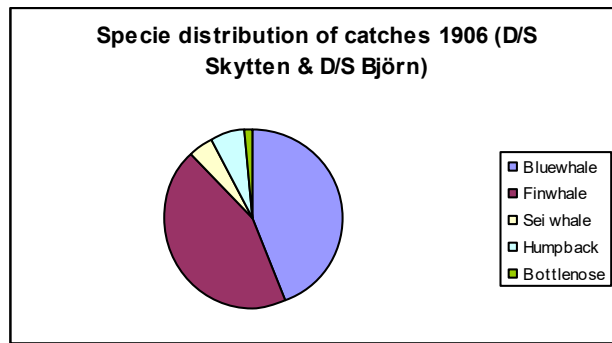


Fig 67 and 68. M.A. Ingebrigtsen posing by the harpoon cannon on board D/S Skytten. The photo has been published with the kind approval of the Hay-Ingebrigtsen family.⁵³⁶ Right: Distribution of whale catches for the 1906 season, which was dominated by blue and fin whales.

Assuming that Ingebrigtsen sold his whale oil for the same prices as whaling companies in the Antarctic did (Kr61.00 per barrel) and met the same production costs per barrel (Kr49.00),⁵³⁷ he made a profit of Kr24.180 (excluding baleen). However, the estimated profit was likely higher since the company produced its own coal, and therefore had lower operational costs than the companies that Tønnesen based his calculations on.

In April 1907, whalers in Tromsø began preparing for the coming season by testing the boats and compasses. Eight crew members were also hired for D/S Skytten.⁵³⁸ In addition, Ingebrigtsen chartered the cargo ship Stabil and the schooner Herold, which was going to be used as a semi-pelagic platform during the season.⁵³⁹ Herold was large enough to haul a whale on deck, and blubber could be flensed without being disturbed

⁵³⁵ "Dagbog D/S Skytten. 1906". National Library of Norway. Oslo. MS Fol 3905.

⁵³⁶ The photo is a part of a private collection belonging to the Hay-Ingebrigtsen family.

⁵³⁷ Data have been extracted from Tønnesen. J.O.H. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol 2. P: 587. In: Den moderne Hvalfangst Historie- Opprinnelse og utvikling. These figures are based on data available from contemporary whaling companies operating in the Antarctic, and it is likely that the production costs for those operating in the Arctic were substantially less due to the relative proximity to the market.

⁵³⁸ "Dagbog D/S Skytten. 1907". National Library of Norway. Oslo. MS Fol 3905.

⁵³⁹ Norsk Hvalfangsttidende. No 6, July 1918. Also in: No 7, July 1928. P: 139 and No 10, October 1932. P: 218. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

by waves. This approach proved to be successful. Once the whales had been flensed, the remaining carcass was dumped overboard.⁵⁴⁰ Using this additional platform, the company flensed 16 whales in the open sea.⁵⁴¹ This was an adaptation to problems caused by drift ice in earlier seasons.

Changing the organisation of his production in this way allowed Ingebrigtsen to operate with two whale catchers and two processing units simultaneously. This made the local network more flexible and increased the project's overall catching and processing capacity. It is interesting to note that later in the season the company attempted to haul northern bottlenose whales on board the whale catcher Bjørn for flensing. The ship Stabil was used to transport the workers, barrels, and provisions to Bear Island. Once the hunting started, the ship was used to tow whales from the two whale catchers to the whaling station for processing.

The fleet reached Bear Island on May 20 after two days sailing. A large belt of sea ice prevented the company from getting closer than 10 km to the whaling station at Walrus Bay. This massive belt was a part of an ice belt that extended from south of Bear Island to the northernmost point of Spitsbergen, and which effectively prevented all whaling companies from reaching their harbours and stations.⁵⁴² Ingebrigtsen chose to move his fleet further east where the ice was less dense. Here, the company started its hunting season by catching a few fin whales and a few bottlenose whales.⁵⁴³ After three weeks of hunting in this area and the open sea, the company were able to access the harbours at Walrus Bay and Sørhamna.

⁵⁴⁰ "Dagbog D/S Skytten. 1907". National Library of Norway. Oslo. MS Fol 3905.

⁵⁴¹ Norsk Fiskeritidende. 1908. P: 23. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁵⁴² Norsk Fiskeritidende. 1908. P:22. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁵⁴³ "Dagbog D/S Skytten. 1907". National Library of Norway. Oslo. MS Fol 3905.

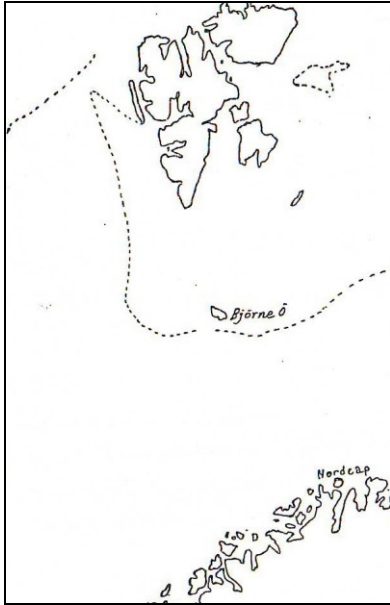


Fig 69 and 70. The extension of sea ice during summer 1907 in the European High Arctic.⁵⁴⁴ Right: Workers processing whales at Walrus Bay whaling station. The photo has been published with the kind approval of *Forschungsinstitut und Naturmuseum Senckenberg, Germany*.

Hunting was often disrupted by fog, which made it difficult for the whale catchers to navigate the sea and spot whales. In an attempt to escape the fog and catch whales, Ingebrigtsen travelled northeast to Hopen Island where he caught a few whales. Despite difficult ice and fog conditions, Ingebrigtsen’s company managed to catch and process 81 whales into 1,700 barrels of whale oil. This result was substantially higher than in Spitsbergen, where the average catch was 42 whales per company.⁵⁴⁵ The prices for whale oil had, as previously mentioned, dropped compared with the previous year to Kr54.00 per barrel.⁵⁴⁶ Based on the prices reported by other whaling companies, Ingebrigtsen probably made a profit of Kr18.598 that year. For the third year in a row, Ingebrigtsen and his employees made a profit despite difficult operational conditions that prevented them from operating at full capacity.

⁵⁴⁴ Norsk Fiskeritidende. 1908. P: 22. Kommendør Chr. Christensen’s Hvalfangstmuseum. Sandefjord. Norway.

⁵⁴⁵ Risting. S. *Av Hvalfangstens Historie*. 1922. P: 262.

⁵⁴⁶ Data have been extracted from Tønnesen. J.O.H. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol 2. P: 587. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*. The data supplied by Tønnesen did not only apply for whaling companies which operated in the southern seas, which suggest that the production costs would have been reduced to Kr43.06 per barrel compared to Kr46.00 for 1906. It is reasonable to assume that Ingebrigtsen, who was self supportive of fuels and operated close to the main market, had somewhat lower production costs.

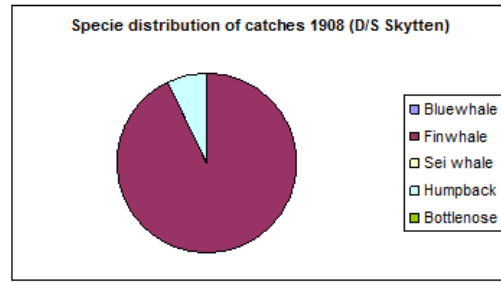
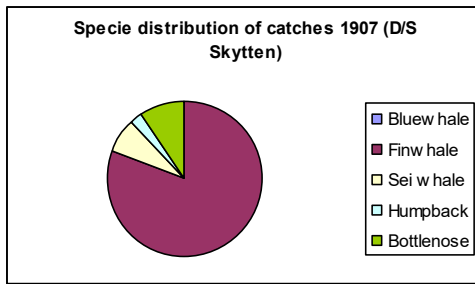


Fig 71 and 72. Distribution of whale catches for the 1907 and 1908 season (D/S Skytten). Note the lack of blue whales and the predominant catch of fin whales in the 1907 season.⁵⁴⁷ In 1908, fin whales were predominant and blue whales were completely absent, compared with 1906 when almost 50% of the total catch were blue whales.⁵⁴⁸

Similar to the previous year, Ingebrigtsen hired workers for the 1908 season in Tromsø. In mid-May, the expedition steamed northward to Bear Island, towing Herold behind them. The journey northward across the Barents Sea was rough and filled with ice. On the morning of May 20, Herold hit the ice so hard that it began leaking and the crew was unable to repair it. After only a few hours, the boat sank without casualties. The loss of Herold meant that a large part of the season's supplies were lost.⁵⁴⁹ The expedition returned to Norway to report the loss. Even though the ship was insured, the loss was a severe setback for Ingebrigtsen's whaling operations, since he had lost one of his production platforms. By early June, the expedition headed northwards again. After one day at sea, the company hit a large belt of drift ice that forced them to change their course and head east where the ice conditions were less difficult.

The company spent three weeks sailing along the edge of the drift ice in a north-eastwards direction, until they were able to sail through safely to the whaling station at Walrus Bay. The difficult ice conditions combined with the loss of Herold meant the company could not start the hunting season until late June.⁵⁵⁰ Although there was little drift ice throughout the remainder of the season, there was plenty of fog, which disrupted hunting. Ingebrigtsen decided to end the hunting season on August 14 having caught only 44 whales. The expedition returned to Norway a few days later with 830

⁵⁴⁷ "Dagbog D/S Skytten. 1907". National Library of Norway. Oslo. MS Fol 3905.

⁵⁴⁸ "Dagbog D/S Skytten. 1908". National Library of Norway. Oslo. MS Fol 3905.

⁵⁴⁹ "Dagbog D/S Skytten. 1908". National Library of Norway. Oslo. MS Fol 3905.

⁵⁵⁰ "Dagbog D/S Skytten. 1908". National Library of Norway. Oslo. MS Fol 3905.

barrels of whale oil and some baleen.⁵⁵¹ In spite of these setbacks, the company made a small profit of Kr6.640.⁵⁵² The figures showing the whales caught during the 1905 and 1908 seasons illustrate how whale distribution differed from season to season.

Humpback whales dominated the 1905 catches but were completely absent in 1908. The number of blue whales caught also changed over time. This is probably explained by overexploitation combined with seasonal variations, changing migration patterns, and changes in the whales' food supply.

Closure of Walrus Bay whaling station

Ingebrigtsen appeared to abandon the industrial project at Bear Island and the Arctic during the 1908 season. By mid-August 1908, all operations at the station were halted, and the shore workers were ordered to disassemble parts of the technical installations at the whaling station. Together with the remaining 1,400 empty barrels they had hoped to fill with whale oil during the season, all equipment was loaded for transportation south.⁵⁵³ The industrial project at Bear Island had constantly improved its catches and output by reorganising its production to adapt to local circumstances. The difficult conditions the company experienced during the 1907 and 1908 seasons reduced their catches and production, but they also suffered material losses. With whaling companies in the south making huge profits, it was perhaps difficult to motivate continued investments in hunting grounds that were difficult and hazardous to operate in, and which were becoming depleted.

⁵⁵¹ "Dagbog D/S Skytten. 1908". National Library of Norway. Oslo. MS Fol 3905. See also: Risting, S. "Av Hvalfangstens Historie". 1922. P: 263.

⁵⁵² Data have been extracted from Tønnesen, J.O.H. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol 2. P: 587. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

⁵⁵³ "Dagbog D/S Skytten. 1908". National Library of Norway. Oslo. MS Fol 3905.

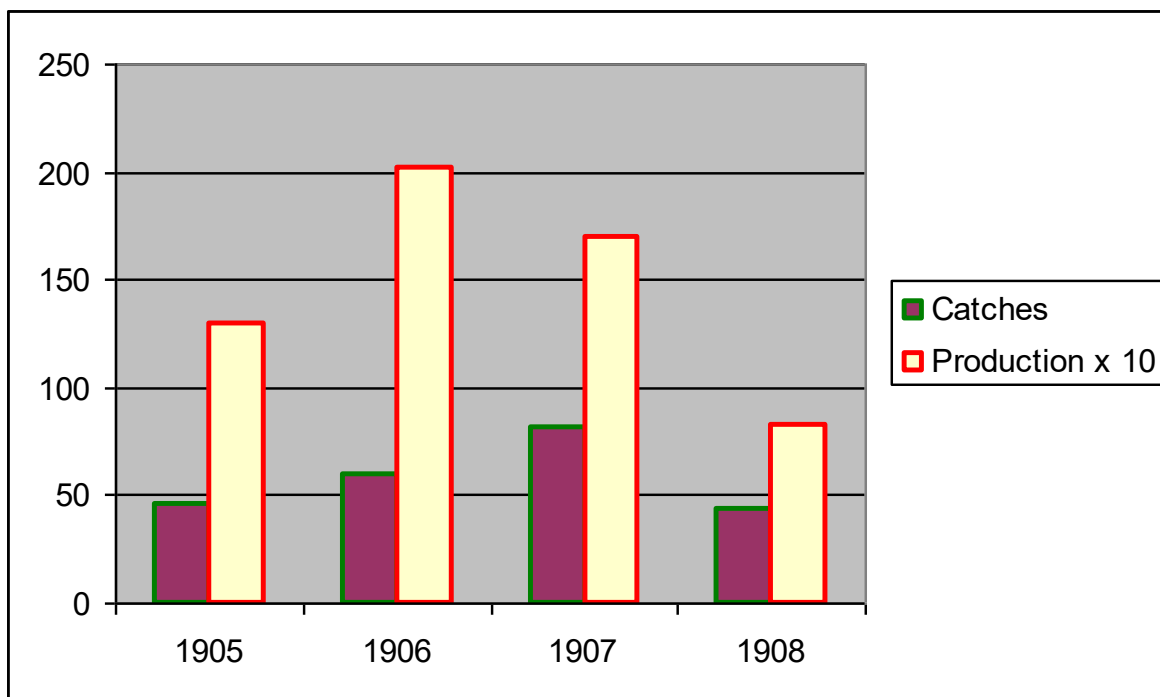


Fig 73. Catches and production at Bear Island from 1905 to 1908. Production peaked in 1906 with a production of 2,015 barrels of whale oil, but catches reached a maximum the year after. The greater yield in 1906 was due to the larger percentage of blue and fin whales.⁵⁵⁴

In the autumn of 1908, soon after his return from Bear Island, M.A. Ingebrigtsen went into partnership with the Norwegian entrepreneur Peder Bogen from Sandefjord. Together, they established a new whaling company named A/S Viking.⁵⁵⁵ The purpose of this company was to explore and exploit new hunting grounds. To materialise this vision, they purchased a 2,900 ton steam ship in England and converted it into a factory ship (named Ambra). This was the first ship in England to be converted and equipped as a pelagic production unit.⁵⁵⁶ The idea was to build on the concept Ingebrigtsen developed with Herold at Bear Island; hauling the whole whale onboard to be flensed on deck. Unlike Herold, Ambra was equipped with cookers that allowed them to process the blubber onboard. Although Ambra had a larger platform than Herold, the new company

⁵⁵⁴ Based on data supplied in M.A. Ingebrigtsen's logbooks (1905-1908) and Risting. S. 1922.

⁵⁵⁵ Tønnesen. J.O.H. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol 2. P: 440. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling. Also in: Risting. S. *Av Hvalfangstens Historie*. 1922. P: 472.

⁵⁵⁶ Tønnesen. J.O.H. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol 2. P: 440. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

failed to process whales onboard.⁵⁵⁷ Instead, the whales they caught were flensed traditionally alongside the ship.



Fig 74, 75, and 76. Left: The floating factory ship, Ambra. Right (1): A whale shark being hauled onboard Ambra for processing. Right (2): Flensing on a floating dock at the stern and hauling blubber onboard for processing. The photos have been published with the kind approval of the Hay-Ingebrigtsen family.⁵⁵⁸

Ambra operated in conjunction with Ingebrigtsen's two whale catchers D/S Skytten and D/S Bjørn along the coast of Africa in the season of 1909, a season which ended with a profit of Kr64.374 ⁵⁵⁹ For 1910, the company's profit increased to Kr400.000 giving the company's shareholders a dividend of 100% after just two seasons. For Ingebrigtsen, whose contract gave him 5% of the profit in addition to Kr2.00 per barrel and stocks for Kr150.000, the project's success gave him an annual income of Kr22.427 for 1909, Kr26.600 for 1910, and Kr150.000 for 1911.⁵⁶⁰ That same year, Ingebrigtsen and Bogen expanded their collaboration and established a new company – A/S Capella – together with Olaf Støkken and his father A. Støkken . This company aimed to exploit the hunting grounds in Australia using the floating factory ship, Capella I.⁵⁶¹ Instead of operating in Australia as planned, the company ended up operating along the African coast during the first year. With a production of only 5,700 barrels of whale oil, the company made a loss of Kr190.500 ⁵⁶² Unfortunately, there is no data to explain why the company

⁵⁵⁷ Tønnesen. J.O.H. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol 2. P: 422. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁵⁵⁸ The photo is a part of a private collection belonging to the Hay-Ingebrigtsen family.

⁵⁵⁹ Tønnesen. J.O.H. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol 2. P: 441. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁵⁶⁰ Tønnesen. J.O.H. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol 2. P: 442. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling. See also: Risting. S. 1922.

⁵⁶¹ Tønnesen. J.O.H. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol 2. P: 423. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁵⁶² Risting. S. *Av Hvalfangstens Historie*. 1922. P: 494. See also: Tønnesen. J.O.H. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol 2. P: 423. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

management chose not to operate in Australia as originally planned. Whaling in Australia was relatively undeveloped until 1912, when Christen Nielsen & Co got a licence to establish a whaling station at a place they named Norwegian Bay. One reason why A/S Capella never materialised their plans to hunt in Australian waters could be because they failed to secure a licence for their project from the Australian authorities. As a result of these losses, the management of A/S Capella decided to transfer their operations to the coast of Mexico. Andreas Ingebrigtsen, the son of M.A. Ingebrigtsen, had reported an abundance of whales there. Under the leadership of the now 65-year-old M.A. Ingebrigtsen, the company caught and processed 565 whales into 14,670 barrels of whale oil. Despite the company's good catches, the project was financial failure, resulting in a loss of Kr284.444 ⁵⁶³ The reasons for this loss and the project's subsequent closure were long distances to and from the hunting grounds, high fuel costs, lack of freshwater, labour problems, and political instability in Mexico.⁵⁶⁴ It is not unlikely that Ingebrigtsen and his partners were interested in establishing themselves in the Antarctic hunting grounds, where the whaling industry was producing promising results. The numbers of concessions for these hunting grounds were, however, strictly regulated by the British authorities, partly as an attempt to limit the expansion of the industry in South Georgia and the South Shetland Islands.⁵⁶⁵

After this project failed, Ingebrigtsen withdrew from the modern whaling industry until 1920 when he, together with his son Andreas, rented Finneset whaling station in Spitsbergen from Store Norske Spitsbergen Kulkompani (SNSK). This project was motivated by a belief that the environmental conditions had improved and that whale stocks in the Arctic had recovered enough to withstand further industrial exploitation.⁵⁶⁶

⁵⁶³ Tønnesen. J.O.H. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol 2. P: 426. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁵⁶⁴ Risting. S. *Av Hvalfangstens Historie*. 1922. P: 584. See also: Tønnesen. J.O.H. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol 2. P: 425. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁵⁶⁵ Tønnesen. J.O.H. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol 2. P: 380. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁵⁶⁶ Please see chapter 3 for further reading.

Discussion

Ingebrigsten's whaling project at Bear Island differed in several ways from the other projects discussed in this thesis. While Ingebrigtsen financed the project himself, the others were financed through a share stock system. Unlike these other projects, Ingebrigsten had a central part in establishing, developing, and adapting the local network at Bear Island to arctic conditions, rather than having only a managerial role. Taking all the financial risk himself meant that Ingebrigsten's project did not have to generate a profit to convince potential shareholders or other investors to maintain their support for the project. But he needed to make enough profit to generate a surplus after all costs had been deducted. Similar to the Finneset project in Spitsbergen, Ingebrigtsen chose to transfer his former whaling station to Bear Island, including buildings and installations, rather than invest in new buildings, technological installations, or a floating factory unit. Therefore, both arctic projects used well-tested and functional technologies to minimise costs.

Throughout the project, the local network at Bear Island developed and adapted to local circumstances to maximise whale catches and the production of whale oil. This was achieved by incorporating new ships, which allowed Ingebrigtsen to alter the organisation of production. These adaptations increased catches, production, and profits. It was probably the combined success of these strategies that motivated Ingebrigtsen to sustain the project. Constant problems with drift ice, large swell, and fog did, however, frequently obstruct the industrial operations. In an attempt to adapt to these conditions, Ingebrigtsen purchased and converted the schooner Herold into a floating flensing platform, allowing the whale catchers to deliver their catch to Herold, rather than transporting it to the whaling station. Ingebrigtsen could use Herold to flense whales, but it is unlikely that blubber could be cooked onboard. Herold complemented the whaling station by increasing the production capacity of the company. Flensing in the open sea was challenging, which is why Ingebrigtsen experimented with hauling the whales onboard the ship. Even though they managed to do so, most flensing was probably done alongside the ship when the weather allowed. Drift ice was another constant challenge for whalers. Ice provided stability and shelter from the large waves at sea, but was also dangerous since it could crush the ships. The

sinking of Herold in 1908 was probably a result of being trapped in the drift ice while using it as a shelter.

Ingebrigsten's adaptive measures were exclusively aimed at improving whale catching and processing blubber, rather than on increasing the whaling station's utilisation capability. Throughout its operational years, the whaling station at Walrus Bay only processed blubber into whale oil and cleaned and dried baleen. The remainder of the whale was dumped at sea. This is a similar situation to the first years of operation in South Georgia. From an economic point of view, this was bad business since a large part of the available raw materials were wasted. Rather than investing in additional technologies, which would have increased utilisation and output at the whaling station, Ingebrigtsen chose to keep investments to a minimum and only use what had been transferred from his former whaling station. Both his whaling stations were, therefore, similar in design. There are no data that suggest Ingebrigtsen ever considered investing in new technologies at Walrus Bay to increase the level of utilisation and production there. The reluctance to do may indicate that Ingebrigtsen did not realise how much whale oil could be yielded from the whales' meat and bones, or that he calculated that costs for the new investments outweighed any potential profits that could be made from them. It is also possible that the location of the station, with difficult access and exposed position to swells and sea ice, played a role in this decision. There is no evidence to suggest that Ingebrigtsen reflected on the depletion of whale stocks after intensive exploitation. Instead, he argued that the poor catches were caused by un-natural ice and fog conditions, which prevented the whalers from finding and catching whales. Ingebrigsten's belief in the capacity and profitability of these whale stocks is further supported by his later attempt to exploit whales in the area in 1920/21. From this perspective, it is perhaps even more remarkable that Ingebrigtsen did not invest in increasing the station's utilisation capability.

The information presented here provides insight into Ingebrigsten's activities, and how and why the project adapted the way it did and what the result of these adaptations were for the company. But how was production organised at the whaling station in Walrus Bay? Below, I will present the outcome of archival research and fieldwork done at Walrus Bay during the LASHIPA 5 expedition to Bear Island in 2008.

Walrus Bay whaling station

The whaling station at Walrus Bay was designed and equipped to process blubber into whale oil, and to clean and dry baleen. In 2008, a LASHIPA team surveyed large parts of Bear Island. During this expedition, a number of sites related to the activities of the modern whaling industry were documented and mapped by high accuracy GPS units, drawings, descriptions, and photography.⁵⁶⁷ The primary purpose of this work was to determine how the whaling company organised its production, and how it manifested hierarchy and ownership over the territory. The findings also revealed how the company adapted their production to the local circumstances and how it used the landscape to create hierarchical boundaries and promote social control.

The area at Walrus Bay was subdivided into three areas (see Fig 77 below). Area 1 represents the whaling station, while areas 2 and 3 represent cultural remains from trapping and the Second World War. The collected data were later post processed and transferred into a database. This data has, together with written sources, provided new information about how and why the local network at Bear Island was designed and organised the way it was.

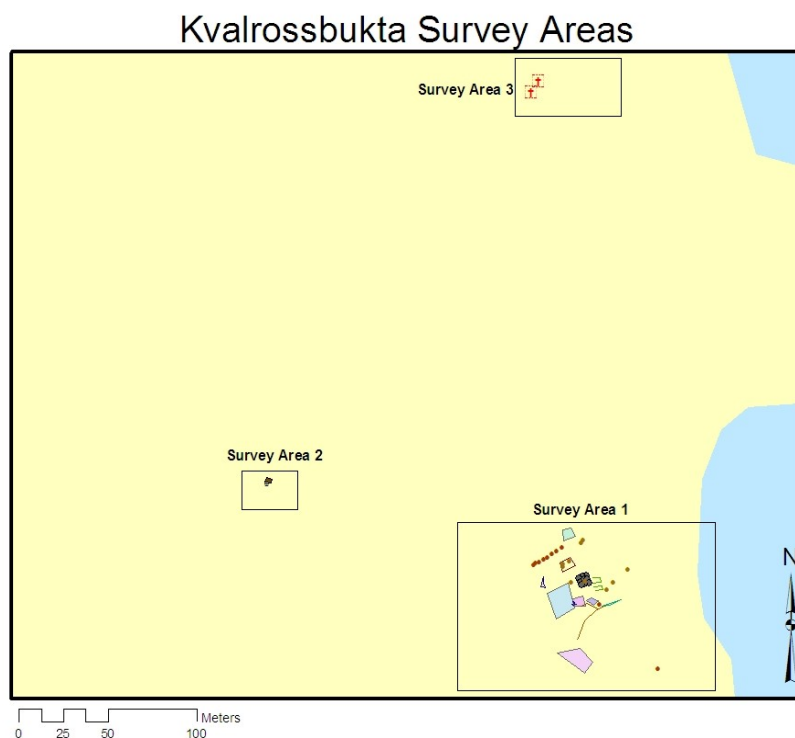


Fig 77. GPS map of the three survey areas at Walrus Bay. Map by U.I. Gustafsson and G. Rosnes. LASHIPA 5/2008.

⁵⁶⁷ The LASHIPA 5 Expedition Report. 2008. Pp: 125-132.

Features of Walrus Bay whaling station

Please see LASHIPA 5 fieldwork report (2008) for more detailed descriptions.

- | | |
|--------------------------|-----------------------------|
| 1 – Accommodation house | 2 – Pathway to Sørhamna |
| 3 – Steam boiler | 4 – Wooden floor |
| 5 – Foundation | 6 – Foundation of hut/shed |
| 7 – Elevator system | 8 – Blubber cookery |
| 9 – Wooden poles | 10 – Anchor points |
| 11 – Forge | 12 – Foundation for winches |
| 13 – Winch | 14 – Propeller |
| 15 – Winch | 16 – Buoy |
| 17 – Metal artefact | 18 – Harpoon grenade |
| 19 – Remains of barrels | 20 – Wooden poles |
| 21 – Flensing platform | 22 – Wooden pole |
| 23 – Area with iron wire | |

Organisation of production

M.A. Ingebrigsten's whaling stations at Rolfsø and later at Walrus Bay were designed and organised similarly. The largest difference between the two stations was that the whaling station at Walrus Bay had a wooden flensing platform, which the station at Rolfsø did not. This is probably due to the differences in tide between the two sites. The similarity between the two stations is not surprising since the whaling station at Rolfsø was disassembled and re-erected at Walrus Bay during the spring and summer of 1905. This station was, much like Finneset whaling station, divided into production, accommodation, and ancillary functions.

The whale catcher(s) supplied the whaling station with raw materials, which were transported by a tug boat to one of the two buoys located in Walrus Bay and in Sørhamna.⁵⁶⁸ Using a small boat, the shore workers brought one whale at a time from these buoys to the whaling stations flensing platform. At the wooden flensing platform (today non-existent), the flensers separated the blubber from the whales body using flensing knives and steam winches. The two steam-powered winches were located at the west side of the flensing platform (Fig 78, 12 and 13). These winches were used to tow the whales from the shoreline onto the flensing platform and to pull the strips of blubber from the whale's body.

⁵⁶⁸ "Logbook D/S Skytten 1905". The National Library of Norway. MS Fol 3905.

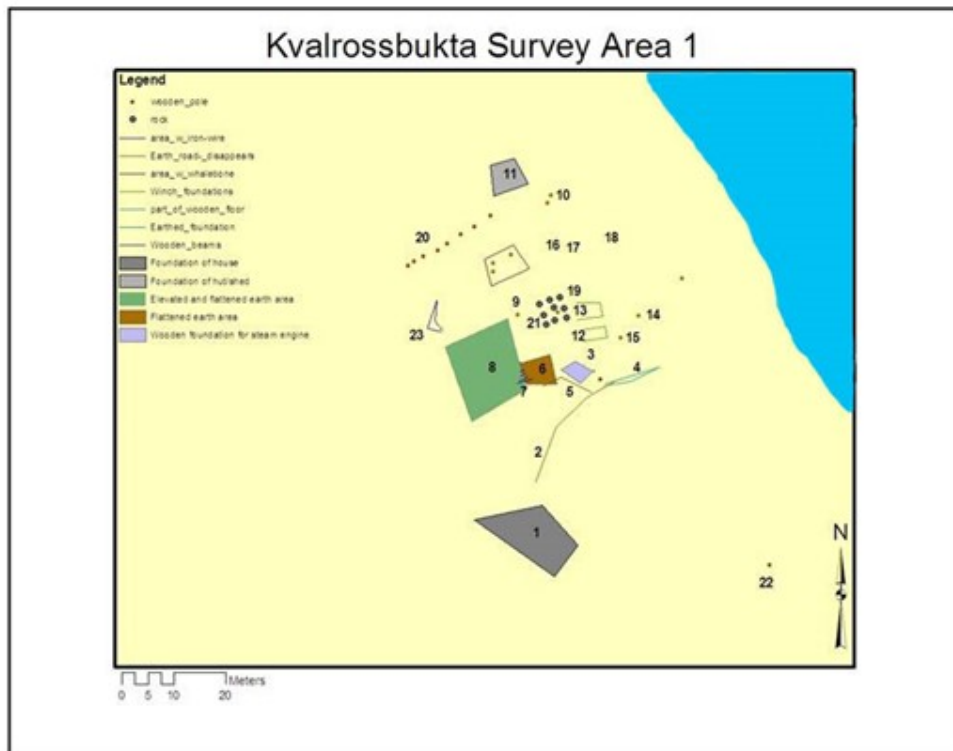


Fig 78. GPS map of Walrus Bay whaling station. Map by U.I. Gustafsson and G. Rossnes. LASHIPA 5/ 2008.

The blubber was cut into long strips that were fed into a steam-powered rotating blubber cutter in the blubber cookery building (Fig 78, 8). This machine cut the blubber into smaller pieces, which were transported to the top of the cookery building via an elevator (Fig 78, 7). On the top of the cookery building, these pieces were fed into six vertical cookers.⁵⁶⁹



Figure 79. Feature 13. The two steam winches that were used to pull whales up for processing. The winches were produced by Pusnæs ST & MEK VERKSTED. ARENDAL. NORGE. Type No 358. Today, only the foundation for the winches remain in situ, while the winches are lying on the beach. Photo by U.I. Gustafsson. LASHIPA 5 August 2008.

⁵⁶⁹ Svendsen. A. *Forliset på Bjørnøya I 1916*. 1976. In: *Polarårboken 1975/76*. The Norwegian Polar Club.

Ingebrigtsen probably used open cookers, similar to those used at Finneset, since these came from his former whaling station, which was built in the 1890s when these cookers were common. Once the blubber was cooked, the resulting whale oil was transferred into a clearing tank where it settled before being tapped into wooden barrels and stored away beside the production area (Fig 78, 20) awaiting transport to the markets further south. Today, there are few remains of the whaling station. Parts of the station were disassembled when operations ceased, and what was left has probably been used as building materials for later industrial projects on the island. This made it difficult to determine whether the station was equipped with a hand winch to rotate the whale, similar to Finneset whaling station. This is likely to be the case, but there is no data to support this hypothesis. Once the flensers had stripped all the blubber from the whale's body, the carcass was attached to the whale catcher through a line and pulled off from the flensing platform out to sea where it was dumped.

Steam production was essential for the whaling station's production and function. Steam was produced in a steam boiler house equipped with a single boiler (Fig 78, 3).

Freshwater for the boiler house and for drinking was supplied by a small runoff stream close to the station.⁵⁷⁰ Coal used by the station and ships was mined by Ingebrigsten's employees at outcrops along the east coast of the island, which were later commercially exploited by Bjørnøen AS. In addition to the primary production area, the station was equipped with a forge (Fig 78, 11). The blacksmith was responsible for repairing and maintaining the boiler, pipes, and cookers, as well as sharpened flensing knives and

⁵⁷⁰ Gustafsson.U.I. *Industrialising the Arctic: Settlement design and technical adaptations of modern whaling stations in Spitsbergen and Bear Island*. P: 52f. In: *Whaling and History III*. Papers presented at a symposium in Sandefjord on the 18th and 19th of June 2009. Kommendør Chr. Christensen's Hvalfangstmuseum, Sandefjord. Vestfoldmuseene. Norway.2010. See also: *The LASHIPA 5 Expedition Report*. 2008. Pp: 125-132.

assembling barrels for storing whale oil.



Fig 80. A steam boiler that still stands in situ at Walrus Bay. This boiler was used to generate the heat and pressurised steam that was necessary to run winches and cookers for processing raw material into liquid oil. Photo: G. Rossnes. LASHIPA 5/2008.

The whaling station was located in a small natural dip in the landscape. This dip provided shelter from winds coming from the west and from the north. However, Ingebrigtsen probably chose the location because of dry land with accessible freshwater and a good harbour. During the 2008 LASHIPA 5 expedition, large parts of the island's east coast were surveyed. These surveys showed that, beside Walrus Bay, there are no other areas along the east coast with a flat and dry piece of land where it is possible to erect several large buildings close to the sea, and which have a relatively deep and accessible harbour. At the former Tunheim coal mine, which is located further north on the east coast, the harbour is deep but very exposed. Furthermore, the coastline here consists of steep cliffs, which would have made it impossible to establish a whaling station, let alone deliver whales to it. Unlike most other whaling stations in the polar areas, which separated the production area from the accommodation area to create hierarchical divisions and to avoid smells from the production area, Ingebrigtsen put the production and accommodation buildings in immediate vicinity of each other, in the

same natural dip. Therefore, all the buildings at the whaling station were partly sheltered from the winds.



Fig 81. Walrus Bay whaling station was situated in a natural dip, which provided shelter from winds. The station was completely exposed to easterly winds. Photo. G. Rossnes. LASHIPA 5/2008.

Another explanation for why he chose this solution was that Ingebrigtsen adopted a different hierarchical structure to other whaling companies. Unlike most managers, who commonly had an administrative role overseeing and managing hunting and production, Ingebrigtsen took an active part in the hunting as well as managing the company's activities. Throughout his whaling career, Ingebrigtsen acted as gunner and captain of D/S Skytten. During the hunting seasons at Bear Island, he visited the station at Walrus Bay to deliver his catch, or to maintain the boat. Consequently, he had less of a controlling role at the whaling station than was common within the industry. The hierarchical structure of the local network also reflects this. It seems that Ingebrigtsen had no need to use the design or the spatial layout of the station to create hierarchical boundaries, since only the workers lived there. It is possible that Ingebrigtsen had a person at the whaling station who was responsible for overseeing the work, but there is no evidence to support this. It is also possible that Ingebrigtsen used a different salary system to compensate for this and to secure and maintain control of his workers at the

station. His strategy to hire workers in his hometown Tromsø was probably a part of this strategy, since he knew the people and had a network there; he knew who he could count on to be a reliable worker. The LASHIPA fieldwork at the site revealed one accommodation house where all the workers, and possibly a foreman, lived during the season. This house was a two storey building built from wood with a corrugated steel roof and at least two brick chimneys.



Fig 82. The accommodation house at Walrus Bay whaling station. The station only had one house that was used to accommodate all workers, which meant that skilled and un-skilled workers were not separated as was the custom in many whaling stations in the Antarctic. Behind it is the production area with the blubber cookery and the forge on the ridge beyond.⁵⁷¹

The house had a small extension on its southern end, which was probably used for storing coal. Water for cleaning, hygiene, and drinking was collected from a small river running down from the mountains and led through to the production area. Throughout the operational period 1905–1908, the fleet changed several times. These changes were motivated by a desire to maximise the company’s overall catching capability and to secure a flow of resources within the local network to maximise the project’s output and

⁵⁷¹ Photo has been published with the kind approval of The Norwegian Polar Institutes photo collection. Tromsø, Norway.

economic profit. The main task of D/S Skytten and D/S Bjørn (from 1906) was to hunt and catch whales. A secondary task was to supply the local network with enough coal for hunting and processing. During the first season, Ingebrigtsen used tug boats as a link between the whale catchers and the whaling station. The fact that Ingebrigtsen chose not to use the tug boats Bjølfen and Dovre for more than one season could indicate that an increasing number of whales were caught within the catcher's operational range, and it was not necessary to extend the hunting area further.

Drift ice and fog were occasionally problematic. These, combined with underwater skerries and difficult access to the harbour at Walrus Bay, meant that delivering catches could be challenging. In an attempt to overcome this problem and to increase the overall production rate of the company, Ingebrigtsen replaced his tug boats with the schooner Herold for the 1907 season. It is also likely that he placed buoys in Walrus Bay and Sørhamna harbour during this season. This allowed the whale catchers to either deliver their catch to one of the two buoys or Herold, which was large enough to hold whales onboard. This organisation increased the processing rate of the local network since blubber flensed on Herold could immediately be processed into whale oil once it was delivered to the whaling station. The loss of Herold to the ice in 1908 affected the flexibility and capability of the local network to process whales and generate profit. Herold's crew could flense whales on the deck rather than alongside the hull. It is, however, unlikely that Herold was used to process the blubber into whale oil. As mentioned earlier, this is because early floating factory ships needed sheltered waters to flense and to cook the blubber since they used open cookers, which were not easy to operate in large swells.

Having enough coal for the whaling station and for the fleet was important. Coal supply was important enough to be included in Ingebrigtsen's 1904 claim. The claim reveals that Ingebrigtsen was able to use these resources in the past thanks to his local knowledge. From 1906, the task of the cargo ship Stabil and its crew was to mine coal for the whaling station and the fleet. The crew probably mined coal at the north-eastern part of the island where outcrops of coal were relatively easy to access. In 1909, Ingebrigtsen extended his territorial claim. This was probably motivated by Ingebrigtsen's realisation of the commercial value of coal in this part of the Arctic.

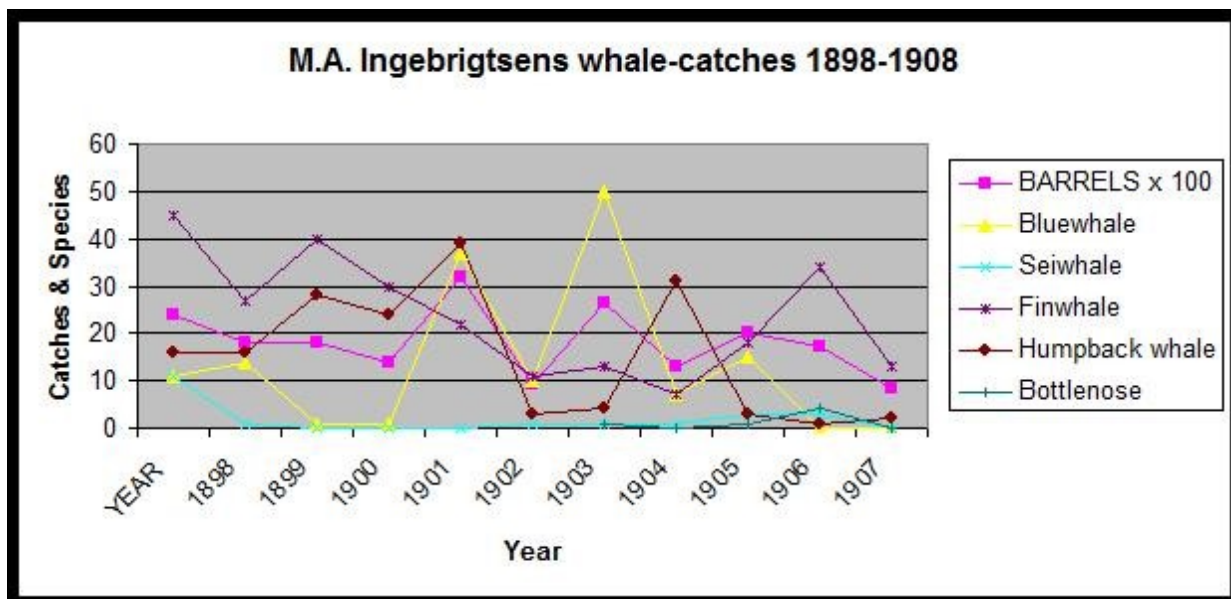


Fig 83. M.A. Ingebrigsten's whale catches 1898 –1908 in the European High Arctic. The relative fluctuation of barrels produced was highly influenced by sea ice and fog, which prevented hunting and processing. The figure show how the number of humpback whales caught dropped in the period 1900 –1903 and how the catches of blue whales increased.⁵⁷²

Ingebrigsten managed to catch more whales than the whaling companies operating in Spitsbergen. This might simply be because he operated in an area that was more frequented by whales. The lack of competition over the resources probably also played a role. It is also likely that Ingebrigsten's background and local knowledge of Spitsbergen and Bear Island had an influence. The more southern geographic location of Bear Island meant that Ingebrigsten's industrial project was exposed to less drift ice compared with Spitsbergen. Less ice meant that more days could be spent on industrial activities. This meant that Ingebrigsten's hunting season was longer than in Spitsbergen, where the whale catchers were often forced to wait for the ice or the fog to disappear before they could hunt.

⁵⁷² The figure is based on data collected from M.A. Ingebrigsten's ships-logbook 1898-1908, Risting. *S. Av Hvalfangstens Historie*.1922. Pp: 242-267, and Tønnesen. J.N. *Verdensfangsten 1883-1924, Del 1 1883-1914*. In: *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*. 1967. Bind 2. Pp: 84-106.

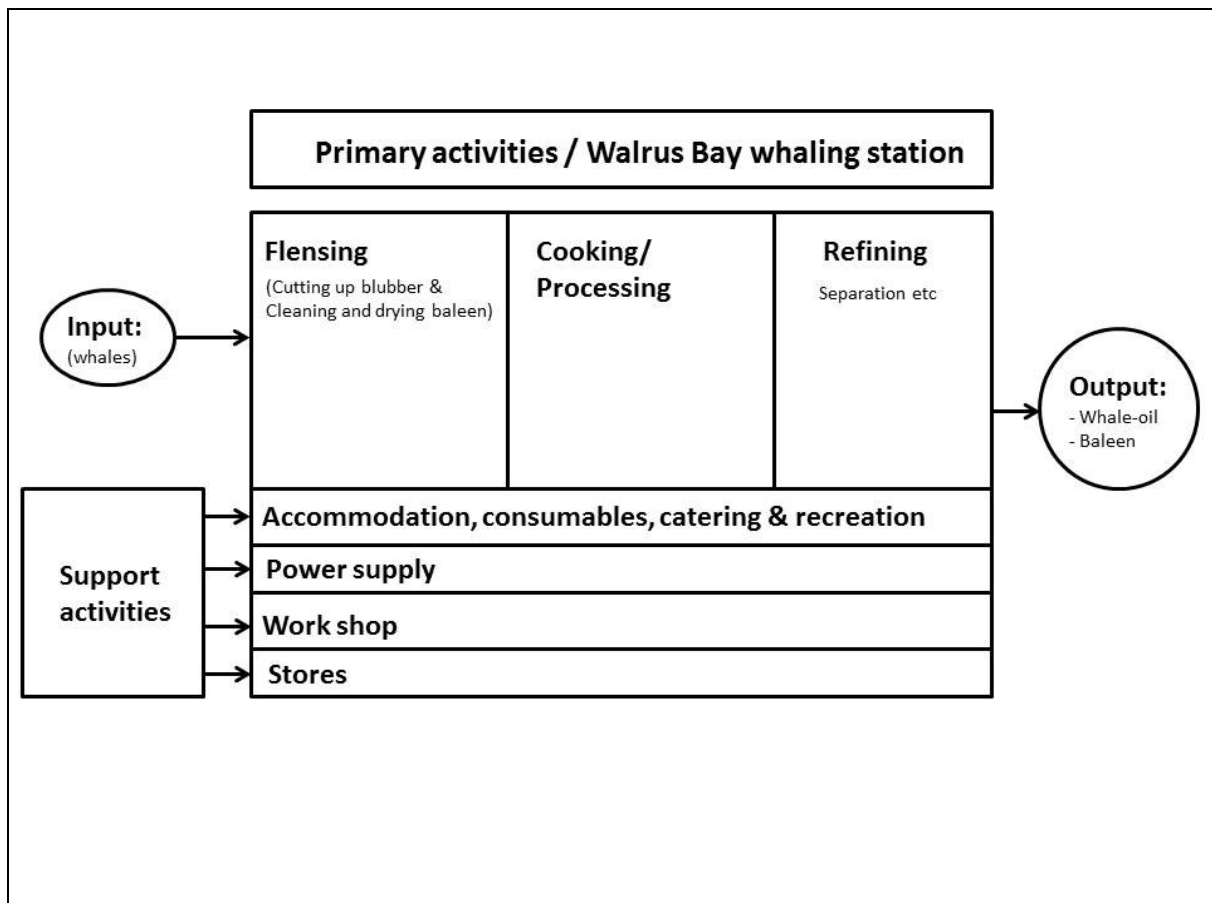


Fig 84. Primary activities at Walrus Bay whaling station.

Strategies for social control

Social strategies to create control and hierarchical boundaries were common within industrial projects during the 19th and early 20th centuries. It seems that social strategies were more important in the polar regions due to the lack of a legal framework to resolve strikes or conflicts. To achieve social control, company management separated workers from the management. Natural boundaries, such as rivers and hills, were often used to do this. If natural barriers were not available, buildings with supportive functions, like a hospital, were erected. Architecture was frequently used to differentiate between management and workers; the manager's villa was often an expression of this. It was often grandiose in its design and overlooked all parts of the production, suggesting the manager had full control of the station's functions and workers. The design and location of the manager's house served several purposes. In addition to being a hierarchical symbol of power and control, it was also the face of the company to visiting investors or other prominent guests. Basberg (2002 and 2004) has shown that the design and layout

of whaling stations in South Georgia clearly separated management and workers.⁵⁷³ At all of these whaling stations, the management lived at the station and did not take an active part in the production. Avango (2005) has shown that other strategies, such as leisure activities and housing standards, were important to industrial projects in Spitsbergen.⁵⁷⁴

M.A. Ingebrigtsen was the sole owner of the local network at Bear Island, including the station and boats. He worked onboard the whale catcher D/S Skytten throughout each season. This broke with the traditions mentioned above, since he did not use the spatial layout of the whaling station or the surrounding landscape to create a hierarchical division and separate himself from the workers. Nonetheless, Ingebrigtsen's logbooks show that he frequented the whaling station regularly, although he had boats to bring his catch to the station for processing. During these visits, he made sure that operations were working as they should. The whaling station had one building where the workers slept and ate (Fig 78, 1).⁵⁷⁵ Even though Ingebrigtsen probably had a manager at the station, that person lived together with the other workers in the accommodation house and there was no hierarchical design. This may be because Ingebrigtsen always used the same workers from Tromsø and his system was based on trust. The salary system, which was part-based and paid out once they had arrived in Tromsø, acted as a motivation for the workers to maximise production because the shore workers salary was directly linked to the production of whale oil and baleen. In addition, the workers were paid upon return to Tromsø when the season was finished and were dependent on Ingebrigtsen and his boat to return home. These factors contributed greatly to maintaining social control at the station, as it was in the workers' own interests that operations at the station ran smoothly and without interruption. Any laziness and attempts to disrupt production were likely dealt with by the workers themselves. It is interesting to note that the different workers were not separated as in many other

⁵⁷³ *A Ship Ashore? Organisation and living conditions at South Georgia whaling stations, 1904-1960.* In: International Journal of Maritime History. Vol: XIV, No: 1, 2002, and *The Shore Whaling Stations at South Georgia; A Study in Antarctic Industrial Archaeology.* 2004.

⁵⁷⁴ *Sveagruvan: Svensk Gruvhantering Mellan Industri, Diplomati och Geovetenskap.* Stockholm: Jernkontoret. 2005.

⁵⁷⁵ Gustafsson, U. I. *Industrialising the Arctic: Settlement design and technical adaptations of modern whaling stations in Spitsbergen and Bear Island.* In: Whaling and History III. Papers presented at a symposium in Sandefjord on the 18th and 19th of June 2009. Kommendør Chr. Christensen's HvalfangstMuseum, Sandefjord. Vestfoldmuseene. Norway. 2010. See also: The LASHIPA 5 Expedition Report. 2008. Pp: 125-132.

stations; skilled and un-skilled workers lived in the same building. There are, unfortunately, no sources to provide insight into the internal design of the house or how the different workers were organised. A similar system was used for the boat crews. They were paid depending on the number of whales they caught and received their pay upon return to Tromsø. As such, their salary was dependent on the skill of the gunner. Unlike the shore workers, the boat crew lived onboard the boats for the entire season.



Fig 85. The accommodation house was located on a small ridge overlooking the blubber cookery and the forge. The house had two pipes, and it is reasonable to assume that one was used for heating while the other was located in the kitchen.⁵⁷⁶

Leisure activities, together with good accommodations and the part-based salary system, were an important tool for maximising production and creating good, healthy, and stable working conditions. How much access the workers had to leisure activities other than games is unclear due to lack of sources. It is possible that they had the opportunity to go hiking in the surrounding landscape on Sundays, when Ingebrigtsen often gave the workers a day off. There are several small freshwater lakes at Bear Island so fishing was also a possibility. The workers may have gone fishing, both as a leisure activity and to vary their diet at the whaling station. It appears that Ingebrigtsen was

⁵⁷⁶ The photo has been scanned from «Bjørnøya». By: A. Hoel, A. Kvalheim, C. Schive & G. Smith. 1918. Tromsø Statsarkiv. Miljøverndepartementet. Norsk Polarinstitut. Vol: 0054. E- Korrespondanse og saksdokumenter.

successful in creating a stable local network and a good environment since there are no indications that strikes occurred at Walrus Bay whaling station.

Conclusions

There were several factors that affected how Ingebrigtsen constructed and designed his industrial project at Bear Island, including his knowledge and experience of the physical environment, the local environment, and the legal status of Bear Island. Ingebrigtsen had to weave all of these factors together to succeed.

During his operational years in northern Norway, Ingebrigtsen hunted with his whale catcher in the proximity of Bear Island. During this time, he incorporated the harbours at South Harbour (Sørhamna), Walrus Bay, and Russehamna into his local network. The introduction of the 1904 whaling ban in northern Norway forced Ingebrigtsen to move his production unit, but he did not have to adapt to new hunting grounds. Unlike many other whaling companies, Ingebrigtsen did not have to negotiate his plans with any shareholders since he was the sole owner and investor of his project.

Ingebrigtsen's decision to establish a whaling project in the Arctic was motivated by a belief that whale populations there were large enough to sustain a high level of exploitation, and that an industrial project here would be financially profitable. He may also have been motivated by the recent success of the hydrogenation process.

The activity and exploitation that occurred in this part of the Arctic during the first decade of the 20th century caused whale populations to decline rapidly. This illustrates the typical activities of the modern whaling industry. Moving the rather small and simple whaling station from Rolfsø in northern Norway to Walrus Bay was not an easy task due to drift ice that filled the harbours on the east coast of Bear Island. In the summer of 1904, Ingebrigtsen claimed an area at Bear Island and investigated the possibilities of establishing his station at Bellsound. He may have wanted to operate from Bellsound because of his earlier hunting activities in the area. It is also possible that he was, like many others, attracted to the area because of the success A/S Ørnen had the previous summer.

To get the support and protection of the Norwegian Foreign Ministry, Ingebrigtsen reported all his claims at Bear Island to the Ministry. This was in line with contemporary practices. This meant that Ingebrigtsen enlisted the Foreign Ministry in his global network, which was important due to the large interest in the island. Enlisting the Foreign Ministry was important because their support would be needed in case of conflict or dispute over the areas he had claimed. Ingebrigtsen's claims were never challenged and he did not need to activate this support.

Even though Ingebrigtsen needed the support of the Foreign Ministry, he did not want the authorities to interfere with his project as this could result in similar restrictions the industry had experienced in northern Norway. Ingebrigtsen's views became apparent during the meeting at the Foreign Ministry to discuss Bear Island and Spitsbergen. Ingebrigtsen represented the whaling industry at this meeting and downplayed the role and extent of the industry from an economic point of view. The Norwegian government's geo-political interest in these arctic areas was growing and the whaling industry probably realised that they already had the support of the Ministry, since the government's primary interest lay in maintaining the presence of the industry and nationals.

Ingebrigtsen's productivity encouraged him to continue his project from 1905 to 1907, and he continued to make economic profit. Although catches declined constantly throughout the period, probably because of overexploitation, Ingebrigtsen managed to adapt his local network to maximise catches and production, and to maintain a high output compared with other whaling companies that operated in this part of the Arctic. The combination of large material losses, difficult ice conditions, and poor catches in the 1908 season, convinced Ingebrigtsen to abandon his whaling project in the Arctic. His partnership with Peder Bogen probably also played a role in this decision. Ingebrigtsen returned to the Arctic later in 1920 to pursue a whaling project with his son.

6. The modern whaling industry in the Subantarctic and the Antarctic in 1904–1931

Introduction

The potential for economic profit in the Antarctic region was discovered in the mid-18th century when the first explorers returned home and reported the abundance of marine resources there. Bouvet (1739), Cook (1772–1775), Weddell (1822–1823), and Ross (1839–1843) reported large numbers of whales and seals, and the first American sealers landed on South Georgia in 1780.

The first expedition to investigate whaling potential in the Antarctic was in the 1890s, and was initiated by the Norwegian whaling entrepreneur Svend Foyn.⁵⁷⁷ There were no earlier expeditions because European whaling companies were more interested in exploiting whale populations in the nearby seas in the northern hemisphere – along the coast of Norway, Scotland, and Iceland. At the time, these activities generated enough profits to fulfil the whaling companies' ambitions. The Antarctic was a remote and harsh area compared with other whaling grounds in the world – including the Arctic. The Antarctic was not well mapped at the time and lacked nearby populations and resources, such as building materials and fuels, that were important for sustaining whaling operations. For the whaling industry to be established there, expensive and risky expeditions were needed to ship all the materials there. Once the materials did arrive, the installations would need to be adapted to the harsh environment.

This changed in the first decade of the 20th century when whaling became a global industry. The modern whaling industry had exhausted the resources in its established hunting grounds, which did not bode well for whale populations in the antarctic hunting grounds.⁵⁷⁸

⁵⁷⁷ In 1890, the Norwegian Svend Foyn despatched a survey-expedition to the Antarctic to investigate the possibilities of exploiting the stocks. This was followed by an expedition from Dundee in 1892, which had similar purposes. See: Headland, R.K. *The Island of South Georgia*. 2009. P: 110.

⁵⁷⁸ Basberg, B.L. *The Shore Whaling Stations in South Georgia; A Study in Antarctic Industrial Archaeology*. 2004. P: 31.

The movement of whaling companies to the Antarctic was part of resource colonialism in the Atlantic at the time. Industrialists and scientists, together with their corporate and/or state supporters, constantly pushed the boundaries of natural resource exploitation and knowledge accumulation. This was fuelled by the increasing demand for raw materials in the growing industrial economies of the western world, as well as a fascination for the Antarctic, which was one of the last frontiers of the world.

Whaling in the Antarctic was established by actors who were willing to take high risks. Three whaling companies established operations in the Antarctic in 1904–1905; the Chilean Sociedad Ballenera de Magallanes, the Argentinean Compañía Argentina de Pesca Sociedad Anónima, and the Norwegian A/S Ørnen.⁵⁷⁹ These companies showed that whaling was possible and profitable in the Antarctic. The success of these companies attracted other contemporary whaling actors to invest in similar projects.

In the following chapters, I will explain how and why the Antarctic whaling industry developed from 1904 to 1931, focusing on two whaling stations and the companies that operated them: Prince Olav Harbour at South Georgia, and Borge Bay whaling station at Signy Island in the South Orkney Islands. In this chapter, I will discuss the whaling industry in the Antarctic from a broader perspective and present two types of local networks – or technological systems – for whaling. I will also introduce the early development of the modern whaling industry in the Antarctic as a technological system, as well as the geo-political context in which it operated. The aim of this chapter is to provide a background for the following two chapters, which focus on individual whaling stations, and a point of departure for my comparative analysis of whaling in the Arctic and the Antarctic.

Shore-based and pelagic whaling in the Antarctic region

The Antarctic whaling industry used two local networks for production: whaling stations and factory ships. Both functioned as processing units and each had its advantages and disadvantages. The whaling stations, or shore-based whaling stations as

⁵⁷⁹ For further reading on these companies, please see Hart, I. B. *PESCA; The History of Compañía Argentina de Pesca Sociedad Anónima of Buenos Aires. An account of the Pioneer modern whaling and sealing company in the Antarctic*. 2001. Johnsen A.O, and Tønnesen. J.N. *Den Moderne Hvalfangst Historie. Opprinnelse og Utvikling*. 1959-1976. Vol 1-4.

Basberg have called them,⁵⁸⁰ were land-based installations. These stations had plenty of space and the companies that operated them used the surrounding landscape to construct their local networks. This space allowed a larger, more diversified processing technology and a higher level of utilisation compared with the floating factories. These whaling companies often processed more whales compared with semi-pelagic factory ships since processing at the stations was not affected by environmental circumstances. On the other hand, shore-based stations lacked the manoeuvrability of floating factories. As pelagic whaling developed in the late 1920s, the pelagic factory ships became just as efficient as land-based stations at processing whales.

Factory ships were either semi-pelagic or pelagic. As I mentioned earlier, several companies chose to use this type of platform since it gave them manoeuvrability and the possibility to place their ship in the immediate vicinity of migrating whale populations. On the other hand, they had less space, which limited their utilisation of whale carcasses. Pelagic whaling in its true sense did not begin until after the late 1920s, since the early factory ships were dependent on sheltered waters to flense the whales alongside the ship. A more correct term for these ships is semi-pelagic. The first true pelagic factory ship was introduced by Lancing in 1925. During the 1920s, the whaling companies and ship builders developed new designs and materials, which enabled them to increase the size of the factory ships.

One of the largest challenges for whaling companies was finding access to a constant supply of freshwater. This was essential for the production of whale oil, since steam was essential for cooking and operating the machinery. In the 1930s, several important technologies were developed that allowed freshwater to be produced from saltwater onboard the factory ships. This made the whaling operations independent of land and they became truly pelagic. This allowed the whaling companies to operate in international waters where there were no concessions and restrictions on catches and utilisation. This increased the overall catch and output of the Antarctic whaling industry. As prices for whale oil dropped throughout the 1920s, the industry compensated by increasing catches and production to generate enough profits for its shareholders and to secure the survival of their whaling operations. This coincided with the global economic

⁵⁸⁰ Basberg B.L. *The Shore Whaling Stations at South Georgia*. 2004.

recession and market collapse in the late 1920s, during which several companies had difficulties selling their produce. Companies like Lever Bros were able to secure large quantities of raw materials at low cost and this dictated the development of the whaling industry in the early 1930s.

The whaling industry's choice of technology was the result of a complex interaction between British policy making and regulatory decisions, environmental circumstances, and the individual business strategies of the whaling companies.

The geo-political context of the modern whaling industry in the Antarctic

The development of the modern whaling industry in the Antarctic was related to the broader geo-political situation in this region at the turn of the 20th century, particularly the ambitions of the British Empire. At this time, the legal status of the Antarctic was uncertain. No states had any good reason to claim it. The only exception was the British explorer James Cook, who had claimed South Georgia on behalf of Britain back in 1775. However, when Compañía Argentina de Pesca Sociedad Anónima established itself in South Georgia in the summer of 1904–1905, the company and the governor of the Falkland Islands were unaware of James Cook's claim.⁵⁸¹ It seems, according to Hart, that the British authorities were equally unaware of this at the time.⁵⁸² Once the British Foreign Office realised James Cook's earlier claim, Great Britain soon reaffirmed its sovereignty over South Georgia, the South Sandwich Islands, the South Orkney Islands, and the South Shetland Islands. In 1906, the Norwegian Foreign Ministry asked its British counterpart about the legal status of the South Shetland Islands, as the governor of the Falkland Islands appeared to have no knowledge of the legal status of the areas in question.⁵⁸³ On May 16, 1906, the British foreign minister, Sir Edward Grey, informed the Norwegian minister in London, Fridtjof Nansen, that South Georgia, the South Shetland Islands, the South Orkneys, and the northern part of Graham Land on the

⁵⁸¹ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. In: *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*. Vol: 2. 1967. P: 279, and 324ff.

⁵⁸² Hart. I. *PESCA – The history of Compania Argentina De Pesca Sociedad Anonima of Buenos Aires - A account of the pioneer modern whaling and sealing company in the Antarctic*. 2004. P: 65f.

⁵⁸³ "Angående forhandlinger mellem Norge og England vedrørende den britiske annekasjon av syd-shetland-syd georgia området. 30.06. 1924". Vol: Hvalfangerforeningen. Fldr: Korrespondanse angående internasjonale avtaler. Vol 2. 1920-30 årene. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

Antarctic Peninsula were British.⁵⁸⁴ Grey told Nansen that the Norwegian whaling industry should apply to the governor of the Falkland Islands for any facilities the industry might need.⁵⁸⁵ This was one of the first steps made by the British authorities to assert British claims to an area primarily populated by non-British whaling companies. In October that same year, the British authorities issued the Whale Fishery Ordinance of 1906, which stated that it was illegal for whaling companies to catch whales in these areas without concession from Great Britain.⁵⁸⁶

In other words, Britain ordered the whaling companies to apply to the British Colonial Office and to the governor of the Falkland Islands for permission to conduct whaling operations and establish a whaling station. These licences determined the geographical boundaries the company could operate within, as well as the number of whale catchers they could use. Two years later, the British authorities issued the Letters Patent of July 21, 1908. With this document, Great Britain claimed the territorial rights in these parts of the Antarctic: *“the groups of islands known as South Georgia, the South Orkneys, the South Shetlands, and the South Sandwich Islands, and the territory known as Grahams Land, situated in the South Atlantic Ocean to the south of the fiftieth parallel of south latitude, and lying between the twentieth and the eightieth degrees of west longitude, which are part of our dominions are to be administered as Dependencies of our colony of the Falkland Islands.”*⁵⁸⁷ With this statement, Great Britain reasserted historical claims to the areas in question. According to Dodds, the Antarctic Peninsula and many other areas

⁵⁸⁴ “*Angående forhandlinger mellem Norge og England vedrørende den britiske annekasjon av syd-shetland-syd georgia området. 30.06. 1924*”. Vol: Hvalfangerforeningen. Fldr: Korrespondanse angående internasjonale avtaler. Vol 2. 1920-30 årene. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

See also: Hall. R. H. *The Norwegian inquiry of 1906 into Antarctic sovereignty: inexperience or prudence?*. 1989. P: 59. In: Polar Record, 25 (152).

⁵⁸⁵ “*Angående forhandlinger mellem Norge og England vedrørende den britiske annekasjon av syd-shetland-syd georgia området. 30.06. 1924*”. Vol: Hvalfangerforeningen. Fldr: Korrespondanse angående internasjonale avtaler. Vol 2. 1920-30 årene. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

See also: Hall. R. H. *The Norwegian inquiry of 1906 into Antarctic sovereignty: inexperience or prudence?*. 1989. P: 59. In: Polar Record, 25 (152).

⁵⁸⁶ “*The Whale Fishery Ordinance of 1906*”. The Falkland Islands Archives. Vol: SG&DEP. WHALING-General (1), 1915-1921. SGD/WAH/1.

⁵⁸⁷ Headland. R.K. *Delimitation and administration of British dependent territories in Antarctic regions*. 1992. P: 315. In: Polar Record 28 (166), and Mackenzie. M. *British Letters Patent of 1908 and 1917 constituting the Falkland Islands Dependencies*. 1948. P: 241-243. In: Polar Record. No 5, 35-36. Vol 5, January-July 1948. There were some interpretative uncertainties in the document, which in 1917 promoted the declaration of “*Letters Patent of March 28, 1917*” in which a further definition and administration of the areas claimed were presented and asserted.

in the Antarctic were demarcated into the Falkland Islands Dependencies at the stroke of a pen, with the result that thousands of square miles of ocean, islands, and continental landscapes were incorporated into their imperial state.⁵⁸⁸ They did, however, have to adjust the extent of the continental landscapes because they included parts of other sovereign states such as Argentina. Great Britain supported their claims by saying the whale industry needed to be controlled to sustain the whale populations and to avoid the overexploitation that had taken place elsewhere.⁵⁸⁹

However, as Klaus Dodds and Peder Roberts have shown, the whaling regulations were means to achieve other ends. Firstly, the British government wanted to establish and maintain its rule over the area because it considered it to be strategically important. The concession system supported this end – when whaling companies from various nations applied to the British authorities for concessions and leases, Britain argued that this constituted recognition of British sovereignty in the region. Secondly, the British colonial authorities profited from annual licences and fees and taxes from whale oil production. The British regulations for the whaling industry were means to achieve these ends.⁵⁹⁰

Prince Olav Harbour and British geo-politics in South Georgia

At the turn of the 20th century, the whaling industry's favourite spot in the Antarctic was South Georgia. Between 1904 and 1908, no less than seven whaling companies established whaling stations there. In 1908, the British Colonial Office decided not to issue any further leases for South Georgia.⁵⁹¹ Three years later, in 1911, the Colonial Office decided to issue a final concession and lease at the island. Several applicants contacted the British Foreign Ministry after hearing the news. The first whaling actors to react were the Norwegians Carl Anton Larsen and Alex Lange.⁵⁹² They were both

⁵⁸⁸ Dodds. K. J. *Antarctica and the modern geographical imagination (1918-1960)*. 1997. P: 50. In: *Polar Record*. No 33 (184). Pp: 47-62.

⁵⁸⁹ Roberts. P. *A frozen field of dreams: Science, strategy, and the Antarctic in Norway, Sweden and the British empire 1912-1952*. 2010.

⁵⁹⁰ Roberts. P. *A frozen field of dreams: Science, strategy, and the Antarctic in Norway, Sweden and the British empire 1912-1952*. 2010: 14ff. See also: Dodds. K. *Pink Ice – Britain and the South Atlantic Empire*. 2002. Preface xvii.

⁵⁹¹ "Letter from H.B. Cox at the Colonial Office, to The Excellency The Norwegian Minister. May 21, 1908". The Falkland Islands Archive. Vol: *Confidential Despatch Book, May 1927 – Dec 1936, Inward*. See also: Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 255. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

⁵⁹² "Letter from C.A. Larsen, to J. Innes Wilson, Esq. Stipendary Magistrate South Georgia. January 3, 1911". The Falkland Islands Archives. Vol: *Confidential Despatch Book, Jan 1907 – Dec 1911, Outward*. See also:

experienced whaling entrepreneurs and had participated in the industry in the Antarctic at the turn of the century. Chr. Salvesen & Co, and a group consisting of the Irvin family and C.O. Johnson also contacted the British Foreign Ministry and applied to the Colonial Office. The Colonial Office favoured the application of the two Norwegians over the two British applicants.⁵⁹³ Both applicants intended to establish a whaling station at Prince Olav Harbour and to operate in the waters of South Georgia.⁵⁹⁴

Interestingly enough, the magistrate of South Georgia had forwarded C.A. Larsen's application to the British Colonial Office in London with a recommendation to consider Larsen's application as he was a "*naturalized British subject of the colony*".⁵⁹⁵ The interest in the eight concessions stimulated much discussion within the Colonial Office about British policy in the region. The Secretary of State for the colonies, Mr Harcourt, argued that nine rather than eight concessions should be offered in South Georgia.⁵⁹⁶ He also argued that it would be wise to postpone any decision on the ninth concession until the application could be granted to a British firm.⁵⁹⁷ The magistrate of South Georgia argued that Mr. Lange's application was the strongest.⁵⁹⁸ In spite of Mr Harcourt's opinion, the Colonial Office turned down both applications from the British companies. The Colonial Office wrote to the Irvin and Johnson group that the prospects of getting a

"Confidential letter from the Governor of the Falkland Islands, to the Right Honble. Lewis Harcourt. Secretary of State for the Colonies. May 13, 1911". The Falkland Islands Archives. Vol: *Confidential Despatch Book, Jan 1907 – Dec 1911, Outward*.

⁵⁹³ "Enclosure No 1 to confidential despatch of 15 May, 1911. Extract from the Minutes of the Executive Council of 13 May, 1911. Sitting No II". The Falkland Islands Archives. Vol: *Confidential Despatch Book, Jan 1907 – Dec 1911, Outward*.

⁵⁹⁴ "Letter from C.A. Larsen, to J. Innes Wilson, Esq., Stipendary Magistrate South Georgia, 3rd January, 1911". The Falkland Islands Archives. Vol: *Confidential Despatch Book, Jan 1907 – Dec 1911, Outward*. See also: "Enclosure No 3 to Confidential despatch of 13 May, 1911. Extract from the Minutes of the Executive Council of 13 May, 1911. Sitting No II". The Falkland Islands Archives. Vol: *Confidential Despatch Book, Jan 1907 – Dec 1911, Outward*.

⁵⁹⁵ "Letter from J. Innes Wilson, Stipendary Magistrate, to the Hon. The Colonial Secretary, Falkland Islands. January 9, 1911". The Falkland Islands Archives. Vol: *Confidential Despatch Book, Jan 1907 – Dec 1911, Outward*.

⁵⁹⁶ "Confidential letter from the Governor of the Falkland Islands, to the Right Honble. Lewis Harcourt. Secretary of State for the Colonies. May 13. 1911". The Falkland Islands Archives. Vol: *Confidential Despatch Book, Jan 1907 – Dec 1911, Outward*.

⁵⁹⁷ "Confidential letter from the Governor of the Falkland Islands, to the Right Honble. Lewis Harcourt. Secretary of State for the Colonies. May 13. 1911". The Falkland Islands Archives. Vol: *Confidential Despatch Book, Jan 1907 – Dec 1911, Outward*.

⁵⁹⁸ "Letter from the Governor of the Falkland Islands, to Lewis Harcourt, Secretary of State for the Colonies. May 13, 1911". The Falkland Islands Archives. Vol: *Confidential Despatch Book, Jan 1907 – Dec 1911, Outward*.

licence in South Georgia were slim,⁵⁹⁹ but that they could offer them a concession to operate in the South Orkney Islands instead, where six other whaling companies had already been given concessions.⁶⁰⁰ Having little whaling experience, it is likely that the Irvin and Johnson group realised that operating in the South Orkney Islands, where many others had failed, would place them in a precarious financial situation.

Mr. Irvin appealed to the Secretary of State, Mr. Harcourt, requesting a meeting with him to discuss the matter. He argued that *“it is a matter of life and death to us financially”*.⁶⁰¹ Mr. Irvin explained the national importance of their fishing and trawling business, which incorporated more than 140 steam vessels, 1,300 fishermen, and an additional 1,200 employees in subsidiary companies. Mr. Irvin ended his letter by stating that *“the British know very little about it, and the government had an opportunity here, I think, of giving the British a chance to lend a hand in developing the industry in His Majesty’s territories...our scheme is one involving great risk and difficulty, but we hope, with perseverance and with all-important backing from our government, to make it a success”*.⁶⁰²

In early July, the Colonial Office decided to award the ninth concession and lease for South Georgia to the British company,⁶⁰³ effectively excluding the two Norwegian companies. Whether or not this was a result of Mr. Irvin’s letter is uncertain. As compensation for losing the concession at Prince Olav Harbour, the Colonial Office offered Mr. Lange a concession and lease to build a whaling station on Deception Island.⁶⁰⁴ These moves by the British authorities could be interpreted as a strategy to strengthen British occupation of South Georgia by increasing the presence of British business activities there. Establishing a second British whaling station at South Georgia

⁵⁹⁹ *“Letter from the Southern Whaling & Sealing Company, to the Under Secretary of State, Colonial Office in London. April 4, 1911”*. The Falkland Islands Archives. Vol: *Confidential Despatch Book, Jan 1909 – Aug 1911, Inward*.

⁶⁰⁰ *“Letter from G.V. Fiddes, to John. H. Irvin. March 22, 1911”*. The Falkland Islands Archives. Vol: *Confidential Despatch Book, Jan 1909 – Aug 1911, Inward*.

⁶⁰¹ *“Letter from John. H. Irvin, to the Rt. Hon. Lewis Harcourt. Secretary of State for the Colonies, London. June 10, 1911”*. The Falkland Islands Archives. Vol: *Confidential Despatch Book, Jan 1909 – Aug 1911, Inward*.

⁶⁰² *“Letter from John. H. Irvin, to the Rt. Hon. Lewis Harcourt. Secretary of State for the Colonies, London. June 10, 1911”*. The Falkland Islands Archives. Vol: *Confidential Despatch Book, Jan 1909 – Aug 1911, Inward*.

⁶⁰³ *“Enclosure to Confidential despatch of 2nd August, 1911. Falkland Islands: Extract from the Minutes of the proceedings of the Executive Council at a meeting held on 31 July, 1911”*. The Falkland Islands Archives. Vol: *Confidential Despatch Book, Jan 1907 – Dec 1911, Outward*.

⁶⁰⁴ *“Letter from Mr. Harcourt, to the Governor Mr. Allardyce. July 1, 1911”*. The Falkland Islands Archives. Vol: *Confidential Despatch Book, Jan 1909 – Aug 1911, Inward*.

could have been an important step towards achieving this; especially at a symbolic location like Possession Bay – where James Cook had claimed South Georgia for Britain in 1775.

On June 1, Chr. Salvesen & Co decided to withdraw their application⁶⁰⁵ and the Colonial Office granted the concession to the Irvin and Johnson group, replacing the concession the company had received, rather unwillingly, for the South Orkney Islands earlier.⁶⁰⁶ In 1911, the Colonial Office granted a concession and lease for a period of 21 years at Prince Olav Harbour to the Irvin and Johnson group and their company the Southern Whaling & Sealing Company.

Why did the British authorities act the way they did? Was the primary motive for their change in whaling policy at South Georgia a desire to increase British economic presence in a region, which up to this point had been dominated by Norwegian citizens and capital? This contradicts the arguments of Gordon Jackson in 1978, who claimed that the British Colonial Office had conducted an anti-British policy that favoured non-British industrial enterprises.⁶⁰⁷ Jackson's argument appears to be based on the fact that the British authorities turned down several applications from Chr. Salvesen & Co. Here, I argue that the British authorities' goal in granting the concession and lease at Prince Olav Harbour to the Irvin and Johnson group and the Southern Whaling & Sealing Company in 1911 was to increase British economic interests in South Georgia. This policy grew stronger during the First World War and later during the post-war years. During this period, the British colonial authorities granted extraordinary liberties to British companies, which gave them operational and economic advantages over their non-British competitors.

⁶⁰⁵ "Letter from L. Harcourt, to the Governor W.L. Allardyce. July 1, 1911". The Falkland Islands Archives. Vol: 45. Despatch Book, Aug 1911 – June 1912, Inward.

⁶⁰⁶ "First indenture on licence and lease issued by W.L. Allardyce, Governor and Commander in Chief, to R. Irvin". The Falkland Islands Archives. Vol: SGD/WAH/1. SG&DEP, Whaling – General (1), 1915-1921.

⁶⁰⁷ Jackson. G. *The British Whaling Trade*. 1978. P: 173f.

Signy Island in British geo-politics at the South Orkney Islands

In the spring of 1920, the management of A/S Tønsberg Hvalfangeri, which consisted of K. Ludv Henriksen, Joh Gmeiner, and Hans Borge,⁶⁰⁸ contacted the Colonial Office to negotiate a whaling concession and lease of land in the South Orkney Islands. At the time, A/S Tønsberg Hvalfangeri already operated a whaling station in South Georgia. Hans Borge was assigned the task of negotiating and handling discussions with the Colonial Office. The choice to assign Borge was probably strategic since he managed the whaling companies A/S Kastor,⁶⁰⁹ and A/S Rethval from 1911 to 1915.⁶¹⁰ He also took part in whaling activities in the South Orkney Islands for A/S Rethval. During this time, Borge accumulated knowledge of local conditions, such as good anchorages and available freshwater. He also produced several maps of the South Orkneys, which meant that he was in a unique position to suggest a suitable location for the intended company's whaling operations. It seems likely, therefore, that the management's decision to expand their local network in the Antarctic by applying for a concession to operate in the South Orkney Islands, was highly influenced by Borge. It is also likely that Borge's maps and local knowledge were useful resources in persuading the company's shareholders to support a new whaling project in one of the harshest areas in the Antarctic.

During his negotiations with the British authorities, Borge applied on behalf of the company for a concession and lease for five years to establish a whaling station. The company intended to operate with two whale catchers.⁶¹¹ The application was discussed at the Colonial Office, where they realised that no whaling operations had taken place in the South Orkneys since the 1914–1915 season, when a whaling company called A/S Rethval had operated there. According to Roberts, the Colonial Office could not deny the application based on concerns of overharvesting the whale populations.⁶¹² The

⁶⁰⁸ Wasberg. G.C. "*Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*". 1958. P: 105. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁶⁰⁹ Sørensen. G, Hoff. J.O, Halvorsen. L & Salicath. C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 45.

⁶¹⁰ Roberts. B. *Chronological list of Antarctic Expeditions*. 1958. Vol: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁶¹¹ "*Letter from G. Grindle at the Colonial Office, to Herr. Borge (Tonsberg Whaling Co). July 12, 1920*". Also in: "*Letter from the Crown Agents to the Tonsberg Whaling Co. November 21, 1921*", and "*Letter from W. A. Thompson, acting Colonial Secretary to the Crown Agents for the Colonies. September 1, 1921*". The Falkland Islands Archive. Vol: SGD/WAH/1. SG&DEP, Whaling – General (1), 1915-1921.

⁶¹² Roberts. B. *Chronological list of Antarctic Expeditions*. 1958. Vol: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

magistrate for South Georgia supported A/S Tønsberg's application – they had already seen the company transport equipment for the intended whaling station and store it at their station at Husvik harbour in South Georgia. This equipment included all the buildings and technical installations for their Signy Island station, and they intended to transport these materials there as soon as their application was approved.⁶¹³ Before the British authorities made any decision, they investigated whether any British whaling companies were interested in the concession and lease.⁶¹⁴ Chr. Salvesen & Co and the Southern Whaling & Sealing Company both declined the offer, and the Colonial Office granted approval to A/S Tønsberg Hvalfangeri. It is interesting that Chr. Salvesen & Co declined the offer, since this company had applied for and been denied a concession for the same area only five years earlier.⁶¹⁵ I believe that, just like in South Georgia, the Colonial Office and the government of the Falkland Islands' primary motive was to attract British whaling companies to an area that had been dominated by Norwegian companies. Increasing British presence through economic activities established British occupation of the British Falkland Island Dependencies (which were recently founded through the declaration of the 1908 Letters Patent).⁶¹⁶

There were no objections to Britain's 1908 proclamation.⁶¹⁷ However, Argentina claimed some of the same areas in the Antarctic as Britain did. In early 1910, a British diplomat named Walter Townly reported to the Foreign Secretary Sir Edward Grey that Argentinean newspapers questioned the validity of the British territorial claims.⁶¹⁸ According to him, the newspapers had reported on a ceremony that took place at Laurie Island in South Orkney in connection to the takeover from William Speirs Bruce. During the ceremony, an Argentinean delegation took possession of a meteorological station

⁶¹³ "Letter from Edw. B. Binnie, Magistrate of South Georgia, to H.E. the Governor in Stanley. August 13, 1920". The Falkland Islands Archive. Vol: SGD/WAH/1. SG&DEP, Whaling – General (1), 1915-1921.

⁶¹⁴ "Letter from Sgd. Milner, Officer administrering the Government of the Falkland Islands, to Downing Street. July 12, 1920". The Falkland Islands Archive. Vol: SGD/WAH/1. SG&DEP, Whaling – General (1), 1915-1921.

⁶¹⁵ "Letter from C. F. Condell, Colonial Secretary to Messrs Chr. Salvesen & Co. July 12, 1915". The Falkland Islands Archive. Vol: SGD/WAH/1. SG&DEP, Whaling – General (1), 1915-1921.

⁶¹⁶ *British Letters Patent of 1908, and 1917 constituting the Falkland Islands Dependencies*. 1948. In: Polar Record. Vol 5, January-July 1948.

⁶¹⁷ Headland. R. K. *Delimitation and administration of British dependent territories in Antarctic regions*. 1992. P: 315. In: Polar Record. 28 (166). 1992. Pp: 315-318.

⁶¹⁸ "Letter from Walter Townley, to Sir Edward Grey, M.P. April 7, 1910". Vol: D5-1-4-4. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

originally built by the Scots, hoisted the Argentinean flag, and took down the Scottish flag to symbolise their claim of the area.⁶¹⁹

The governor of the Falkland Islands and the British Foreign Office had already discussed the legal status of South Orkney in 1906. During these discussions, the governor of the Falkland Islands, Allardyce, suggested that Britain should not send an expedition to hoist the British flag in the South Orkney Islands, but should rather approach carefully: *“I need hardly point out the undesirability of attracting the attention of foreign powers to the groups in question. For the present it is more important to establish the British title to them and preserve the right of British subjects to resort to them than to treat them as a source of revenue. You will therefore be careful not to impose onerous conditions on foreigners resorting to them for whaling and sealing”*.⁶²⁰

To commercial actors interested in whaling in the South Orkney Islands, the legal status of the archipelago seemed uncertain. The Norwegian government, acting on behalf of Norwegian whaling companies, inquired with various scientists on the matter since they had the impression that Britain had only claimed the Falkland Islands and South Georgia as British dominions.⁶²¹ Mr Nansen contacted the British government and asked them to answer three questions: *“1) Since when have the South Orkney, South Shetlands, and Graham Land been considered to belong to the British Crown?; 2) Have any special action been taken upon which the British sovereignty over these regions is based, and which, according to generally recognised principles of International Customs and Usages, is relevant in this case? 3) Has there been any notification from His Britannic Majesty’s government to Foreign Governments of the occupation of these countries under British Crown?”* The Foreign Secretary Sir Edward Grey responded that British sovereignty of the areas in question were based on historical discoveries and acts of possession made by Captain Powell, Captain Foster, and Captain Biscoe.⁶²² Furthermore, Mr Grey pointed

⁶¹⁹ *“Letter from Walter Townley, to Sir Edward Grey, M.P. April 7, 1910”*. Vol: D5-1-4-4. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁶²⁰ *“Letter from Downing Street, to the Governor Allardyce. June 9, 1906”*. The Falkland Islands Archive. Vol: Confidential Despatch Book, May 1927 – Dec 1936, Inward.

⁶²¹ Aagaard. B. *Antarktis 1502-1944. Oppdagelser, naturforhold og suverenitetsforhold*. 1944. P: 60f. In: Meddelelser No 60. Norges Svalbard og Ishavs-Undersøkelser.

⁶²² *“Angående forhandlinger mellem Norge og England vedrørende den Britiske annekasjon av Syd-Shetland – Syd-Georgia området”*. Archive: Hvalfangerforeningen. Korrespondanse angående internasjonale avtaler. Vol: 2. 1920-30 årene. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

out that it was “not the policy of His Majesty’s government to notify to foreign governments additions to British territory made by annexation, occupation, or otherwise”.⁶²³

The British interest in the South Orkney Islands appears to have been modest only a few years earlier. The leader of the Scottish National Antarctic Expedition in 1902–1904, William Speirs Bruce, requested authority from the British representative in Argentina and the governor of the Falkland Islands to claim the South Orkney Islands on behalf of Great Britain and was turned down.⁶²⁴ The reason was that neither of the two regarded the archipelago as important and argued that if the Argentineans wanted the South Orkneys for a meteorological station, then they should be allowed to have them.⁶²⁵ On February 22, 1904, Bruce formally handed over the station to the Oficina Meteorologica Argentina,⁶²⁶ and the Argentinean flag was hoisted.



Fig 86 and 87. The remains of Omond House erected by the Scottish National Antarctic Expedition at Laurie Island, South Orkney Islands, Antarctica. Right: Photo taken with permission for this thesis at Orcada Research Station at Laurie Island showing the formal hand over of the observatory of the Scottish National Antarctic Expedition to the Oficina Meteorologica Argentina in February 1904. Photo: G. Rossnes. LASHIPA 8/2010.

⁶²³ “Angående forhandlinger mellem Norge og England vedrørende den Britiske annekasjon av Syd-Shetland – Syd-Georgia området”. Archive: Hvalfangerforeningen. Korrespondanse angående internasjonale avtaler. Vol: 2. 1920-30 årene. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

⁶²⁴ “Letter from W.S. Bruce, to Sir Thomas H. Holditch. March 15, 1910”. The Centre for Research Collections, Edinburgh University. Vol: William Speirs Bruce Manuscripts, Gen. 1646 6/10.

⁶²⁵ “Letter from W.S. Bruce, to Sir Thomas H. Holditch. March 15, 1910”. The Centre for Research Collections, Edinburgh University. Vol: William Speirs Bruce Manuscripts, Gen. 1646 6/10.

⁶²⁶ “Letter from W.S. Bruce, to Sir Thomas H. Holditch. March 15, 1910”. The Centre for Research Collections, Edinburgh University. Vol: William Speirs Bruce Manuscripts, Gen. 1646 6/10.

In 1909, the British Foreign Office, the Colonial Office, and the governor of the Falkland Islands discussed whether to officially cede the South Orkney Islands to Argentina⁶²⁷ because the islands were considered to have no strategic value for Britain, except for meteorological uses, since they lacked good harbours and were ice-bound for long periods of the year.⁶²⁸ It is interesting that Britain only three years earlier, on 23 August 1906, and again in January 1907, notified the Argentinean government that the South Orkney Islands were British possessions.⁶²⁹ The Foreign Office believed that Great Britain should not cede the South Orkneys to Argentina for several reasons. Although the revenues gained from whaling concessions were minor, Sir Edward Grey believed that British firms might establish themselves in the area. He also argued that the islands should not be surrendered unless Argentina provided Britain with adequate compensation.⁶³⁰ Based on Grey's arguments, the Foreign Office suggested that Great Britain should reaffirm her claim to the archipelago by despatching one of His Majesty's ships to perform acts of ownership.⁶³¹ The British admiralty were not keen to endanger one of their modern warships in the Antarctic ice for such an expedition.⁶³²

The whaling concessions should be understood in this context. Rather than just being a tool to control overexploitation of the whale populations, they were a political tool to support and reinforce British claims to the area and the Antarctic as a whole. In 1912, the British governor of the Falkland Islands called it "third party recognition".⁶³³ This was not only a support for the British claims. The mere presence of the Norwegian

⁶²⁷ "Letter from L. Harcourt in response to letter of August 23, 1909, to the Officer administering the Governor of the Falkland Islands. November 11, 1910". Vol: D5-1-4-4. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁶²⁸ "Confidential enclosure to the Falkland Islands from Louis Mallet at the Foreign Office. May 25, 1910". Vol: D5-1-4-4. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams. See also: "Letter from Walter Townley, to Sir Edward Grey, M.P. April 7, 1910". Vol: D5-1-4-4. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁶²⁹ Aagaard. B. *Antarktis 1502-1944. Oppdagelser, naturforhold og suverenitetsforhold*. 1944. P: 61. In: Meddelelser No 60. Norges Svalbard og Ishavs-Undersøkelser.

⁶³⁰ "Letter from C.P. Lucas, The Under Secretary of State, Foreign Office, to Downing Street. June 11, 1910". Vol: D5-1-4-4. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁶³¹ "Letter from Louis Mallet at the Foreign Office, to the Secretary of the Admiralty. August 5, 1909". The Falkland Islands Archive. Vol: 40. Confidential Despatch Book, Jan 1909 – Aug 1911, Inward.

⁶³² "Letter from W. Graham Greene at the Admiralty, to the Under Secretary of State, Foreign Office. August 14, 1909". The Falkland Islands Archive. Vol: 40. Confidential Despatch Book, Jan 1909 – Aug 1911, Inward.

⁶³³ "Whaling Regulations. Government House, Stanley. May 6, 1912. T.A.V. Best, Colonial Secretary". Archive: Hvalfangerforeningen. Diverse pakkesaker. Vol: 3, 1912-1922. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

whaling industry in the South Orkney Islands also represented a form for an indirect effective occupation since it consisted of Norwegians rather than British citizens. In this context, it is surprising that Magnus Konow's ambitious project to establish a whaling station at Scotia Bay on Laurie Island was not supported by the British authorities. They refused his application for exclusive whaling rights for 21 years, instead granting him rights for one year.⁶³⁴ Perhaps the British authorities feared that Konow's project was a covert Argentinean attempt to strengthen their presence in the archipelago, since Konow frequently corresponded with the British authorities using a listed Argentinean address. Whether this was true or not, a project that may have established an Argentinean whaling station, which could be used by the Argentinean government to bolster their influence in the South Orkneys, was not strategically wise for the British as it could draw unwanted attention to the uncertain legal status of the archipelago.

According to Palmer, the governor of the Falkland Islands, Allardyce, appeared to change his mind about ceding the South Orkney Islands to Argentina in 1910.⁶³⁵ Allardyce probably realised the positive effects the revenues of the modern whaling industry had on the Falkland Islands' parlous economy.⁶³⁶ In an attempt to establish British whaling in the South Orkneys, and thus secure effective British occupation, the government of the Falkland Island Dependencies offered a whaling concession to the Irvin and Johnson group and their whaling company the Southern Whaling & Sealing Company.⁶³⁷ This group had, as mentioned above, applied for a concession and lease at South Georgia but were instead offered one for the South Orkney Islands. Although the company declined the offer, it indicates that the government of the Falkland Island Dependencies wanted to establish British whaling in the region. Parallel to this, six other whaling companies were granted concessions to operate in the same area.⁶³⁸ The following year, in 1912, the Foreign Office approached the Southern Whaling & Sealing Company again and

⁶³⁴ "Letter from W.L. Allardyce, to the Under Secretary of State, Colonial Office. March 14, 1910". The Falkland Islands Archives. Vol: 42. Despatch Book Jan 1910 – Dec 1910, Inward.

⁶³⁵ Palmer. S. Entry in "The Dictionary of Falklands Biography (including South Georgia). From Discovery up to 1981". 2008. P: 39. Editor: Tatham. D.

⁶³⁶ Palmer. S. Entry in *The Dictionary of Falklands Biography (including South Georgia). From Discovery up to 1981*. 2008. P: 39. Editor: Tatham. D.

⁶³⁷ "Letter from G. V. Fiddes, The Under Secretary of State, to Messrs Richard Irvin & Sons Ltd. April 28, 1911". Vol: D5-1-4-4. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁶³⁸ "Letter from G. V. Fiddes, The Under Secretary of State, to Messrs Richard Irvin & Sons Ltd. August 1, 1911". Vol: D5-1-4-4. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

offered them a sealing licence in the South Orkneys.⁶³⁹ In an attempt to establish territorial control and exercise sovereignty, the government of the Falkland Island Dependencies also tried to hire a customs officer in the South Orkney Islands. The offer was initially made to Moyes,⁶⁴⁰ who had acted as the government representative and customs officer onboard factory ships in the South Orkneys.⁶⁴¹ Moyes turned down the offer, and the position was offered to William Speirs Bruce, who had operated a meteorological observatory at Laurie Island between 1902 and 1904. Bruce also declined the offer because the salary was too low and because he had scientific commitments elsewhere.⁶⁴² Despite the increasing interest and revenues from whaling operations in the South Orkney Islands, the decision to cede the archipelago to Argentina appeared to be unresolved. In 1914, the discussion came to a close after Argentina declined an offer from Great Britain.⁶⁴³ There was nothing the British authorities in the Falkland Islands could do to exercise sovereignty over the South Orkney Islands, until A/S Tønsberg Hvalfangeri showed interest in operating in the area. Their application for a concession to conduct whaling there supported the British authorities' claim to sovereignty there and provided a support base for British activities in the South Orkneys.

Antarctic geo-politics and the modern whaling industry during the First World War

During the First World War, Britain changed its whaling regulations in several ways to support the political interests of the British Empire. British authorities became increasingly aware of the strategic importance of whale oil, and therefore of the entire

⁶³⁹ "Confidential letter from L. Harcourt, to The Governor W.L. Allardyce. November 11, 1912". Vol: D5-1-4-4. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁶⁴⁰ "Letter from the Colonial Secretary, to Mr. Moyes. July 31, 1912". Vol: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁶⁴¹ "Letter from the Governor of the Falkland Islands, to the Honble. Lewis Harcourt. Secretary of State for the Colonies. April 11, 1913". Vol: D5-1-5-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁶⁴² "Letter from W.M. S. Bruce of the Scottish Geographical Laboratory in Edinburgh, to The Secretary of State for the Colonies in London. August 13, 1913". Vol: D5-1-4-4. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams. It is not unlikely that Mr. Bruce negative response was also a result of the previous lack of support from the British authorities for his earlier initiative to claim South Orkney for Britain. When Bruce launched the Scottish National Antarctic Expedition in 1902, he received no financial support from the British authorities, and had to rely almost entirely on the private support of the Coats family. Furthermore, his attempt to gain the support from the Royal Geographical Society in London was met with similar response

⁶⁴³ Dodds. K. *Pink Ice: Britain and the South Atlantic Empire*. 2002. P: 17.

Antarctic region. In February 1916, the Minister of Munitions stated, "*it is of urgent national importance to increase output of best qualities whale-oil suitable for manufacture of glycerine. Propose therefore to grant additional licences to British firms for next season. Request you will relax regulations as to the utilisation of whole carcass, towing, and buoying as far as you may judge necessary to increase output during current season*".⁶⁴⁴

Due to the importance of whale oil to the British war effort, Britain reaffirmed her claim to sovereignty over the area through the Letters Patent of 1917.⁶⁴⁵ Darnley at the Colonial Office argued that it was urgent to establish an interdepartmental committee with the explicit purpose of increasing Great Britain's control over the whaling industry and whale oil production in the Antarctic.⁶⁴⁶ In the report, the committee pointed out that the whaling industry had collapsed in Greenland and Spitsbergen because of excessive hunting, and expressed fear that a similar collapse might occur in the Falkland Island Dependencies. Therefore, Britain made it a national security issue to strengthen its control over the whaling industry in the Antarctic. Doing so served several goals. Firstly, it secured control and access to whale oil. Secondly, by reaffirming British territorial claims and increasing the number of British actors within the whaling industry there, they secured effective occupation.⁶⁴⁷ After the end of the First World War, the importance of the whaling industry and its products were summarised in the Interdepartmental Report of 1920. This report concluded that "*without whale oil. the government would have been unable to carry out both its food and munition campaigns, since the use of this oil in the production of glycerine had freed other fats for edible purposes*".⁶⁴⁸ An additional and closely related motive was the attack by the German navy on the Falkland Islands during the war.

⁶⁴⁴ "Telegram from the Secretary of State, to Governor. February 9, 1916". The Falkland Islands Archive. Vol: SGD/WAH/1. SG&DEP, Whaling – General (1), 1915-1921.

⁶⁴⁵ "British Letters Patent of 1908, and 1917 constituting the Falkland Islands Dependencies". 1948. In: Polar Record. Vol 5, January-July 1948.

⁶⁴⁶ "Report of the Interdepartmental Committee on Research and Development in the Dependencies of the Falkland Islands. April, 1920". The Norwegian Polar Institutes Library, Tromsø. Norway. See also: Dodds. K. J. "Antarctica and the modern geographical imagination (1918-1960)". 1997. P: 50. In: Polar Record. 33 (184). Pp: 47-62.

⁶⁴⁷ "Report of the Interdepartmental Committee on Research and Development in the Dependencies of the Falkland Islands. April, 1920". The Norwegian Polar Institutes Library, Tromsø. Norway.

⁶⁴⁸ "Report of the Interdepartmental Committee on Research and Development in the Dependencies of the Falkland Islands. April, 1920. P: 67". The Norwegian Polar Institutes Library, Tromsø. Norway.

To maximise whale oil production, the British authorities awarded extraordinary operational freedom to whaling companies in the Antarctic. They eased previous demands on full utilisation of the whales, as well as limitations on the number of whale catchers companies could use.⁶⁴⁹ Throughout the war, the market and prices for oils from the Antarctic were not determined by conventional supply and demand of the open market, but by Great Britain.⁶⁵⁰

When the British authorities abandoned their war-time whaling policy and returned to normal conditions in 1920, the market changed rapidly.⁶⁵¹ Buyers of whale oil were expecting a booming demand for oils and fats, which led to a dramatic increase in prices from £57 per ton in 1918, to £67 per ton in 1919, and £88 per ton in 1920. To ensure survival of the whale populations and the whaling industry, the British authorities introduced closed and open hunting seasons. Whaling companies were only allowed to operate during the open season, which lasted from September 15 to May 31.⁶⁵² In this way, Britain used the Antarctic whaling industry as a tool to govern and maintain control over its claims to the Antarctic in the opening decades of the 20th century, up until the collapse of the shore-based whaling industry in the early 1930's.

Conclusions

I have discussed the two local networks used by the modern whaling industry in the Antarctic, as well as the advantages and disadvantages of these. During the early phase of the industry, most companies operated shore-based whaling station in South Georgia, where there were plenty of whales in the surrounding ocean. South Georgia was, perhaps, also less affected by ice than other areas, such as the South Orkney Islands, the South Shetland Islands, and the Ross Sea area. The industry's catches and production peaked during the First World War when demands for whale oil increased for glycerine production. Catches and production also peaked during the 1920s until prices for oils and fats dropped on the market. To counteract this and to continue to generate profits

⁶⁴⁹ "Telegram from the Secretary of State to the Governor. 9 February 1916", The Falkland Islands Archive. Vol: SGD/WAH/1. SG&DEP, Whaling – General (1), 1915-1921.

⁶⁵⁰ Jackson. G. *The British Whaling Trade*. 1978. P: 190.

⁶⁵¹ Jackson. G. *The British Whaling Trade*. 1978. P: 190.

⁶⁵² "Report on the whaling industry in South Georgia for 1920/21. W. Barlas Stipendiary Magistrate, to the Honourable Colonial Secretary in Stanley. June 20, 1921". The Falkland Islands Archive. Vol: STACK. Dependencies. Whaling (3). 1923-1929.

and pay out dividends to their shareholders, the whaling companies sought new ways to move from controlled areas. New technologies within shipbuilding, evaporation, stern slipway, and the whale-claw made the transition from land to the open sea, and the shift from controlled to unrestricted areas, possible.

The development of pelagic whaling was in many ways the beginning of the end for the industry. Whaling returned to its old habits of rapid overexploitation of limited resources over a short period of time. As a consequence, the whaling companies' local networks could no longer generate the necessary profits to maintain the support of their global networks. They essentially removed the foundation of their activities in their ambition to become ever more profitable.

The British ambitions, and the strategies they used, fulfilled the nation's geo-political goals and colonial ambitions of using the modern whaling industry to manifest and consolidate British ownership of large parts of the Antarctic. The British concession and lease system safeguarded controlled exploitation of the whale populations by limiting the companies' hunting capabilities and by enforcing demands on utilisation of the raw materials. Taxation of the oil produced was also important for sustaining the Falkland Islands' government and their work. Finally, by applying to the British Colonial Office and the governor of the Falkland Islands, the whaling companies recognised British ownership and dominion over this part of the Antarctic, which reinforced the British claim. The British claims were not challenged. It is within this context that the following two chapters should be contextualized, understood, and analysed.

7. Prince Olav Harbour whaling station, South Georgia

Introduction

South Georgia is an island located south of the Antarctic convergence, north of 60°S, in an area known as the Subantarctic or peri-Antarctic. The island is mountainous with several peaks exceeding 2,000 metres above sea level.

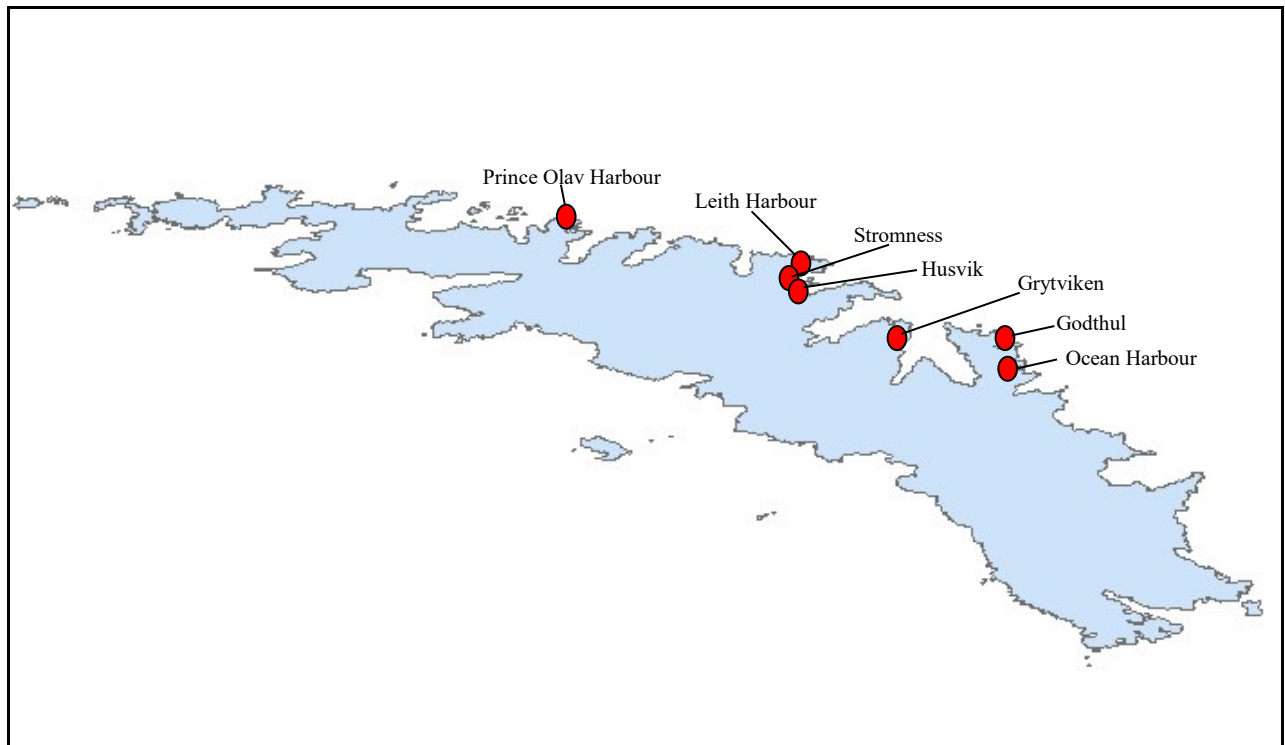


Fig 88. Map of South Georgia. Six whaling stations and one semi-pelagic site (Godthul) have operated at South Georgia: Grytviken (1904–1966 with some interruptions), Stromness (1907–1961 with some interruptions), Husvik (1907–1960 with some interruptions), Prince Olav Harbour (1911–1931), Ocean Harbour (1909–1920), Leith Harbour (1909–1965 with some interruptions), and Godthul (1908–1929). Map data have kindly been provided by the British Antarctic Surveys.

The companies

The whaling companies that operated the station were:

- Irvin and Johnson (1916–1919)
- Lever Bros/Unilever (1920–1931)

During the first decade of the 20th century, both of these companies were international corporations with several individually managed daughter companies. Consequently, it is

difficult to summarise their complete business activities. This chapter is therefore restricted to the company histories that are directly related to the whaling industry, in particular at South Georgia.

To operationalise the whaling project at South Georgia, Irvin and Johnson created the Southern Whaling & Sealing Company in 1911. Lever Bros took the company's name when they bought the station in 1919; therefore, the Southern Whaling & Sealing Company was operational for as long as Prince Olav Harbour was active. To avoid any confusion, I have clarified the ownership where necessary in this chapter.

Irvin and Johnson and the Southern Whaling & Sealing Company

The Southern Whaling & Sealing Company was formed in 1911 by a small group of entrepreneurs that consisted of the British company Richard Irvin & Sons Ltd and the Swede Carl Ossian Johnson. At the time, Richard Irvin & Sons Ltd was a fishing and trawling company based in North Shields in Great Britain.⁶⁵³ At the turn of the 20th century, the company decided to expand to South Africa where they established a daughter company, the African Fishing & Trading Company, in 1903. The company carried out its first fishery surveys off the South African coast using the survey ship Pieter Faure. At the turn of the century, they conducted several surveys and trawling operations in the Agulhas Bank.⁶⁵⁴ It is probable that Richard Irvin & Sons Ltd were motivated to expand their activities to South Africa to exploit these fishing grounds. The Irvin family had total control over The African Fishing & Trading Company, which was managed by Georgia D. Irvin.⁶⁵⁵ The Irvin family commissioned two fish-trawlers (Star of Peace and Star of the South), which formed the basis of the company's activities. According to Greenwood-Johnson et al., the company made good catches but lacked direct access to the South African market. Consequently, the company had difficulties selling its catches and resorted to selling them for low rates at an auction in Cape Town.

⁶⁵³ For further reading on this company, please see Jackson. G. *The British Whaling Trade*. 1979. P: 174f.

⁶⁵⁴ "The History of the Irvin and Johnson Limited, Part 1 & 2. By Greenwood-Johnson.E, Abao.H,Rosenthal. E". Unpublished confidential file. P: 6. The Private Collection of Glenn McIntosh. Australia.

⁶⁵⁵ "The History of the Irvin and Johnson Limited, Part 1 & 2. By Greenwood-Johnson.E, Abao.H,Rosenthal. E". Unpublished confidential file. P: 6f. The Private Collection of Glenn McIntosh. Australia.

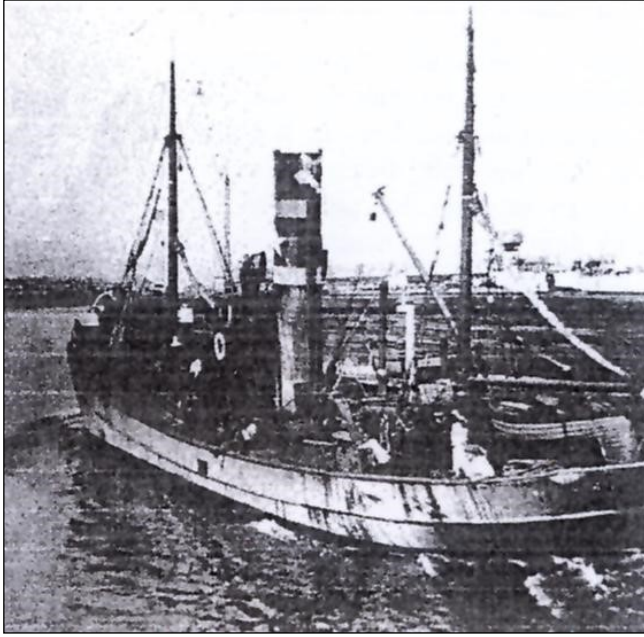


Fig 89. The fish-trawler Star of the South of the African Fishing & Trawling Company. The photo has been published with the kind approval of G. McIntosh.

Carl Ossian Johnson experienced a similar situation. Johnson moved to South Africa from Sweden and decided to stay there and make a living. After running several relatively successful smaller businesses, which included a bicycle factory and a rickshaw service, Johnson invested in the growing fishing industry.⁶⁵⁶ In 1903, he formed his own fishing company and went back to Sweden to buy a fish-trawler. This ship (the Berea) arrived in South Africa at the same time as the Star of Peace and the Star of the South. It appears that Johnson and Irvin first met at an auction in Cape Town and decided to collaborate. Shortly after the auction, they negotiated a contract with the Imperial Cold Storage Company Ltd to store their catches. While George Irvin based his activities in Cape Town and Johannesburg, Johnson conducted his business in Durban and Natal. In 1909, Irvin and Johnson merged their two businesses under the new company name Irvin and Johnson.⁶⁵⁷ Their main motive for doing so was probably to reduce operational costs and to maximise profits. Their new company proved to be a successful merger. Irvin and Johnson quickly secured themselves large market shares and a dominant position within the fishing business in South Africa.⁶⁵⁸

⁶⁵⁶ "The History of the Irvin and Johnson Limited, Part 1 & 2. By Greenwood-Johnson.E, Abao.H,Rosenthal. E". Unpublished confidential file. P: 6. The Private Collection of Glenn McIntosh. Australia.

⁶⁵⁷ "The History of the Irvin and Johnson Limited, Part 1 & 2. By Greenwood-Johnson.E, Abao.H,Rosenthal. E". Unpublished confidential file. P: 10. The Private Collection of Glenn McIntosh. Australia.

⁶⁵⁸ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914. Vol: 2. P: 378.* In: Den Modern Hvalfangst Historie- Opprinnelse og utvikling. 1967.

The marine resources off the African coast also attracted actors from the modern whaling industry. In 1908, the Norwegian whalers Johan Bryde and Jacob J. Egeland formed the South African Whaling Company, and established a whaling station at Bluff in Durban where they had secured a concession.⁶⁵⁹ The following year, Bryde and Egeland divided their business. Bryde continued to operate the station at Bluff and Egeland formed the Union Whaling & Fishing Co. Ltd. The success of these whaling operations attracted other Norwegian whaling industrialists such as M.A. Ingebrigtsen. Johnson was operating in the same area and must have noticed the whaling activities and the number of whales along the coast. The developments within the modern whaling industry, and the potential economic opportunities it represented probably interested Johnson and Irvin. However, they decided to invest in sealing.

In 1909, they formed The Southern Sealing Company Ltd, having managed to secure a 19-year licence to exploit the seal populations at Marion Island and Edward Island south-east of South Africa.⁶⁶⁰ Irvin and Johnson equipped an expedition (led by Johnson) that consisted of 100 workers. Due to a lack of archival sources, the results of the expedition are unknown. In 1910, they managed to convince Richard Irvin & Sons Ltd to establish a whaling station. This gave them access to additional capital and a distribution network in Great Britain to supplement their South African network. The group appears to have kept the whaling project a closed affair, with the Irvin family and Johnson being the only investors. Neither Irvin and Johnson nor Richard Irvin & Sons Ltd anchored the project in their individual businesses. The group generated a capital of £80,000 to materialise their project; £50,000 was paid in cash and the remaining £30,000 was generated by taking mortgages on their private properties and by borrowing on their own personal security.⁶⁶¹ The group set up a plan that allowed them to operate in two different hunting grounds throughout the year.

⁶⁵⁹ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. Vol: 2. P: 436. In: Den Modern Hvalfangst Historie- Opprinnelse og utvikling. 1967.

⁶⁶⁰ "Letter from John Irvin, to the Rt. Hon. Lewis V. Harcourt, M.P. Secretary of State for the Colonies. June 10, 1911". The Falkland Islands Archive. Vol: *F. Confidential despatch book Jan 1909 – Aug 1911. Inward*, No 40. See also: "The History of the Irvin and Johnson Limited, Part 1 & 2. By Greenwood-Johnson.E, Abao. H,Rosenthal. E". Unpublished confidential file. P: 9f. The Private Collection of Glenn McIntosh. Australia, and Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914..* Vol: 2. P: 378. In: Den Modern Hvalfangst Historie- Opprinnelse og utvikling. 1967.

⁶⁶¹ "The History of the Irvin and Johnson Limited, Part 1 & 2. By Greenwood-Johnson.E, Abao. H,Rosenthal. E". Unpublished confidential file. The Private Collection of Glenn McIntosh. Australia.

Operating in two areas was strategic because they could transfer their operations depending on catches. The company already wanted to operate in South Georgia and in Angola. In 1911, they formally applied to the British Colonial Office for a whaling concession in South Georgia, the South Orkney Islands, and the South Shetland Islands.⁶⁶² They argued that their application should be granted because it was a British enterprise.⁶⁶³ The same year, the group applied for and was granted a whaling concession at Porto Alexandre in Angola.⁶⁶⁴ Irvin and Johnson's decision to start whaling generated great public interest in Great Britain where it was seen as a national endeavour to compete with Norwegian companies over the resources in South Georgia.⁶⁶⁵

The investments the group had made in its fleet and local network were premature since the British Colonial Office had not yet granted their application. As discussed in the previous chapter, the Colonial Office had decided to issue a final whaling concession and lease at South Georgia, which generated great interest. Irvin and Johnson's application was denied at first, even though British companies were favoured. In July 1911, the Colonial Office decided that the ninth concession and lease for South Georgia should be granted to a British company,⁶⁶⁶ which opened the door for Irvin and Johnson after Chr. Salvesen & Co. decided to withdraw their application.⁶⁶⁷

Shortly after, Irvin and Johnson received the new decision from the Colonial Office, the company replied and requested that the concession and lease should be issued in the

Jackson. G (1979) have incorrectly argued that the whaling project was exclusively restricted to Irvin & Johnson, and that they only were able to generate £60 000 by issuing shares.

⁶⁶² "Letter from John H. Irvin, to the Under Secretary, Colonial Office in London. March 14, 1911". Also in: "Letter from Harcourt, to the Governor W.L. Allardyce. March 22, 1911". The Falkland Islands Archives. Vol: F. Confidential despatch book. Jan 1909 – Aug 1911, Inward. No 40.

⁶⁶³ "Letter from Richard Irvin & Sons Ltd, to the Under Secretary of State, Colonial Office in London. March 23, 1911". The Falkland Islands Archives. Vol: F. Confidential despatch book. Jan 1909 – Aug 1911, Inward. No 40

⁶⁶⁴ "The History of the Irvin and Johnson Limited, Part 1 & 2. By Greenwood-Johnson.E, Abao.H,Rosenthal. E". Unpublished confidential file. The Private Collection of Glenn McIntosh. Australia.

⁶⁶⁵ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. Vol: 2. P: 378. In: Den Modern Hvalfangst Historie- Opprinnelse og utvikling. 1967.

⁶⁶⁶ "Enclosure to Confidential despatch of 2nd August, 1911. Falkland Islands: Extract from the Minutes of the proceedings of the Executive Council at a meeting held on 31 July, 1911". The Falkland Islands Archives. Vol: G. Confidential despatch book. Jan 1907 – Dec 1911. Outward. No 8.

⁶⁶⁷ "Letter from L. Harcourt, to the Governor W.L. Allardyce. July 1, 1911". The Falkland Islands Archives. Vol: F. Despatch book. Aug 1911 – June 1912. Inward, No 45.

name of the Southern Whaling & Sealing Company, which they officially registered.⁶⁶⁸ Shortly after the British authorities proclaimed, as they had done in 1908,⁶⁶⁹ not to issue or to grant any further applications for concessions and leases in South Georgia.⁶⁷⁰ The Southern Whaling & Sealing Company was consequently not a daughter company of the Irvin and Johnson Company in South Africa, as Tønnesen (1967), Jackson (1978), and Hart (2006) have argued,⁶⁷¹ but one that resulted from the economic partnership of the Irvin family and C.O. Johnson. Securing the necessary licenses was a key task in the company management's construction of a global network for their whaling project. Having accomplished this, the management continued the construction of their local network, which included recruiting knowledgeable and experienced workers for their whaling fleet.

In the winter of 1911, a whaling station owned by the South Georgia Company and Chr. Salvesen & Co was partly destroyed by an avalanche at Leith Harbour, so they moved their station to a new location. The company asked the Colonial Office and the Governor of the Falkland Islands for permission to move their station to Prince Olav Harbour.⁶⁷² When the management of the Southern Whaling & Sealing Company heard about this, they contacted the Colonial Office to confirm that they had first priority to Prince Olav Harbour, and to investigate the validity of Salvesen & Co's request. Irvin and Johnson suspected that Salvesen was not really interested in the site or in moving the station, but rather in obstructing competition over resources.⁶⁷³ A similar situation had occurred between Compañía Argentina de Pesca Sociedad Anónima and Tønsberg Hvalfangeri

⁶⁶⁸ "Letter from Richard Irvin & Sons Ltd, to The Under Secretary of State, Colonial Office in London. June 28, 1911". The Falkland Islands Archives. Vol: F. Confidential despatch book. Jan 1909 – Aug 1911, Inward. No 40.

⁶⁶⁹ ⁶⁶⁹ "Letter from H.B. Cox at the Colonial Office, to The Excellency The Norwegian Minister. May 21, 1908". The Falkland Islands Archive. Vol: Confidential despatch book. May 1927 – Dec 1936. Inward. Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 255. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling. 1969.

⁶⁷⁰ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 253. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling. 1969.

⁶⁷¹ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del I: 1883-1914*. Vol: 2. P: 352. In: Den Modern Hvalfangst Historie- Opprinnelse og utvikling. 1967. Jackson. G. *The British Whaling Trade*. P: 173f. 1978. Hart. I. B. *Whaling in the Falkland Islands Dependencies 1904-1931. A history of shore and bay-based whaling in the Antarctic*. P: 74. 2006.

⁶⁷² "Letter from Chr. Salvesen and Company, to the Under Secretary of State, Colonial Office in London. October 8, 1911". The Falkland Islands Archives. Vol: F. Despatch book. Aug 1911 – June 1912. Inward. No 45.

⁶⁷³ "Letter from J.H. Irvin, to The Under Secretary of State, Colonial Office in London. November 13, 1911". The Falkland Islands Archives. Vol: F. Confidential despatch book. Aug 1911 – June 1913. Inward. No 47.

A/S in 1908.⁶⁷⁴ In this case, priority was given to the whaling company that had applied first for the area in question and had operated at South Georgia the longest.⁶⁷⁵ Under these conditions, Chr. Salvesen & Co's application had the rights to Prince Olav Harbour as it was made earlier. However, C. A. Larsen and A. Lange had operated in the Antarctic even longer than Salvesen, giving them the rights. In the end, however, the Colonial Office and the Governor of the Falkland Islands excluded non-British whaling companies from the competition.

In a letter to the Colonial Office, Irvin and Johnson argued that when a concession and lease is granted, it should apply to a specific harbour – Prince Olav Harbour in this case.⁶⁷⁶ However, Chr. Salvesen & Co's application had priority over Irvin and Johnson's, and the Colonial Office encouraged them to apply for a new site.⁶⁷⁷ In January, Irvin and Johnson sent in a new application for a site at Prince Olav Harbour.⁶⁷⁸ A condition of the concession and lease meant that Chr. Salvesen & Co had to surrender their licence at either Leith Harbour or Allardyce Harbour before they established a new station at Prince Olav Harbour. The Colonial Office demanded that this condition be met by the end of September 1913.⁶⁷⁹ Chr. Salvesen & Co rejected these demands and the offer for Prince Olav Harbour and decided to move their station to a new location in the vicinity.⁶⁸⁰

It appears, therefore, that the Colonial Office favoured British economic activities rather than being anti-British, as Jackson has argued.⁶⁸¹ This strategy may have been politically motivated. The legal status of South Georgia, the South Orkney Islands, the South Sandwich Islands, and the South Shetlands was uncertain at the turn of the 20th century.

⁶⁷⁴ "Letter from G.V. Giddes, to Mr Irvin and Sons. November 18, 1911". The Falkland Islands Archives. Vol: F. Confidential despatch book. Aug 1911 – June 1913. Inward. No 47.

⁶⁷⁵ "Letter from G.V. Giddes, to Mr Irvin and Sons. November 18, 1911". The Falkland Islands Archives. Vol: F. Confidential despatch book. Aug 1911 – June 1913. Inward. No 47.

⁶⁷⁶ "Letter from J.H. Irvin, to The Under Secretary of State, Colonial Office in London. December 14, 1911". The Falkland Islands Archives. Vol: F. Confidential despatch book. Aug 1911 – June 1913. Inward. No 47.

⁶⁷⁷ "Letter from G.V. Fiddes, to Messrs Irvin and Sons. January 27, 1912". The Falkland Islands Archives. Vol: F. Despatch book. Aug 1911 – June 1912. Inward. No 45.

⁶⁷⁸ "Application of Messrs Irvin and Sons for a site at Prince Olav Harbour in South Georgia. January 29, 1912". The Falkland Islands Archives. Vol: F. Despatch book. Aug 1911 – June 1912. Inward. No 45.

⁶⁷⁹ "Letter from G.V. Fiddes, to Messrs Chr. Salvesen and Company. February 2, 1912". The Falkland Islands Archives. Vol: F. Despatch book. Aug 1911 – June 1912. Inward. No 45.

⁶⁸⁰ Basberg. B.L. *The Shore Whaling Stations at South Georgia- A Study in Antarctic Industrial Archaeology*. P: 61. 2004.

⁶⁸¹ Jackson. G. *The British Whaling Trade*. P: 173. 1978.

The Colonial Office probably wanted to give the last concession to a British company to strengthen British presence in the area, especially at the symbolically important Prince Olav Harbour where James Cook had declared South Georgia as British in 1775. The Southern Whaling & Sealing Company had no experience of whaling, whereas Chr. Salvesen & Co had extensive whaling experience; therefore, it may have been considered strategic to favour the latter. Contrary to Jackson (1978), I argue that the Colonial Office's decision was deliberately aimed at strengthening the presence of British whaling companies in the area. During the First World War, British companies were given other advantages, which favoured both the economic interests of the companies and the political motives of the British authorities. This pro-British strategy also included changing the Norwegian sounding name Prince Olav Harbour to Port Gladstone in 1913.⁶⁸²

Lever Bros and the Southern Whaling & Sealing Company

Lever Bros (Unilever from January 1, 1930) was a British company founded in 1894 by William Hasketh Lever and his brother with a stock capital of £1.5 million.⁶⁸³ The two brothers started out as partners in their father's grocery business in the early 1880s. During these years, the two brothers started to manufacture and sell soap under the brand name Sunlight, which became a successful business. After one year, William Hasketh Lever bought his first soap factory, which allowed him to increase production from 20 tons per week to 450 tons per week by 1887.⁶⁸⁴ One of the reasons behind Lever's success was that he realised the buying potential of the working class early on, especially women who were the prime purchasers in the household. The Lever brothers invested the profits they made from selling their shares in the grocery business into the settlement Port Sunlight. They designed Post Sunlight to maximise efficiency, output, and profit in several ways, including the settlement plan, the architecture, and their

⁶⁸² "Letter from L. Harcourt, to the Officer Administering the Government of the Falkland Islands. October 7, 1913". The Falkland Islands Archive. Vol: F. Despatch book Aug 1913 – Mar 1914. Inward. No 50. The name Prince Olav came from the Norwegian Crown Prince Olav (Later King of Norway), while the name Gladstone appears to have originated from a prominent British family with the same name (including a four-time Prime Minister in the nineteenth century, a number of Members of Parliament, in addition to other prominent political positions).

⁶⁸³ Wilson. C. *The History of Unilever: A Study in Economic Growth and Social Change*. Vol: 1. P: 45. 1954.

⁶⁸⁴ Wilson. C. *The History of Unilever: A Study in Economic Growth and Social Change*. Vol: 1. P: 32. 1954.

contracts with employees.⁶⁸⁵ By 1890, Lever Bros had expanded into a multinational company, with agencies and plantations across Europe, North America, Africa, and Australia. By 1913, Lever Bros had 64 associated companies, and by 1920 this had grown to 158 associated companies with a total capital of £130 million. The rapid expansion and multinational structure of Lever Bros makes it difficult to give an overview of the entire company and its activities.⁶⁸⁶

I will focus on the company's involvement in the modern whaling industry. One of Lever Bros' primary motives for investing in the whaling industry was their need for cheap raw materials to produce margarine and soaps. The British government asked Lever Bros to establish a margarine factory prior to the outbreak of the First World War, so they set up the Planters Margarine Company together with Joseph Watson & Sons Ltd.⁶⁸⁷

The number of margarine factories was increasing across Europe and analysts expected that oil prices would increase rapidly as the competition for raw materials increased. During the first two decades of the 20th century, Lever Bros expanded their activities. They strategically secured control over raw materials for margarine production.⁶⁸⁸ During the same period, Lever Bros controlled an increasing part of the market in Europe and Africa, which culminated in their purchase of 50% of the shares in De Nordiske Fabrikker (De-No-Fa) and the South African Soap Makers Association in 1915.

⁶⁸⁵ The worker houses at Port Sunlight were designed in a variety of styles, and where Lever employees could live in accordance to Levers Rulebook which applied throughout the area. Here the workers could stay and work as long as they were able to maintain their jobs- if they lost it for whatever reason, that also lost their accommodation rights. In 1909, Lever introduced a new strategy he called "co-partnership" in which those that qualified for it held no monetary value; instead they were given to share a small part of any eventual economical dividend the company made. This system, which was liable for cancellation if the worker displayed negligence of duty, dishonesty or immoral behaviour, was aimed at increasing production as it gave the workers the feeling of being a part of the business- much like the salary system within the modern whaling industry. For further reading see: Unilevers World. CIS. Anti-Report. No 11. 1975.

⁶⁸⁶ For more information on Lever Bros/ Unilever, please see the works by: C. Wilson. *The History of Unilever: A Study of Economic Growth and Social Change*. Vol 1 & 2. 1954. Fieldhouse. D.K. *Unilever Overseas: The Anatomy of a Multinational 1895-1965*. 1978.

⁶⁸⁷ Jackson. G. *The British Whaling Trade*. P: 184. 1978.

⁶⁸⁸ In 1911, they established the Premier Whaling Company. In 1912, they established the Eastern Whaling Company and erected whaling stations at Bluff Cove in Durban and at Delgoa Bay, both in South Africa. See: Fieldhouse. D.K. *Unilever Overseas: The Anatomy of a Multinational 1895-1965*. 1978. P: 104. And Jackson. G. *The British Whaling Trade*. P: 210. 1978.

⁶⁸⁹ According to Fieldhouse and Jackson, the motive behind this acquisition was to regulate minimum prices and selling terms to maintain a profitable market.⁶⁹⁰

The competition between European soap and margarine producers such as Lever Bros, Crosfield's, Jurgens', Van den Bergh, and Schicht's increased the prices of raw materials. This created an economic incentive for industrialists to either establish whaling companies or find ways to increase production at existing stations. Several whaling companies joined forces and established the Whalers' Assurance Union in 1911 and the Whalers' Union in 1912.⁶⁹¹ The soap and margarine producing companies reacted by doing the same. Anton Jurgens initiated the Whale Oil Pool in an attempt to counteract the situation. The Whale Oil Pool was not only created to prevent soap and margarine producers from dealing directly with the suppliers; it also aimed to secure and distribute the world's supply of whale oil within the parties of the Pool itself.⁶⁹² By removing expensive middle hands, the soap and margarine producers hoped to reduce the prices of raw materials,⁶⁹³ while the whaling companies wanted to hold on to their produce and get better prices. The cooperation between the buyers in the Whale Oil Pool encouraged whaling companies to increase their cooperation to prevent the market collapsing, and whale oil prices dropped.⁶⁹⁴

The threat of war and slow developments at Lever Bros factories in the Belgian and French Congo combined with declining trade in Japan, China, South Africa, Sweden, Austria, and the USA made Lever Bros anxious to try and secure a sustainable supply of raw materials for their production.⁶⁹⁵ The First World War broke out, however, before the soap and margarine producers managed to secure long-term contracts with the whaling industry. This meant that Lever Bros were cut off from the lucrative markets in Germany, Austria-Hungary, Belgium, and France. William Hesketh Lever tried to

⁶⁸⁹ Jackson. G. *The British Whaling Trade*. P: 180. 1978.

⁶⁹⁰ Fieldhouse. D.K. *Unilever Overseas: The Anatomy of a Multinational 1895-1965*. P: 104. 1978. See also: Jackson. G. *The British Whaling Trade*. P: 107. 1978.

⁶⁹¹ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. Vol: 2. P: 519f. In: Den Modern Hvalfangst Historie- Opprinnelse og utvikling. 1967.

⁶⁹² Wilson. C. *The History of Unilever: A Study in Economic Growth and Social Change*. Vol: 1. P: 138. 1954.

⁶⁹³ Wilson. C. *The History of Unilever: A Study in Economic Growth and Social Change*. Vol: 2. P: 119. 1954. Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. Vol: 2. P: 510. In: Den Modern Hvalfangst Historie- Opprinnelse og utvikling. 1967.

⁶⁹⁴ Jackson. G. *The British Whaling Trade*. P: 176f. 1978.

⁶⁹⁵ Wilson. C. *The History of Unilever: A Study in Economic Growth and Social Change*. Vol:1. P: 209f. 1954.

persuade the British government to allow him to export to these markets despite the situation, but the British government refused because they wanted to keep all available glycerine for the war effort.⁶⁹⁶ The government argued that glycerine produced by soap manufacturers was of national importance and that the soap industry needed to be strictly controlled by the state rather than private individuals with purely economic motives. Shortly after the British government ceased control of production, the supply of raw materials began to decline, especially after Dutch margarine manufacturers stored large amounts of oil in anticipation of a shortage of oil and fats on the market.⁶⁹⁷

In early 1916, the British authorities asked the soap producers to significantly increase glycerine production. The demand for raw materials exceeded supply, but the prices for raw materials did not increase because the British government classified whale oil as contraband, and in 1916 restricted the export of whale oil produced in the British Dependencies in the Antarctic to Great Britain.⁶⁹⁸ For whaling companies operating under the British concession and lease system in the Antarctic, the open market was transformed into a controlled market where the buyer determined prices. On February 25 1916, three soap makers in Great Britain made an agreement with the Minister of Munitions on the purchase, distribution, and production of glycerine from whale oil in Great Britain.⁶⁹⁹

Towards the end of the war, Lever Bros sought ways to increase the use of whale oil in their production. They stored as much whale oil as possible, motivated by a belief that there would be a shortage of oil and increasing prices once the market opened. To

⁶⁹⁶ Wilson. C. *The History of Unilever: A Study in Economic Growth and Social Change*. Vol: 1. P: 217. 1954.

⁶⁹⁷ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 140f. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*. 1969.

⁶⁹⁸ "Ordinance No 1, January 27, 1915. An Ordinance to amend the Whale Fishery Ordinance, 1908, with regard to the export of whale-oil", and "Ordinance No 10, December 2, 1915. Falkland Islands. An Ordinance to prohibit by regulations the export of whale-oil, except to the United Kingdom". The Falkland Islands Archive. Vol: SG & DEP. Whaling – General. Vol 1. (1915 – 1921). "Letter to The Norwegian Whaling Union, from The Royal Foreign Ministry in Kristiania. August 25, 1914", and "Letter to the Norwegian Whaling Union, from The Royal Foreign Ministry in Kristiania. December 10, 1914" Archive: Hvalfangerforeningen. Diverse Pakkesaker. Vol 4. 1913-1920. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁶⁹⁹ "An agreement made the Twenty-fifth day of February 1916 between His Majesty's Minister of Munitions of War, and Lever Brothers Limited, Joseph Crosfields & Sons Limited and Joseph Watsons & Sons Limited". Archive: Hvalfangerforeningen. Diverse Pakkesaker. Vol: 3. 1912-1922. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway. Whale-oil were controlled and distributed by Messrs. Meade King & Robinson of Liverpool, Lever Bros received 47.4%, while Joseph Crosfield & Sons Limited received 31.6%, and Joseph Watson & Sons Limited 21%

increase their hydrogenation capability, the company invested more in oil shares to prevent post-war competition over oil. According to Jackson, the company had become dependent on whale oil by 1918.⁷⁰⁰

Lever Bros was not the only actor on the market that regarded the post-war situation as a bright one for whaling. The Norwegian Whaling Union held a similar view, proclaiming that they “*saw a bright future for the whaling industry which spoke of a new era*”.⁷⁰¹ This belief was founded on the assumption that the large demand for whale oil would continue after the war, and that new markets would open up in mid- and eastern Europe. The reopening of traditional markets in Germany and elsewhere was expected to increase the demand and competition for whale oil and rising prices were expected. Lever Bros tried to safeguard their dominant position in the market by incorporating additional whale oil producing companies into their supply network to secure a constant flow of whale oil without having to pay excessive prices.

At a meeting with John Irvin in the summer of 1919, Lever Bros initiated negotiations to purchase the Southern Whaling & Sealing Company. Jackson (1978) suggested that one motive for purchasing this whaling company was its economic success during the war; it was economically more successful at whaling than Salvesen in the post-war seasons.⁷⁰² There are no sources to support that this was true, or that it was one of the arguments for buying the company. The available sources indicate that the Southern Whaling & Sealing Company had suffered substantial financial losses in South Georgia partly due to bad investments, poor organisation, and lack of social control. I will analyse the local network to show how and why production at Prince Olav Harbour suffered. Our knowledge of the rationale and negotiations between Irvin and Johnson and Lever Bros are limited due to lack of sources.

The value of the Southern Whaling & Sealing Company, including the whaling station at Prince Olav Harbour and the fleet was, according to Jackson (1978), estimated by Lever

⁷⁰⁰ Jackson. G. *The British Whaling Trade*. P: 183. 1978.

⁷⁰¹ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 179. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*. 1969.

⁷⁰² Jackson. G. *The British Whaling Trade*. P: 193. 1978.

Bros to be £440,000.⁷⁰³ Lever Bros offered the management of Irvin and Johnson £360,000 for the entire company and all its assets, and this offer was accepted.⁷⁰⁴ Tønnesen (1967) argued that the Southern Whaling & Sealing Company was not sold until Lever Bros offered to buy 550,000 shares valued at £1 for £4 per share (£2,200,000).⁷⁰⁵ Unfortunately, Tønnesen does not support his claim with any references other than Bystrøm, who does not mention a price in his book.⁷⁰⁶ A number of sources indicate that the negotiations between the two companies likely went on for at least one year, and Johnson worked for one year at Lever Bros in England. In 1920, the year after Lever Bros had purchased the Southern Whaling & Sealing Company, Irvin and Johnson were involved in a workers conflict at Prince Olav Harbour.⁷⁰⁷ There are strong indications that Irvin and Johnson and Lever Bros continued their business relations after the Southern Whaling & Sealing Company was sold in 1919.



Fig 90. Prince Olav Harbour whaling station as it looked when Lever Bros took over ownership. The photo has been published with the kind approval of Kommendør Chr. Christensen's Hvalfangstmuseum in Norway.

⁷⁰³ Jackson. G. *The British Whaling Trade*. 2nd edition. P: 174. 2005. This estimate included the whaling station at Prince Olav Harbour, including three whale catchers, the S/S Woodville, and the Sound of Jura.

⁷⁰⁴ Jackson. G. *The British Whaling Trade*. 2nd edition. P: 174. 2005.

⁷⁰⁵ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. Vol. 2. P: 451. In: *Den Modern Hvalfangst Historie- Opprinnelse og utvikling*. 1967.

⁷⁰⁶ Bystrøm. E. *Et år på Syd-Georgia*. 1944. The author worked for Chr. Salvesen & Co, and took part in the deconstruction of installations at the former whaling station at Prince Olav Harbour; an event which he vividly describes in the book.

⁷⁰⁷ Børresen. D.I. *The boys will die like flies; Afrikanere på hvalfangst I Antarktis 1908-1920*. P: 91. In: *Kolonitid-Nordmenn på eventyr og big business I Afrika og Stillehavet*. Editors: Kjaerland. K.A and Rio. K.M. 2009.

Constructing the local networks

In the first section of this chapter, I have shown how and why the industrialists Irvin and Johnson and Lever Bros/Unilever built the global networks that enabled them to build their local network. Based on fieldwork data and archival sources, I will explain how and why the local network was constructed, designed, and adapted to the environmental and contextual circumstances at South Georgia, and the consequences of these choices. I will also discuss how production at the whaling station was organised and how the companies used social strategies to maintain control. More importantly, I will discuss whether their whaling projects failed because of problems in the global network or the local network.

The construction of the local network at Prince Olav Harbour and South Georgia can be divided into three phases:

- Phase one (Irvin and Johnson 1911–1916)

During this period, Irvin and Johnson operated with a semi-pelagic factory ship and built some installations on shore.

- Phase two (Irvin and Johnson 1916–1919)

A whaling station was constructed at Prince Olav Harbour and whaling operations began.

- Phase three (Lever Bros/Unilever 1920–1931)

Completion of the whaling station, operation, and closure in 1931.

Phase one (Irvin and Johnson 1911–1916)

Irvin and Johnson appeared to be confident that their application for South Georgia would be approved, since they started investing their capital in the project before getting permission from the Colonial Office and the Governor of the Falkland Islands. Within a few months they had invested in a fleet that would form the basis of their whaling operations. In February 1911, the company bought the sailing ship *Sound of Jura* for £2,750, and in April they bought the *S/S Restitution* in Great Britain for

£21,000.⁷⁰⁸ In addition, the company ordered three whale catchers from the Smiths Dock Company in Middlesbrough, which were delivered in April. Together with the schooner Seabird, which Irvin and Johnson already owned, these ships represented their whaling fleet – and what was intended to be the basis of their local network. After the purchase of the S/S Restitution, the company sent the ship to Norway to be re-built into a factory ship at Framnæs Mek. Verksted.⁷⁰⁹ Here, the ship was fitted with ten pressure cookers and four open cookers, three cooling tanks, three steam winches, and internal tanks for storing the whale oil it produced.⁷¹⁰ To comply with the British authorities' demands on full utilisation of the whales, the company equipped the ship with a guano plant capable of processing 100 tonnes of residue per day, as well as electrical lighting and a wireless telegraph that allowed the ship to communicate with the fleet.⁷¹¹ The Sound of Jura and Seabird were re-built and fitted with internal engines and fixed tanks, which enabled them to transport whale oil.⁷¹² The decision to fit two of their three whale catchers with diesel engines was unconventional since other whaling companies used steam-powered whale catchers. Despite this, the two whale catchers (C.O.J and G.D.I) were fitted with diesel engines. The third catcher (T.W.I) was fitted with a conventional steam engine. Diesel has more energy per unit than coal, which in theory gave higher speed and range without having to refuel. It also meant that fuel took up less space and transport volume per energy unit than coal did. Diesel engines were, however, relatively untested on ships, but many saw the advantages of diesel and it became the main form for propulsion on ships. The decision to equip one of the catchers with a conventional

⁷⁰⁸ "Letter from John Irvin, to the Rt. Hon. Lewis V. Harcourt, M.P. Secretary of State for the Colonies. June 10, 1911". and in "Letter from Richard Irvin & Sons Ltd, to the Under Secretary of State, Colonial Office in London. March 23, 1911". The Falkland Islands Archive. Vol: F. Confidential despatch book. Jan 1909 – Aug 1911, Inward. No 40

⁷⁰⁹ Norsk Fiskeritidende. 1912. P: 11. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁷¹⁰ "The History of the Irvin and Johnson Limited, Part 1 & 2. By Greenwood-Johnson.E, Abao.H,Rosenthal. E". Unpublished confidential file. P: 12. The Private Collection of Glenn McIntosh. Australia.

⁷¹¹ "Letter from John Irvin, to the Rt. Hon. Lewis V. Harcourt, M.P. Secretary of State for the Colonies. June 10, 1911". The Falkland Islands Archive. Vol: F. Confidential despatch book. Jan 1909 – Aug 1911, Inward. No 40.

⁷¹² The purchase and rebuild of these ships consumed a substantial amount of the available capital. The S/S Restitution cost £21 000, and its rebuilding at Framnæs Mek Verksted cost another £7000, while the commission and build of the three whale catchers (C.O.J, T.W.I and G.D.I) cost £20 400. The Sound of Jura including fitting it with internal tanks and an engine cost £8850, and similar rebuilt of the SeaBird cost £3600. Adding up to a total initial expenditure of £60 850. This amount excluded additional small investments in small motor boats, 1000 wooden barrels, 30 000 bags for guano and insurances which the company purchased. In: "Letter from John H. Irvin, to the Rt. Hon. Lewis V. Harcourt. Secretary of State for the Colonies, London. June 10, 1911". The Falkland Islands Archives. Vol: Confidential despatch book. Jan 1909 – Aug 1911, Inward. No 40.

steam engine was perhaps motivated by the fact that diesel engines were untested and that they did not want all catchers to be grounded by technical problems in the Antarctic waters.

The company probably chose to base their whale oil production on a floating factory because they planned to conduct whaling operations in two regions: South Africa and South Georgia. Using a floating factory meant they could move between the two areas and maintain full utilisation in compliance with British demands.

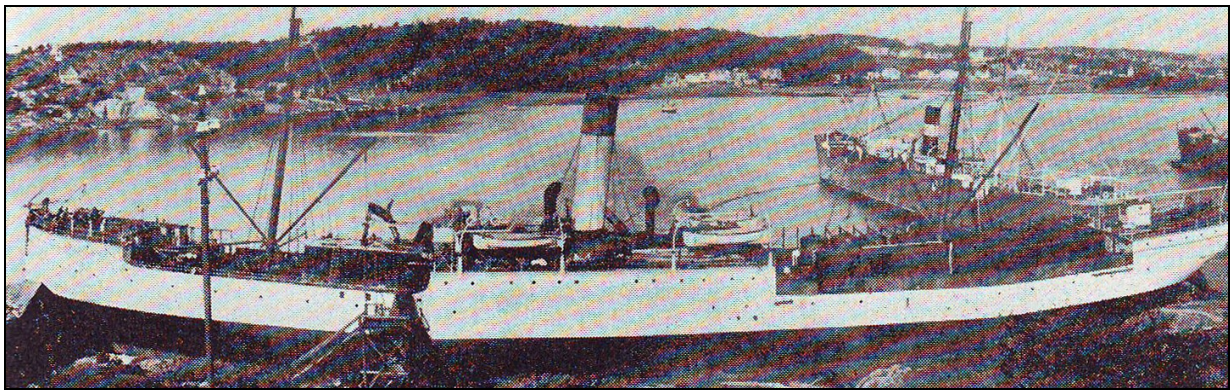


Fig 91. The S/S Restitution being converted into a factory ship at Framnæs Merk Verksted in Norway during the spring of 1911.⁷¹³

Although the global networks of the whaling companies were multinational, funded, and managed by industrialists and capitalists from Great Britain, Argentina, Chile, and Norway, the workers and managers of the whaling stations were largely Norwegian. Hiring experienced workers and managers achieved a high output with minimum risks, and avoided the need for training and educating personnel. In Vestfold and other places in Norway they had vast whaling experience. The Southern Whaling & Sealing Company set up a hiring office in Sandefjord in Vestfold in Norway and hired Consul Olsen as their agent to secure experienced, reliable workers and a manager.⁷¹⁴ Olsen hired Nils A. Andersen as manager and captain of the S/S Restitution.⁷¹⁵ Andersen had experience of

⁷¹³ The photo has been scanned from Tønnesen, J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. Vol: 2. P: 379. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*. 1967.

⁷¹⁴ "The History of the Irvin and Johnson Limited, Part 1 & 2. By Greenwood-Johnson.E, Abao.H,Rosenthal. E". Unpublished confidential file. P: 12. The Private Collection of Glenn McIntosh. Australia.

⁷¹⁵ "The History of the Irvin and Johnson Limited, Part 1 & 2. By Greenwood-Johnson.E, Abao.H,Rosenthal. E". Unpublished confidential file. P: 12. The Private Collection of Glenn McIntosh. Australia.

the whaling industry, having started his career in northern Norway at the turn of the century.⁷¹⁶

The Southern Whaling & Sealing Company initiated their whaling operations at South Georgia during the spring of 1912, which was late in the season. Irvin and Johnson had designed their company to be flexible to meet the demands of operating in two different regions. Their factory ship also had to be designed and equipped to have full utilisation capability, in compliance with British ambitions to control the west Antarctic. In addition, the whole whaling project had to be organised and designed to operate under harsh climatic circumstances and generate profits. Their late arrival was partly caused by technical problems with the whale catchers' diesel engines on the voyage from Great Britain.

The 1911–1912 hunting season was generally good for most companies that operated in South Georgia. From November until February, there were plenty of whales in the waters off the island, and several companies finished the season early.⁷¹⁷ Most of the catches this season (95%) were humpback whales.⁷¹⁸ Hunting from an abundance perspective and exploiting whales faster than they could rejuvenate was not sustainable. These concerns were discussed in contemporary newspapers such as *Norsk Fiskeritidende* and *Hvalfangst Tidende* where people called for increased restrictions to prevent overexploitation.⁷¹⁹ In spite of this, the whaling industry produced 106,800 barrels of whale oil in South Georgia in 1911–1912, which was more than the total global production of 1908.⁷²⁰ The Southern Whaling & Sealing Company managed to produce 9,000 barrels of whale oil during their first season, and an unknown amount of guano. There were, according to Risting, frequent storms and large swells during March and April, which occasionally made hunting impossible.⁷²¹ This may explain why Andersen decided to close the hunting season at South Georgia early and sail for South

⁷¹⁶ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. Vol: 2. P: 323 & 378. In: *Den Modern Hvalfangst Historie- Opprinnelse og utvikling*. 1967.

⁷¹⁷ *Norsk Fiskeritidende*. 1912. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁷¹⁸ *Norsk Fiskeritidende*. 1915/16. P: 23. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁷¹⁹ *Norsk Hvalfangsttidende*. 1911. Also in *Norsk Fiskeritidende*. 1912. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁷²⁰ *Norsk Hvalfangsttidende*. 1911. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁷²¹ Risting, S. *Av Hvalfangstens Historie*. P: 376. 1922.

Africa to start the second phase of the hunting season. The company's South Georgia production was sent to Great Britain aboard the *Sound of Jura*.⁷²²

Over the period 1911–1915, Irvin and Johnson re-organised their whaling project. After the first season, the management realised that the hunting seasons in the two areas overlapped and that they had to improve their hunting and processing capability to maximise catches and output. With their factory ship *S/S Restitution* and their three catchers, the company lost valuable hunting time transferring the fleet from one region to the other. The higher number of fin and blue whales in South Georgia compared with the African west coast represented an opportunity to increase output and profit. To maximise the hunting season in both areas in 1912–1913 and onwards, and to successfully exploit fin and blue whales in South Georgia, Irvin and Johnson commissioned three new whale catchers, which were larger than the ones they already had.⁷²³ The same year, Irvin and Johnson developed their African activities further; they secured an additional whaling concession in Durban, South Africa⁷²⁴ and established a whaling station at Porto Alexandre in Angola where they also had a concession.⁷²⁵

With a fleet of six whale catchers, one factory ship, and a whaling station, Irvin and Johnson increased their operational flexibility to exploit whales in two hunting areas. This had an immediate effect on the company's production, which increased from 25 barrels of whale oil per whale in the 1911–1912 season, to 35 barrels per whale in the 1912–1913 season.⁷²⁶ The company increased its production in South Georgia by 10%

⁷²² *"The History of the Irvin and Johnson Limited, Part 1 & 2. By Greenwood-Johnson.E, Abao.H, Rosenthal. E"*. Unpublished confidential file. The Private Collection of Glenn McIntosh. Australia.

⁷²³ These were the *Southern Cross*, the *Southern Sea* and the *Southern Sky* [110,7 feet, 73 Hkr and 174 tons, and were all considerably larger than *C.O.J.*, *G.D.I.*, and the *T.W.I* [99,5 feet, 58 Hkr and 137 tons. At the same time two of the older catchers that had been fitted with diesel engines, were sent to Great Britain to be rebuilt and fitted with conventional steam engines. The failed experiment cost the company £7244. "Letter from the Under Secretary of State, to the Secretary Board of Agriculture and Fisheries. August 25, 1915". The Falkland Islands Archives. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964). According to Hart (2006, P: 74), the crews found it difficult to start the engines in the cold.

Risting, S and Dahl, J. *Hvalfangstflaaten. The Whaling Fleet*. P: 36f. 1916.

⁷²⁴ Risting, S. *Av Hvalfangstens Historie*. P: 493. 1922.

⁷²⁵ *"The History of the Irvin and Johnson Limited, Part 1 & 2. By Greenwood-Johnson.E, Abao.H, Rosenthal. E"*. Unpublished confidential file. P: 12. The Private Collection of Glenn McIntosh. Australia. See also: Tønnesen, J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. Vol: 2. P: 448 and 456. In: *Den Modern Hvalfangst Historie- Opprinnelse og utvikling*. 1967.

⁷²⁶ *Norsk Fiskeritidende*. 1914. P: 66. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

to 10,000 barrels of whale oil in 1913.⁷²⁷ This figure rose to 12,582 barrels of whale oil and 5,000 bags of guano in the 1913–1914 season, to 20,120 and 2,385 bags of guano in the 1914–1915 season, and to 31,000 barrels and 600 bags of guano in the 1915–1916 season.⁷²⁸

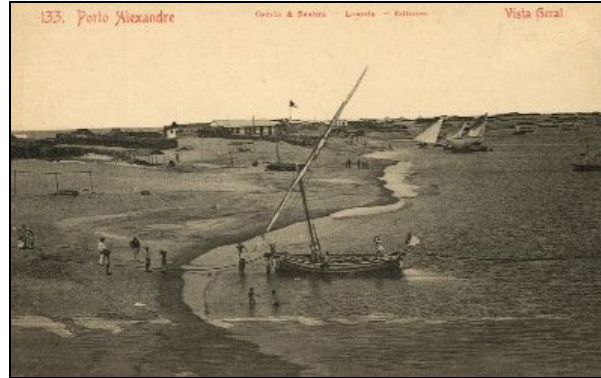
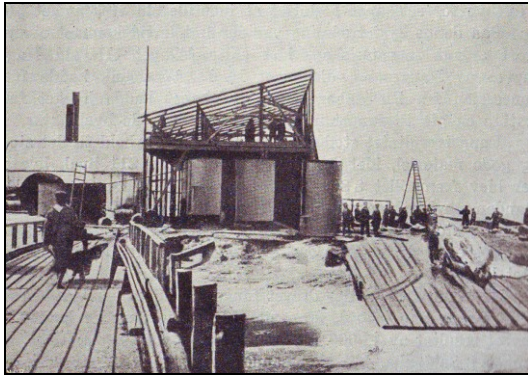


Fig 92 and 93. The Southern Whaling & Sealing Company's whaling station at Porto Alexandre in Angola. The company erected this station in 1913 and operated it for two consecutive seasons.⁷²⁹

Prices for whale oil had remained stable as the number of hardening factories increased in Norway, Great Britain, Germany, Austria-Hungary, Italy, and elsewhere, creating demand for this raw material. Despite this, the Southern Whaling & Sealing Company was unable to make an economic success of their whaling projects. By the autumn of 1915, their total losses were £51,454, which included £11,500 for depreciation of their investments and £7,244 for rebuilding two of the company's whale catchers.⁷³⁰ Up until that point, Irvin and Johnson had invested approximately £90,000 in the project. Tønnesen (1967) argues that the primary reason for these losses was Irvin and

⁷²⁷ Norsk Fiskeritidende. No 11. November 1929. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway. In the end of the 1913 season, the *Sound of Jura* was sent to Glasgow with the production. On her way north, the ship was caught in a severe storm which broke the masts leaving her adrift in the South Atlantic. The ship was eventually rescued by the British steamer *Uskmoor*, and towed to St. Vincent. For further reading, see: Norsk Fiskeritidende. No 7, July 1913. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁷²⁸ "Letter from Richard Irvin & Sons Limited, to the Under Secretary of State, Colonial Office. August 18, 1915", and in "Edw. B. Binnie, Stipendary Magistrate. Whaling Report. May 15, 1915, to the Honourable The Colonial Secretary, Falkland Islands". Falkland Islands Archives. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964). See also Norsk Hvalfangsttidende. No 11, November 1929. and Norsk Fiskeritidende. 1915/16. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁷²⁹ The photo to the right has been scanned from Risting. S (1922), P: 507. The photo on the left has been published with the kind approval of G. McIntosh.

⁷³⁰ "Letter from Henry Lambert for the Secretary of State, to the Secretary Board of Agriculture and Fisheries. August 25, 1915". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

Johnson's lack of experience.⁷³¹ But did this whaling project fail because the network builders were inexperienced or because of problems in their global or local networks?

Irvin and Johnson had established and operated fishing and sealing projects in the past with success. However, they had no experience organising industrial projects in remote regions such as South Georgia. If they had, they would have known how other whaling companies were organising their production and what technologies they were using. The Southern Whaling & Sealing Company was managed and run by experienced and competent people. The main problem was organisation. Poor planning meant the hunting seasons overlapped, which reduced catches and production. There are unfortunately few archival sources that give insight into the company's daily activities and organisation at South Georgia during the first few years.

The size of S/S Restitution may have contributed to Irvin and Johnson's economic failure. However, this is questionable since the ship was primarily a production platform and the Sound of Jura and Seabird were used to store the whale oil. They had been rebuilt and fitted with internal engines and fixed tanks with this in mind.⁷³² I believe that the main problem with S/S Restitution was its processing capacity, which was limited to only 14 cookers. In addition, whales were flensed alongside the ship, therefore the ship probably had difficulties keeping up with the whale catchers. Fieldwork done during the spring of 2009 also showed that Prince Olav Harbour is relatively exposed to winds and swell, which would have made flensing problematic. Limited cooking capability on S/S Restitution combined with difficult flensing created a bottle neck for production and explains why Irvin and Johnson finally decided to operate from a shore-based whaling station.

⁷³¹ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. Vol: 2. P: 377. In: Den Modern Hvalfangst Historie- Opprinnelse og utvikling. 1967.

⁷³² The purchase and rebuild of these ships consumed a substantial amount of the available capital. The S/S Restitution cost £21 000, and its rebuilding at Framnæs Mek Verksted cost another £7000, while the commission and build of the three whale catchers (C.O.J, T.W.I and G.D.I) cost £20 400. The Sound of Jura including fitting it with internal tanks and an engine cost £8850, and similar rebuilt of the SeaBird cost £3600. Adding up to a total initial expenditure of £60 850. This amount excluded additional small investments in small motor boats, 1000 wooden barrels, 30 000 bags for guano and insurances which the company purchased. In: "*Letter from John H. Irvin, to the Rt. Hon. Lewis V. Harcourt. Secretary of State for the Colonies, London. June 10, 1911*". The Falkland Islands Archives. Vol: F. Confidential despatch book. Jan 1909 – Aug 1911, Inward. No 40.

Another contributing factor to Irvin and Johnson's financial failure was the outbreak of the First World War in the summer of 1914. At first, the war restricted the development of the Antarctic whaling industry. Following the introduction of export bans on coal from Great Britain, many companies experienced problems equipping expeditions.⁷³³ In addition to this, the war changed the market for whale oil. Before the war, whaling companies had been able to sell their produce at stable prices to margarine factories. During the first few months after the outbreak of the war, the market stood still. This was replaced with frantic activity as hardening factories tried to make contracts with whaling companies to secure several years of whale oil supply. The whaling companies saw an opportunity to force prices up and held back their production. However, this strategy failed since the market for whale oil almost disappeared after the British government declared whale oil as contraband in August 1914.⁷³⁴ Great Britain became the sole buyer of whale oil after issuing the Whale Fishery Ordinance of 1915, which banned the export of whale oil to other nations.⁷³⁵

Great Britain's motive for controlling the Antarctic whaling grounds was twofold. Firstly, it was important to secure oil and fats for edible purposes. Secondly, whale oil contains glycerine that could be used to produce explosives. With the Whale Fishery Ordinance of 1915, conventional market mechanisms no longer applied. The whaling companies' feared that the British authorities would enforce a fixed price for whale oil that would devastate their economy as the war had increased operational costs. Although the price for whale oil increased during the war – from £21 per ton in 1914 to £57 per ton in 1918⁷³⁶ – the declining value of the British currency worsened the economic situation for most whaling companies, who paid their workers in other currencies.⁷³⁷

⁷³³ Norsk Fiskeritidende. 1915/16. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁷³⁴ "Brev fra Det Kgl. Utenriksdepartementet, til den Norske Hvalfangerforeningen. August 25, 1914". Hvalfangerforeningen. Diverse Pakkesaker. Vol: 4, 1913-1920. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁷³⁵ "Ordinance No 10, December 2, 1915. An ordinance to prohibit by Regulations the export of whale oil, except to the United Kingdom". The Falkland Islands Archive. Vol: SG & DEP. Whaling – General. Vol 1. (1915 – 1921).

⁷³⁶ Hart. I. B. *Whaling in the Falkland Islands Dependencies 1904-1931. A history of shore and bay-based whaling in the Antarctic*. P: 316. 2006.

⁷³⁷ Galteland. O. *Hvalfangst på Syd-Georgia – A/S Sandefjords Hvalfangerselskab / A/S Vestfolds fangst fra landstasjonen Strømnes 1906–1931*. P: 130f. 2009.

Irvin and Johnson tried to counteract the effects of the war by expanding the capacity of the Southern Whaling & Sealing Company. They submitted an application to the Secretary of State for a second concession at South Georgia and the rights to use a fourth whale catcher to increase the company's production capacity.⁷³⁸ Richard Irvin underlined the importance of their activities in ensuring that whaling operations in British waters remained in the hands of British nationals rather than foreigners. Such a project, they argued, should be backed by the British government as the company employed a large number of people in Great Britain and in Africa.⁷³⁹

According to the British magistrate of South Georgia, the company's losses were not caused by having only one concession but by the late arrival of their whaling fleet to South Georgia every year. The magistrate added that the company had twice the capital of competing whaling companies, who were still able to pay substantial dividends to their shareholders. The magistrate saw no reason to approve their application, other than further benefits for Great Britain⁷⁴⁰ and the Colonial Office turned them down. The company was granted the right to use a fourth whale catcher for the upcoming season at a cost of £100.⁷⁴¹

This was not enough, however, to compensate for the weakness in their local network. The S/S Restitution restricted the company's production and profits at South Georgia. The company saw two different ways of dealing with this situation – either to cease their whaling operations in the area or to redesign and reorganise their local network. Despite their huge losses in South Georgia, they opted to reorganise their local network. This decision may have been influenced by the following statement from the British Minister of Munitions in early 1916: “ *it is of urgent national importance to increase the output of best quality whale oil suitable for the manufacture of glycerine. I propose,*

⁷³⁸ “Letter from Henry Lambert for the Secretary of State, to the Secretary Board of Agriculture and Fisheries. August 25, 1915”. The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁷³⁹ “Letter from Richard Irvin & Sons Limited, to the Under Secretary of State, Colonial Office in London. August 18, 1915”. The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁷⁴⁰ “...there is no substantial ground local to South Georgia upon which Mr. Irvin's application could be supported, and that, if it is to be entertained, that must be on Imperial grounds, such as the public services to the firm, the need for assisting it on account of disturbance in the fish business, or the desirability of increasing the supply of whale-oil”. In: Letter from Henry Lambert for the Secretary of State, to the Secretary Board of Agriculture and Fisheries. August 25, 1915”. The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁷⁴¹ “Letter from H.J. Read for the Under Secretary of State, to Messrs Richard Irvin and Sons Limited. October 1, 1915”. The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

therefore, to grant additional licences to British firms for next season. I request that regulations on using whole carcass, towing, and buoying be restricted as far as you may judge necessary to increase output during the current season".⁷⁴² Another reason for reorganising their local network in the Antarctic might have been that the African hunting grounds had reached their peak, and that it was in the Antarctic where future possibilities lay.

Tønnesen's argument that Irvin and Johnson's losses were caused by their inexperience is only partly true. Their organisation of using one platform in two different hunting grounds meant that hunting time was lost moving between the areas. However, their losses were primarily caused by the design of their local network (S/S Restitution) and unforeseen changes in the market caused by the First World War.

Phase two (Irvin and Johnson 1916–1919)

In the spring of 1916, Irvin and Johnson discussed how to turn their failing business around. They regarded their hunting grounds at South Georgia as more profitable and sustainable than the declining hunting grounds off the African coast, where they were only catching humpback whales.⁷⁴³ Therefore, they decided to focus exclusively on developing their whaling operations at South Georgia, and to redesign and reorganise their local network there. They established a shore-based whaling station for producing whale oil and guano, which had a significantly higher production capacity than S/S Restitution. Irvin and Johnson decided to disassemble their whaling station at Porto Alexandre and move it to South Georgia.⁷⁴⁴ The company maintained their whaling activities in southern Africa (despite the stagnating catches) by leasing three other whaling stations: one in Durban from the Shepstone Whaling Company, the second at Cape Kliphang from the Southern Cross Whaling Company, and the third at Donkergat in Saldanha Bay from the South African Whaling Company.⁷⁴⁵ Irvin and Johnson informed

⁷⁴² "Telegram from the Secretary of State, to Governor. February 9, 1916". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁷⁴³ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. Vol: 2. P: 456f. In: Den Modern Hvalfangst Historie- Opprinnelse og utvikling. 1967.

⁷⁴⁴ Norsk Fiskeritidende. No 9, September 1916. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁷⁴⁵ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. Vol: 2. P: 448. In: Den Modern Hvalfangst Historie- Opprinnelse og utvikling. 1967.

the Colonial Office of their intentions to establish a whaling station at South Georgia, and that production would only take place at the whaling station. They planned to use S/S Restitution elsewhere.⁷⁴⁶

Re-construction of the whaling station at South Georgia

Irvin and Johnson's plan was to move their whaling station from Porto Alexandre to South Georgia, but preferably not to Prince Olav Harbour. Instead they asked the Colonial Office and the Governor of the Falkland Islands for permission to establish their whaling station at Jason Harbour, which is located further south on the island and which they regarded as more suitable for a whaling station.⁷⁴⁷ In an attempt to secure this permission, Irvin and Johnson referred to the statements made by the Minister of Munitions that British authorities should assist British whaling companies and their activities in the Dependencies.

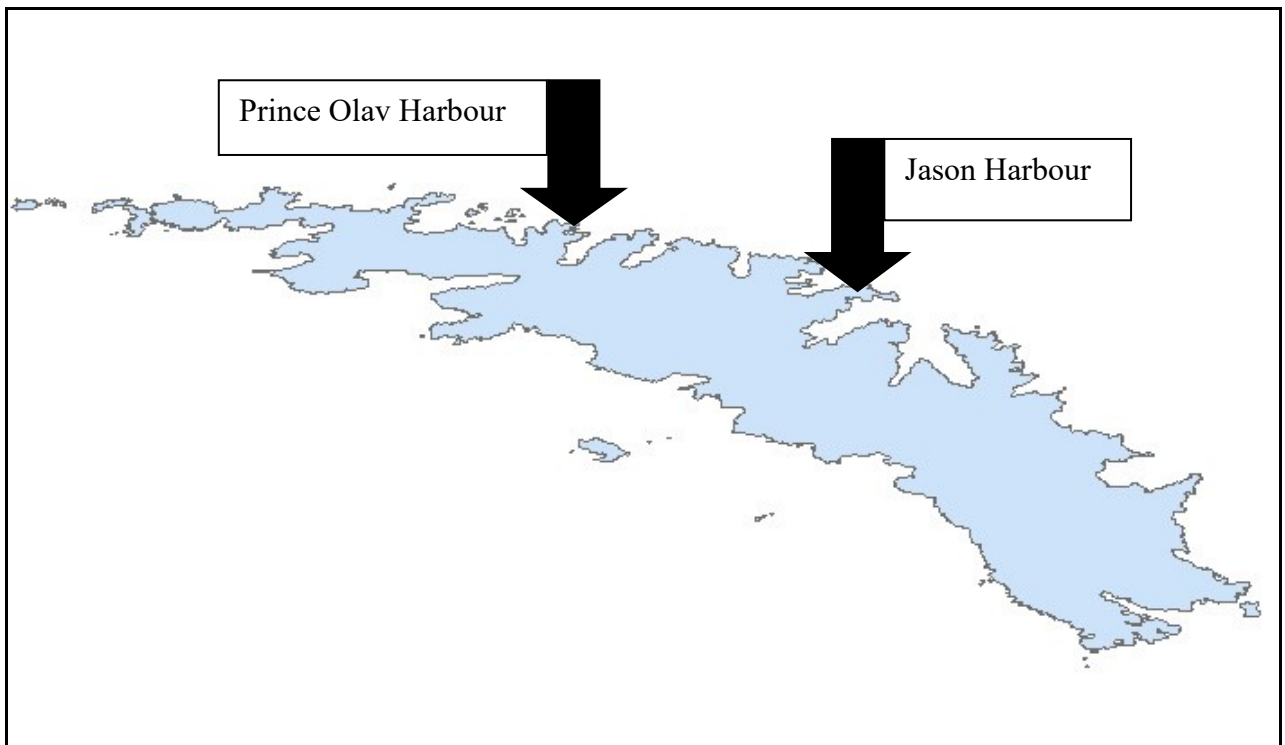


Fig 94. Map of South Georgia indicating the locations of Prince Olav Harbour and Jason Harbour. Map data has kindly been supplied by the British Antarctic Surveys.

⁷⁴⁶ "Telegram from the Secretary of State to Governor. July 1, 1916". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁷⁴⁷ "Telegram from the Secretary of State to Governor. July 1, 1916" The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

Jason Harbour had been leased out for 21 years to the Argentinean whaling company Compañía Argentina de Pesca Sociedad Anónima.⁷⁴⁸ The Colonial Office asked the magistrate of South Georgia to investigate whether establishing a whaling station at Jason Harbour would interfere with the activities of the Argentinean company, and if Compañía Argentina de Pesca Sociedad Anónima were willing to move from Jason Harbour to Prince Olav Harbour.⁷⁴⁹ Compañía Argentina de Pesca Sociedad Anónima objected strongly to this proposal.⁷⁵⁰ The magistrate argued that the two could operate in the same area without interfering with each other.⁷⁵¹ The negotiations continued throughout the autumn of 1916, while the Southern Whaling & Sealing Company disassembled the whaling station at Porto Alexandre. Irvin and Johnson also bought additional cookers, boilers, clearing tanks, larger storage tanks, new accommodation buildings for 250–300 men, and a new steam boiler house for a total cost of £125,000.⁷⁵² The combination of old and new technologies and buildings were documented and mapped during the LASHIPA 6/2009 expedition, and will be discussed further below.

In November 1916, Irvin and Johnson's ship S/S Woodville arrived in South Georgia with all the equipment. The negotiations between the magistrate and Compañía Argentina de Pesca Sociedad Anónima regarding Jason Harbour were unresolved. The magistrate instructed S/S Woodville's captain to find another suitable site for erecting the whaling station.⁷⁵³ Irvin and Johnson and the Southern Whaling & Sealing Company were apparently determined to establish themselves in Cumberland Bay. At the magistrate's request, the local manager, N. A. Andersen found a new site in the same bay,⁷⁵⁴ but Carl

⁷⁴⁸ Hart. I. B. *PESCA; The History of Compañía Argentina de Pesca Sociedad Anónima of Buenos Aires. An account of the Pioneer modern whaling and sealing company in the Antarctic*. P: 125f. 2001.

⁷⁴⁹ "Telegram from the Secretary of State to Governor. July 1, 1916". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁷⁵⁰ "Telegram from Sociedad Aninoma Compania de Pesca Buenos Aires, to the Colonial Secretary in Stanley. July 13, 1916". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁷⁵¹ "Letter from the Governor of the Falkland Islands, to the Secretary of State for the Colonies. November 7, 1916". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁷⁵² Jackson. G. *The British Whaling Trade*. 2nd edition. P: 156. 2005. See also *The History of the Irvin and Johnson Limited, Part 1 & 2*. By Greenwood-Johnson.E, Abao.H, Rosenthal. E". Unpublished confidential file. The Private Collection of Glenn McIntosh. Australia.

⁷⁵³ "Letter from the Governor of the Falkland Islands, to the Right Honourable The Secretary of State for the Colonies. December 19, 1916". "Letter from the Stipendary Magistrate Edw. B. Binnie, to the Honourable The Colonial Secretary in Stanley. November 6, 1916". The Falkland Islands Archive. South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁷⁵⁴ "Letter from the Stipendary Magistrate Edw. B. Binnie, to the Honourable The Colonial Secretary in Stanley. November 6, 1916". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

Anton Larsen, who was the manager of the Argentinean whaling company, argued that this site was too close and would interfere with their operations.⁷⁵⁵ To avoid further conflicts, S/S Woodville sailed to Prince Olav Harbour where all buildings and installations were unloaded.

From the 1916–1917 season until the 1918–1919 season, the company constructed the whaling station at Prince Olav Harbour under the leadership of Nielsen.⁷⁵⁶ While the station was being constructed, the company used S/S Restitution to produce whale oil from the whales that were caught by the four whale catchers.⁷⁵⁷ Nielsen had a solid whaling background. He had worked for Svend Foyn and established Tenvik Trankokeri, which he operated until 1912 when it was sold to Tønsberg Hvalfangeri.⁷⁵⁸ He had also assisted in the construction of Sandefjord Hvalfangerselskab A/S whaling station in Stromness Bay in 1912, where he had stayed on as a cookery foreman before he was employed by the Southern Whaling & Sealing Company.⁷⁵⁹ Nielsen knew how to establish and design a whaling station and make it functional in the environmental conditions at South Georgia. The season's result of 31,000 barrels of whale oil must have convinced Irvin and Johnson that their decision to increase their activities at South Georgia was correct.⁷⁶⁰ The oil was sent to Great Britain where it was sold at £30 per barrel.⁷⁶¹

On her way back from Great Britain to South Georgia, S/S Restitution sank off the southern tip of England. Although no lives were lost, the loss of S/S Restitution was devastating for the company since the ship had been their primary production unit in

⁷⁵⁵ "Letter from the Stipendary Magistrate Edw. B. Binnie, to the Honourable The Colonial Secretary in Stanley. November 6, 1916". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁷⁵⁶ Norsk Hvalfangsttidende. No 12, December 1919. P: 12. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁷⁵⁷ Norsk Hvalfangsttidende. No 9, September 1916. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁷⁵⁸ Norsk Hvalfangsttidende. No 9, September 1916. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁷⁵⁹ Norsk Hvalfangsttidende. No 12, December 1919. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway. See also: Galteland. O. *Hvalfangst på Syd-Georgia. A/S Sandefjords Hvalfangerselskab/ A/S Vestfolds fangst fra landstasjonen Strømnes 1906-1931*. P: 92f. 2009.

⁷⁶⁰ Norsk Hvalfangsttidende. No 9, September 1916. Also in: Norsk Hvalfangsttidende. No 11, November 1929. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁷⁶¹ Norsk Hvalfangsttidende. No 11, November 1916. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway. For prices, see Hart. I. B. *Whaling in the Falkland Islands Dependencies 1904-1931. A history of shore and bay-based whaling in the Antarctic*. P: 316. 2006.

the Antarctic up until that point. In spite of the loss, the company was still able to produce whale oil. The construction of the whaling station at Prince Olav Harbour had progressed faster than expected and the company managed to produce 27,400 barrels of whale oil that year.⁷⁶² In an attempt to increase and maintain production while the station at Prince Olav Harbour was being completed, the management decided to lease the whaling station in Stromness Bay from Sandefjord Hvalfangeri A/S. According to Galteland, Sandefjord Hvalfangeri A/S decided to lease out Stromness Bay whaling station to the Southern Whaling & Sealing Company because of logistic problems created by the war.⁷⁶³



Fig 95. Construction work at Prince Olav Harbour. In the foreground the upper meat cookery is being assembled, and the lower meat cookery is not yet assembled. Below on the shoreline is the tongue cookery. Neither the lemming nor the flensing platforms are built. The photo has been published with the kind approval of the Kommendør Chr. Christensen's Hvalfangstmuseum. Norway.

⁷⁶² Norsk Hvalfangsttidende. No 11, November 1929. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁷⁶³ Galteland. O. *Hvalfangst på Syd-Georgia. A/S Sandefjords Hvalfangerselskab/ A/S Vestfolds fangst fra landstasjonen Strømnes 1906-1931*. P: 148f. 2009. On 12 October 1917 the two companies signed a contract for the lease of the whaling station in Stromness Bay including its two whale catchers *Norrøna I* and *II* at an annual rate of £14 000.⁷⁶³ In addition to this, the Southern Whaling & Sealing Company had to guarantee a stock value of Kr 15.04,- which was to be paid the shareholders of the company.

Irvin and Johnson hired the former captain of the S/S Restitution, Andersen, as the local manager at Stromness whaling station. The lease of this station included two whale catchers, so the company operated with six whale catchers throughout the 1917–1918 season. Despite the increased capacity, the total production that year was 20,829 barrels of whale oil,⁷⁶⁴ which was 6,571 barrels fewer than the previous year. Several other whaling companies experienced similar reductions in production. Compared with the 1916–1917 season, the industry as a whole caught 394 fewer whales and 65,824 fewer barrels of whale oil.⁷⁶⁵ Strikes at Prince Olav Harbour and Stromness Bay whaling stations also had devastating effects on output over the following seasons.⁷⁶⁶ For the 1918–1919 season, the Southern Whaling & Sealing Company decided to extend the contract with Sandefjord Hvalfangeri A/S.⁷⁶⁷

Strikes

In the 1918 season, the company workers went on strike at Prince Olav Harbour and at Stromness Bay because (according to the magistrate of South Georgia) the manager of the Southern Whaling & Sealing Company had hired 170 men in Buenos Aires and promised to re-negotiate their initial contracts in South Georgia.⁷⁶⁸ When the manager failed to fulfil his promise, the men from Buenos Aires were discontent and the situation deteriorated. According to the magistrate, the workers argued that their salaries were too low.⁷⁶⁹ The 1918–1919 strike spread to Leith Harbour whaling station in South

⁷⁶⁴ Galteland. O. *Hvalfangst på Syd-Georgia. A/S Sandefjords Hvalfangerselskab/ A/S Vestfolds fangst fra landstasjonen Strømnes 1906-1931*. P: 153. 2009.

⁷⁶⁵ "Letter from Mr. Barlas at the Magistrates Office, South Georgia, to the Honourable The Colonial Secretary in Stanley. October 31, 1918". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁷⁶⁶ "Letter from the Magistrates Office, South Georgia, to The Honourable The Colonial Secretary in Stanley. October 31, 1918". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁷⁶⁷ Galteland. O. *Hvalfangst på Syd-Georgia. A/S Sandefjords Hvalfangerselskab/ A/S Vestfolds fangst fra landstasjonen Strømnes 1906-1931*. P: 152f. 2009.

⁷⁶⁸ "Letter from the Magistrates Office in South Georgia, to the Honourable the Colonial Secretary in Stanley. December 18, 1918". Also in: "Letter from the Magistrates Office in South Georgia, to the Honourable, The Colonial Secretary in Stanley. July 30, 1919". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 1. (1915-1935)

⁷⁶⁹ "Letter from the Magistrates Office in South Georgia, to the Honourable the Colonial Secretary in Stanley. December 18, 1918". Also in: "Letter from the Magistrates Office in South Georgia, to the Honourable, The Colonial Secretary in Stanley. July 30, 1919". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 1. (1915-1935)

Georgia.⁷⁷⁰ The strikes reduced the number of whales caught at South Georgia from 4,471 in the 1916–1917 season to 3,196 in the 1917–1918 season. This reduced the amount of whale oil produced from 268,327 barrels to 202,503 barrels.⁷⁷¹

Another reason for the strikes at Prince Olav Harbour and Stromness Bay was that the manager promised the company would operate with eight whale catchers but they only operated with six, which affected the workers' salaries. The Southern Whaling & Sealing Company had apparently miscalculated the amount of coal necessary to uphold production at Prince Olav Harbour and Stromness Bay whaling stations. The local managers considered halting production at Prince Olav Harbour to focus on the construction works, and moving all production to Stromness Bay. The workers demanded a 25% salary increase, a 100% raise of the part, and reduced prices in the company store.⁷⁷² The local manager accepted the demands of a 25% salary increase, offered a Kr0.03 increase per barrel, and a guaranteed production of 53,000 barrels. The workers refused this offer and the manager eventually gave in and accepted their initial demands.⁷⁷³

To prevent strikes like this from happening in the future, the magistrate of South Georgia wrote to the Colonial Office and suggested that "*it would be of considerable value if ocular demonstrations of the government's authority in the shape of a warship could be given*".⁷⁷⁴ The idea was that the warship be used as a tool in negotiations and exercise effective British authority in the area. Captain Andersen, who was the manager of the Southern Whaling & Sealing Company's leased station at Stromness Bay, supported the initiative arguing that from an operational and economic point of view "*that the display of force in the shape of a gunboat stationed on the island during the season would no doubt*

⁷⁷⁰ "Letter from the Magistrates Office in South Georgia, to the Honourable, the Colonial Secretary in Stanley. January 10, 1919". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 1. (1915-1935).

⁷⁷¹ International Whaling Statistics. 1930. Published by the Committee for Whaling Statistics in Oslo.

⁷⁷² "Letter from the Magistrates Office in South Georgia, to the Honourable, The Colonial Secretary in Stanley. December 18, 1918". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 1. (1915-1935).

⁷⁷³ "Letter from the Magistrates Office in South Georgia, to the Honourable, The Colonial Secretary in Stanley. December 18, 1918". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 1. (1915-1935).

⁷⁷⁴ "Letter from the Magistrates Office in South Georgia, to the Honourable, the Colonial Secretary in Stanley. January 10, 1919". Also in: "Letter from The Magistrates Office in South Georgia, to the Honourable, The Colonial Secretary. October 15, 1919". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 1. (1915-1935).

have the desired effect, and settlement of wages with a Man of War present before leaving the Dependencies would undoubtedly facilitate the more peaceful pursuit of the companies' operations".⁷⁷⁵ Tønnesen argued that these strikes, which occurred in several whaling stations in South Georgia, were linked to problems the companies had in employing competent workers from Europe due to the war. The whaling companies tried to solve these problems by hiring workers in Buenos Aires. According to Høva, these workers were the primary reason for the conflicts that arose.⁷⁷⁶ This strengthens the image that European workers were reliable and faithful to the company and were not responsible for the strikes. The magistrate of South Georgia suggested a different explanation. He claimed that Norwegian, Swedish, and British workers played central roles in the negotiations between the management and the magistrate.⁷⁷⁷

The situation worsened after that manager suggested reducing production because of a coal shortage. The workers demanded Kr20 per month more and a bonus of Kr0.02 per barrel and even more for the skilled workers.⁷⁷⁸ One can conclude that the manager of the Southern Whaling & Sealing Company is much to blame for the outbreak of the strike.

But how did the Southern Whaling & Sealing Company and its local managers adapt their social strategies to prevent future strikes? Even though archival material does not reveal the answer, the fieldwork we have done at the stations has shown that the company used spatial planning, separating workers into different groups to create hierarchies within the work force and to establish the power needed to avoid similar events in the future.⁷⁷⁹

⁷⁷⁵ "Letter from the Magistrates Office in South Georgia, to the Honourable, the Colonial Secretary in Stanley. July 30, 1919". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 1. (1915-1935).

⁷⁷⁶ Høva. E. *Etter hval i Sydhavet*. P: 27. 1929. See also: Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 96. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*. 1969.

⁷⁷⁷ "Report on the whaling industry in South Georgia for the season 1919-1920, by Edw. B. Binnie. Stipendary Magistrate, to the Hon. The Colonial Secretary Falkland Islands. April 21, 1920". The Falkland Islands Archive. Vol: South Georgia. Whaling. Vol 2 (1920-1939).

⁷⁷⁸ "Letter from the Magistrates Office in South Georgia, to the Honourable the Colonial Secretary in Stanley. December 18, 1918". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 1. (1915-1935).

⁷⁷⁹ How this was done at the station is discussed more under heading Accommodations and ancillary functions, and Social strategies.

Whatever the company's strategies were, they failed, since similar strikes broke out later, forcing the company to adapt once again. These strikes spread rapidly across the whaling stations on the island, suggesting that most of the workers had similar ideas and ambitions. It also shows that communication was good between the workers at different stations and that news travelled fast between the stations. Although the workers were very international, they used the momentum created at other stations to promote their own interests and perhaps express solidarity. The formation of workers' unions and sympathies of solidarity and equality were part of a class movement that had been subdued. During the first few decades of the 20th century, workers started fighting to improve their working and living conditions by demanding union memberships, equal contracts, fixed working hours, overtime pay, rights to vote, and much more. Society and social classes were changing; a process which often collided with the economic ambitions of industrialists.

These strikes, combined with the loss of S/S Restitution and having to lease another station to uphold production, did not help the company's negative spiral. The company probably increased the number of African workers at the stations to reduce costs since the salary of one European worker was ten times that of an African worker.⁷⁸⁰ The war in Europe had substantially increased the costs for equipping, supplying, and insuring expeditions. For the management of the Southern Whaling & Sealing Company, the loss of S/S Restitution had been particularly difficult. Firstly, it represented the loss of their primary production unit while the station at Prince Olav Harbour was being constructed. Secondly, the ship was carrying technical equipment for the whaling station. Thirdly, the loss of the ship forced the company to lease Sandefjord Hvalfangeri A/S station to uphold production, which cost Irvin and Johnson an additional £28,000 for two seasons. These circumstances probably convinced Irvin and Johnson to withdraw from their project in South Georgia.

When Lever Bros took over the whaling station at Prince Olav Harbour, they probably adopted the same social strategies that were used within the whaling industry in South Georgia. Lever Bros and Irvin and Johnson appear to have maintained their business

⁷⁸⁰ Børresen. D.I. *There is plenty of black labour to be had, African labourers in modern whaling*. Pp: 132. In: *Whaling & History III*. Editor: Ringstad. J.E. Publication No 33, Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway. 2010.

relations after the sale. Johnson worked for Lever Bros in England for one year, and Irvin and Johnson were dragged into a legal dispute with Lever Bros after supplying the Southern Whaling & Sealing Company with African workers. The conflict was related to strikes that occurred at Prince Olav Harbour in the 1920 season. One year later, Lever Bros hired Zulu workers for the station. Besides the study made by Jackson (1978), there are few archival sources related to the activities of the Southern Whaling & Sealing Company during the 1920s. According to the Unilever archives, all documents (including the ones used by Wilson and Jackson in their works) were destroyed after the Second World War.⁷⁸¹ Under the ownership of Lever Bros, the Southern Whaling & Sealing Company experienced one strike in the 1920 season. It is, however, difficult to say whether Lever Bros were more successful than their predecessor in establishing control, since few archival sources have been found relating to the activities at the whaling station.

The 1920 strike was, according to Børresen, caused by unclear working contracts between the management and the approximately 100 African workers that the company had employed for the season from Irvin and Johnson.⁷⁸² According to them, African workers were commonly contracted at fixed annual rates and were not part-holders in the production. At some point during the season, the local manager re-negotiated the contracts so that African workers were paid the same part-based salary as the rest of the workers at the station. When the African workers arrived back in Cape Town, however, the company did not fulfil the agreement. After that, the South African authorities proclaimed that the whole group had been illegally recruited.⁷⁸³ The problems were solved when the South African Native Affairs Department got involved and forced the

⁷⁸¹ Unfortunately a large part of the archival sources relating to the whaling activities of Lever Bros/Unilever used by Jackson (1978) in his study have been lost. (Personal correspondence with the Unilever archives).

⁷⁸² Børresen. D.I. *There is plenty of black labour to be had, African labourers in modern whaling*. In: Whaling & History III. Editor: Ringstad. J.E. Publication No 33, Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway. 2010.

⁷⁸³ Børresen. D.I. *There is plenty of black labour to be had, African labourers in modern whaling*. Pp: 138. In: Whaling & History III. Editor: Ringstad. J.E. Publication No 33, Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway. 2010.

Southern Whaling & Sealing Company to compromise by giving the 100 workers a 20% raise and additional pay for special work.⁷⁸⁴

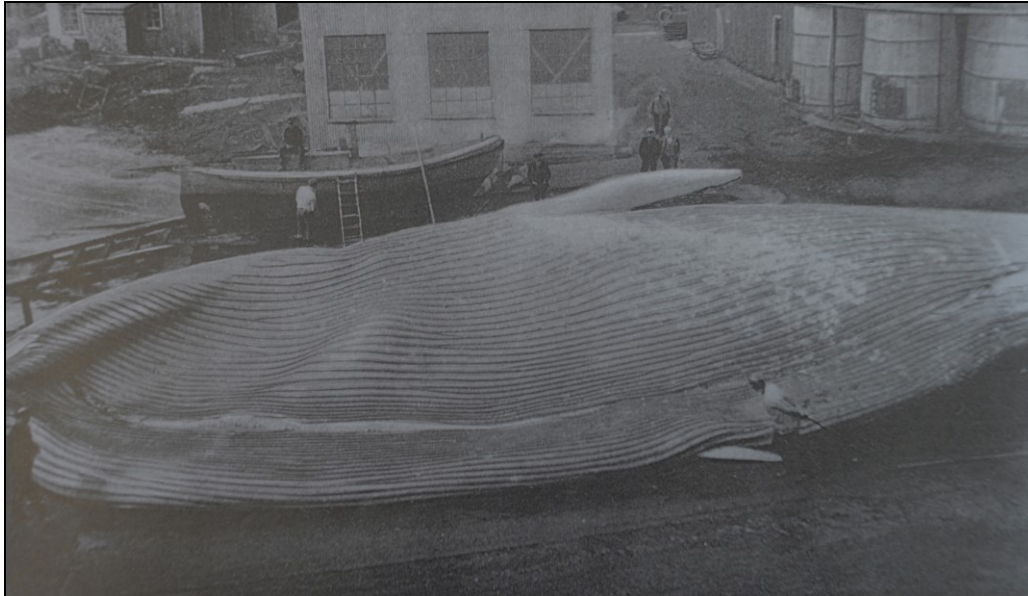


Fig 96. A large blue whale has just been towed onto the flensing plan for processing. In the back of the photo, the small motor boat the workers used to tow the whale from the buoy to the station is visible. The photo has been published with the kind approval of the South Georgia Museum.

The Southern Whaling & Sealing Company avoided strikes after this incident because of several factors. Firstly, Lever Bros increased production and economic profit, which had a positive effect on the workers' salary. Secondly, the company invested in leisure activities (for example, they built a football field) for their workers.



Fig 97. Football field located in the vicinity of the whaling station at Prince Olav Harbour. Much work went into creating the necessary level space for the field, and the company had to perform substantial work with explosives. This illustrated the importance of leisure activities for the workers' mental well-being. Photo: Gustav Rossnes. LASHIPA 6/2009.

⁷⁸⁴ Børresen. D.I. *There is plenty of black labour to be had, African labourers in modern whaling*. Pp: 139. In: *Whaling & History III*. Editor: Ringstad. J.E. Publication No 33, Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway. 2010.

Prince Olav Harbour whaling station

In this section, I will describe how the whaling station at Prince Olav Harbour was designed, how it functioned, and explain why the company organised their production of whale oil and other products the way it did.

In 2009, an international team of researchers from the LASHIPA project surveyed and mapped the whaling stations at Prince Olav Harbour and at Ocean Harbour on South Georgia. The purpose of the fieldwork was to understand the design, organisation, technical choices, and adaptations at the station.



Fig 98. Map of South Georgia and the area where Prince Olav Harbour is located.

Map by U.I. Gustafsson, D.Avango, G.Rossnes and B.Basberg. Postprocessing by E.Bolhuis and F.Steenhuisen.

A large part of South Georgia is permanently covered by ice and glaciers. As a result, there were few places suitable for establishing whaling stations. Prince Olav Harbour is the northernmost of the six stations on South Georgia, and it is located in Possession Bay on the north-western part of South Georgia. Our fieldwork in 2009 showed that the whaling station at Prince Olav Harbour was located in a small bay, which provided shelter from most wind directions. It became clear that the company had very limited space available for their buildings and production facilities.



Fig 99. The material remains of Prince Olav Harbour whaling station in 2009.

Photo by U.I. Gustafsson. LASHIPA 6/2009.

The company started to construct Prince Olav Harbour whaling station in 1916, although it is probable that it used the site to store supplies such as diesel, coal, and explosives before the whaling station was built. The building process lasted for several years and the station was not completed until 1922 when the guano factory was assembled. There were several reasons for this relatively slow construction. The company decided, along the way, to add a number of new components to their local network. Progress was also disrupted by strikes and other challenges related to the First World War.

According to Jackson, the whaling station at Prince Olav Harbour was equipped with 60 cookers and boilers, 15 clearing and storage tanks, an engineering shop, and an electricity plant.⁷⁸⁵ The fieldwork we conducted at the site gave us an opportunity to confirm whether this and other previous assumptions about the structure of the station were true. The results from this fieldwork will be discussed below.

⁷⁸⁵ Jackson, G. *The British Whaling Trade*. 2nd edition. P: 156. 2005.

The structure of the whaling stations at South Georgia has previously been investigated by the British Discovery expeditions in the 1920s, by Headland in 1984, and later by Basberg, Rossnes, Lunde, Løkken, and Nævestad during the NARE expeditions in 2004. In addition, a blue print map of Prince Olav Harbour whaling station was drawn by engineer William Gillner from Sandefjord of unknown date. These surveys and maps provided important information about the ambitions of individual companies, contemporary perceptions of social relations, and more. The accuracy and detail of these maps are limited, however, as they do not contain any information on the functions of different units and relationships between different production facilities. Although the 1920 map gives an insight into the station's leadership, it does not necessarily reflect what the company actually ended up building, because the companies may have adapted to the local circumstances. The archaeological data we collected during our fieldwork confirmed this. Maps and plans were often used to attract investors rather than being exact representations of reality.

Knowledge of the interaction between whaling stations and their surrounding landscapes, as well as different perceptions on how to design them, can best be achieved with a methodological approach that combines the study and documentation of material remains and written sources. This approach has improved my ability to explain the social, economic, political, and ideological factors that influenced the way the whaling companies designed their stations.⁷⁸⁶

⁷⁸⁶ See Gustafsson and Basberg. *Surveys of whaling stations in South Georgia from NARE to LASHIPA and beyond*. In: *Managing Industrial & Cultural Heritage: South Georgia in Context*. Report on a conference held at Discovery Point, Dundee, 7-9 september 2011, pp: 67-77. 2011.

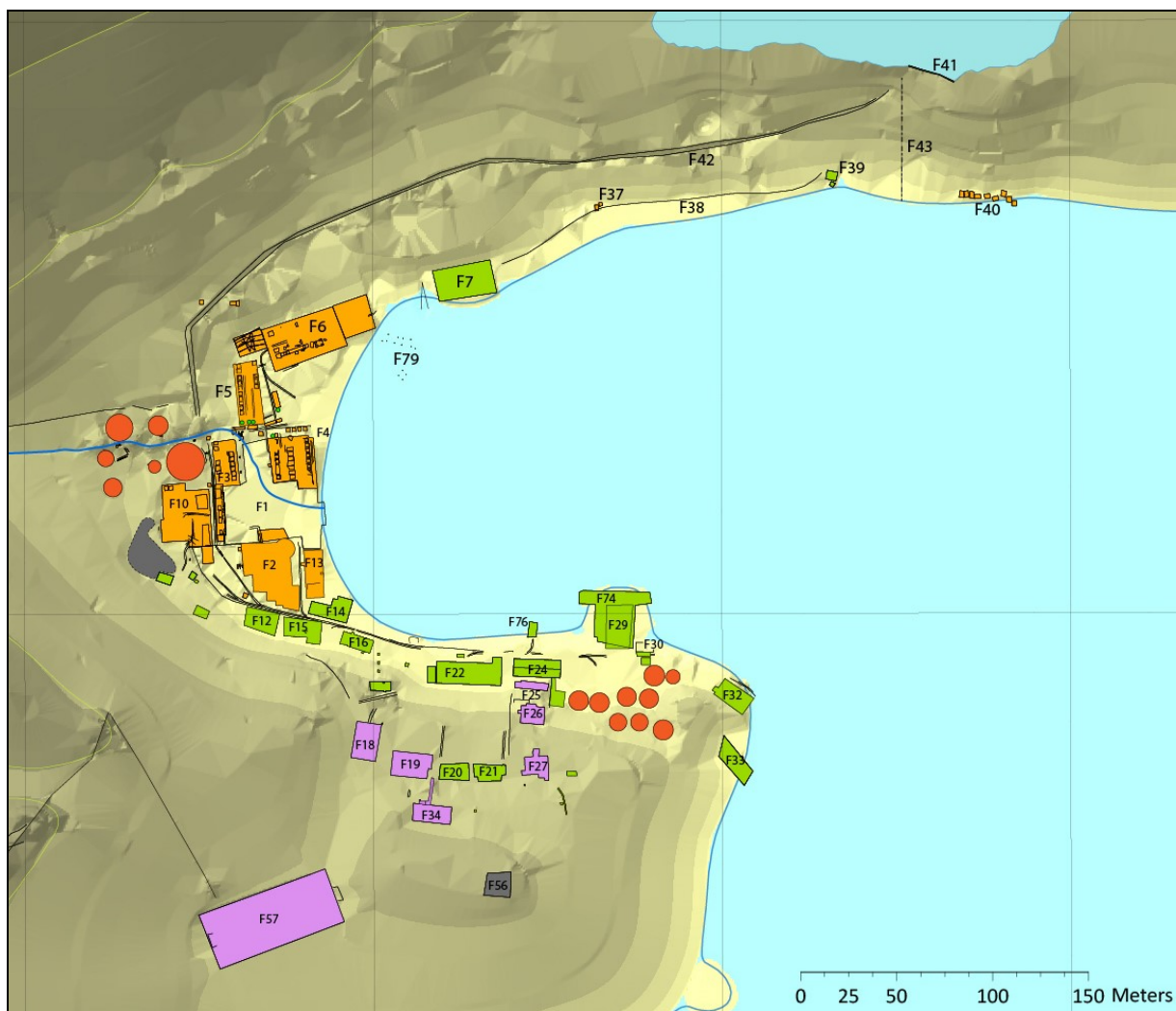


Fig 100. Total station map of Prince Olav Harbour whaling station and the surrounding landscape. Map by U.I. Gustafsson, D. Avango, B.L. Basberg and G. Rossnes. Postprocessing by: F. Steenhuisen and E. Bolhuis.

Features of Prince Olav Harbour

For details about the features of Prince Olav Harbour, please see the LASHIPA 6 fieldwork report (2009).

- | | |
|------------------------------|---------------------------------------|
| 1 – Flensing platform | 2 – Blubber cookery |
| 3 – Upper meat cookery | 4 – Lower meat and tongue cookery |
| 5 – Bone cookery | 6 – Guano factory |
| 7 – Guano store | 8 – Elevated railway system |
| 9 – Winch house | 10 – Boiler house |
| 11 – Provisions store | 12 – General store |
| 13 – Refinery and laboratory | 14 – Carpenter’s and butcher’s shop |
| 15 – Forge | 16 – Foundry |
| 17 – Bath house | 18 – Workers’ barrack |
| 19 – Workers’ barrack | 20 – Office and slop chest |
| 21 – Hospital | 22 – Kitchen, mess, and accommodation |

- | | |
|----------------------------------|-----------------------------------|
| 23 – Bakery | 24 – Provision store |
| 25 – Old foremen’s house | 26 – New foremen’s house |
| 27 – Manager’s villa | 28 – Hen house |
| 29 – Jetty store | 30 – Boiler/pump house |
| 31 – Pump house/oil tank | 32 – Northern pig house |
| 33 – Southern pig house | 34 – Cinema |
| 35 – Remains of railway system | 36 – Red house/storage |
| 37 – Storage area | 38 – Lower water pipe |
| 39 – Hut/storage | 40 – Boilers and cookers on shore |
| 41 – Dam | 42 – Upper water pipe |
| 43 – Wooden poles/ropeway | 44 – Whale oil tank |
| 45 – Whale oil tank | 46 – Whale oil tank |
| 47 – Whale oil tank | 48 – Whale oil tank |
| 49 – Whale oil tank | 50 – Foundations |
| 51 – Brick house | 52 – Stairs |
| 53 – Rail system | 54 – Stairs |
| 55 – Radio mast foundation | 56 – Cemetery |
| 57 – Football field | 58 – Ropeway foundation |
| 59 – Foundation fuel tank | 60 – Foundation fuel tank |
| 61 – Foundation fuel tank | 62 – Foundation fuel tank |
| 63 – Foundation fuel tank | 64 – Foundation fuel tank |
| 65 – Foundation fuel tank | 66 – Foundation fuel tank |
| 67 – Foundation fuel tank | 68 – Foundation flagpole |
| 69 – Stairs | 70 – Stairs |
| 71 – Pathway | 72 – Block and tackle |
| 73 – Brutus wreckage | 74 – Jetty |
| 75 – Wooden box | 76 – Small jetty – A |
| 77 – Small jetty – B | 78 – Concrete mooring |
| 79 – Jetty by guano store | 80 – Water pipe |
| 81 – Metal artefacts | 82 – Water pipe |
| 83 – Dam/water intake | 84 – Tank |
| 85 – Sealer’s grave | 86 – Drainage |
| 87 – Storage for pipes and rails | 88 – Metal tower |
| 89 – Wooden pathway | 90 – Anchor point |
| 91 – Quarry | 92 – Ropeway foundation |
| 93 – Ropeway foundation | 94 – Chicken house |
| 95 – Aerial ropeway | |

The organisation of production

Prince Olav Harbour whaling station was designed to process whales into whale oil and by-products on a large scale. The company organised their production line to maximise production. First, the whale catchers delivered their catch to a buoy, which was placed in a sheltered location in the bay immediately outside the station. From here, the workers used a small boat to tow one whale at a time to a double planked flensing platform (Fig

100,No 1). The whale was pulled onto the platform by a steel wire connected to the steam winches (Fig 100,No 9). The winches were made by various British manufacturers.⁷⁸⁷ Flensing started as soon as the whale was pulled onto the platform.



Fig 101 and 102. The wooden flensing plane at Prince Olav Harbour in 2009. Right: A whale has just been towed onto the flensing plane, and flensing of the blubber layer has commenced. In the front of the photo, the small motor boats the workers used to tow the whale from the buoy to the station are visible. To the right are the two meat cookeries (upper and lower), and the tongue cookery. Photo taken by Gustav Rossnes. LASHIPA 6/2009. Right: The photo has been published with the kind approval of the Kommendør Chr. Christensen's Hvalfangstmuseum. Norway.

The blubber layer was cut into long strips and pulled from the whale using steam power. The strips of blubber were fed into a concealed container next to the blubber cookery (Fig 100,No 2), which contained a rotating blubber cutter. This was a steam-powered circular cutting device equipped with two sharp blades that rotated at high speed, cutting the blubber into smaller pieces. This minimised the cooking time of the blubber into whale oil. The blubber cutter was connected to an elevator, which transported the pieces of blubber to the top of the blubber cookery where they were distributed into the 11 cookers. Fieldwork showed that the open cookers were vertical and positioned in two rows, and that each cooker had a rotating inner section, which kept the pieces of blubber in constant motion.⁷⁸⁸ This technology was uncommon in South Georgia.

⁷⁸⁷ The steam winches used at the whaling station were produced by: *L Ford. Bros of Sunderland, J Lyn & Co Ltd of Sunderland, Chapman & Co Ltd Gateshead, Clarke Chapman & Co Ltd Gateshead, Cardiff Junction Engineering Comp Ltd Cardiff, and R Rocher & Co Ltd Stockton on Tees*; All British manufacturers.

⁷⁸⁸ The LASHIPA 8 fieldreport. Arctic Centre, University of Groningen, 2009.



Fig 103. Vertical blubber cooker with rotating mechanism at Prince Olav Harbour in 2009. The internal mechanism is visible underneath and through the rust hole in the cooker. Below is a measured drawing of the blubber cookery where these cookers are located. Photo: U.I. Gustafsson. LASHIPA 6/2009.

Once the cookers had been filled with blubber, steam was introduced until the blubber had melted into oil. The whale oil was pumped into the 22 settling tanks where it cooled down before being pumped into larger storage tanks. The remaining residues were taken out through a hatch in the front of the cooker and placed in a hand pushed wagon. The wagon contents were transported to the guano factory for processing. To control the quality of the whale oil, the station had a refinery/laboratory (Fig 100, No 13) immediately next to the blubber cookery. In addition to the 11 blubber cookers, the blubber cookery also had a mezzanine press. This type of technology was normally used for pressing oils from whale meat, but appears to have been used at Prince Olav Harbour for blubber. Archival sources state that the blubber cookery could process blubber from six blue whales or nine fin whales per day when running at full capacity.⁷⁸⁹

⁷⁸⁹ "Report on the present capacity of South Georgia whaling stations, by Edw.B. Binnie, Stipendary Magistrate, to The Hon. The Colonial Secretary, Falkland Islands. August 5, 1919". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

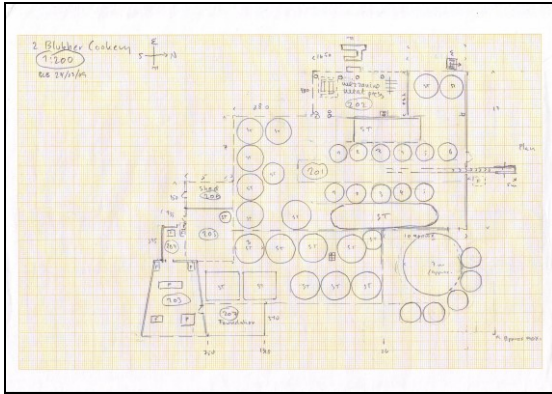


Fig 104 and 105. The design and internal layout of the blubber cookery at Prince Olav Harbour. Drawing by B.L. Basberg. LASHIPA 6/2009. Right: Overview over the blubber cookery. The cookers are located in the centre of the feature, and are surrounded by a large number of cooling/settling tanks. Photo: U.I. Gustafsson. LASHIPA 6/2009.

After this, the meat and the tongue were cooked into oil. The fieldwork showed that the company had equipped Prince Olav Harbour whaling station with two meat cookeries, an upper (Fig 100, No 3) and a lower (Fig 100, No 4). The lower meat cookery also contained one extra row of cookers located immediately by the shoreline, which were the tongue cookery (Fig 100, No 4). Each of the two meat cookeries contained 18 pressure cookers. The whale meat was placed on metal plates in a spiral form inside these cookers to maximise the effect of the steam and ease the outflow of oil from the meat. Each cooker had a sieve in the bottom so the oil could run out without being mixed with the residues after the cooking process. Fieldwork revealed that the two cookeries had different designs. The foundations of the lower row of cookers in the upper meat cookery were made of iron bars fixed in a bed of concrete, while the foundations of the upper row of the upper meat cookery and the entire lower meat cookery were made of wood. The upper meat cookery was probably designed in this way because of the angle of the lemming platform in relation to the flensing platform and the placement of the steam winches. These features meant the whale carcasses hit or slid alongside the wall of the upper meat cookery that faced the lemming platform, so it had to be reinforced. To reduce the impact of the whale carcass, the company designed the corners of both cookeries with reinforced and angled concrete constructions.

The carcass was pulled from the flensing platform to the lemming platform by steam winches located at the end of the lemming platform. The lemming platform was a wooden platform that extended from the flensing platform (located between No 3 and

No 4 in Fig 100). Here, the meat was separated from the whale's body until nothing but the bones remained. The meat was cut off in large chunks and pulled by hand into the four bucket elevators that faced the lemming platform. These elevators lifted the chunks of meat to the upper deck of the meat cookeries where it was chopped into suitable pieces and put into the cookers.

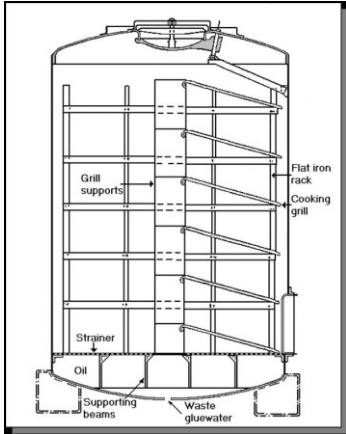


Fig 106 and 107. The internal design of a pressure cooker. The cooker was filled so that the centre grill was supported and the angled cooking grills were stacked with whale meat until the whole cooker was filled. The top was screwed solid and the steam was introduced. Right: One of the remaining bucket elevators at Prince Olav Harbour, filled with grill supports. Photo: U.I. Gustafsson. LASHIPA 6/2009.

The whale bones were cooked into oil in the bone cookery (Fig 100, No 5). Fieldwork showed that the cookery was an immediate extension of the lemming platform and contained 22 cookers, and continued the flow of production. The bone cookery had an elevated wooden platform with steam winches and bone saws on top, and an angled wooden platform at the top where the bones were winched. On the platform, the bones were sawed into smaller parts and placed in the cookers.

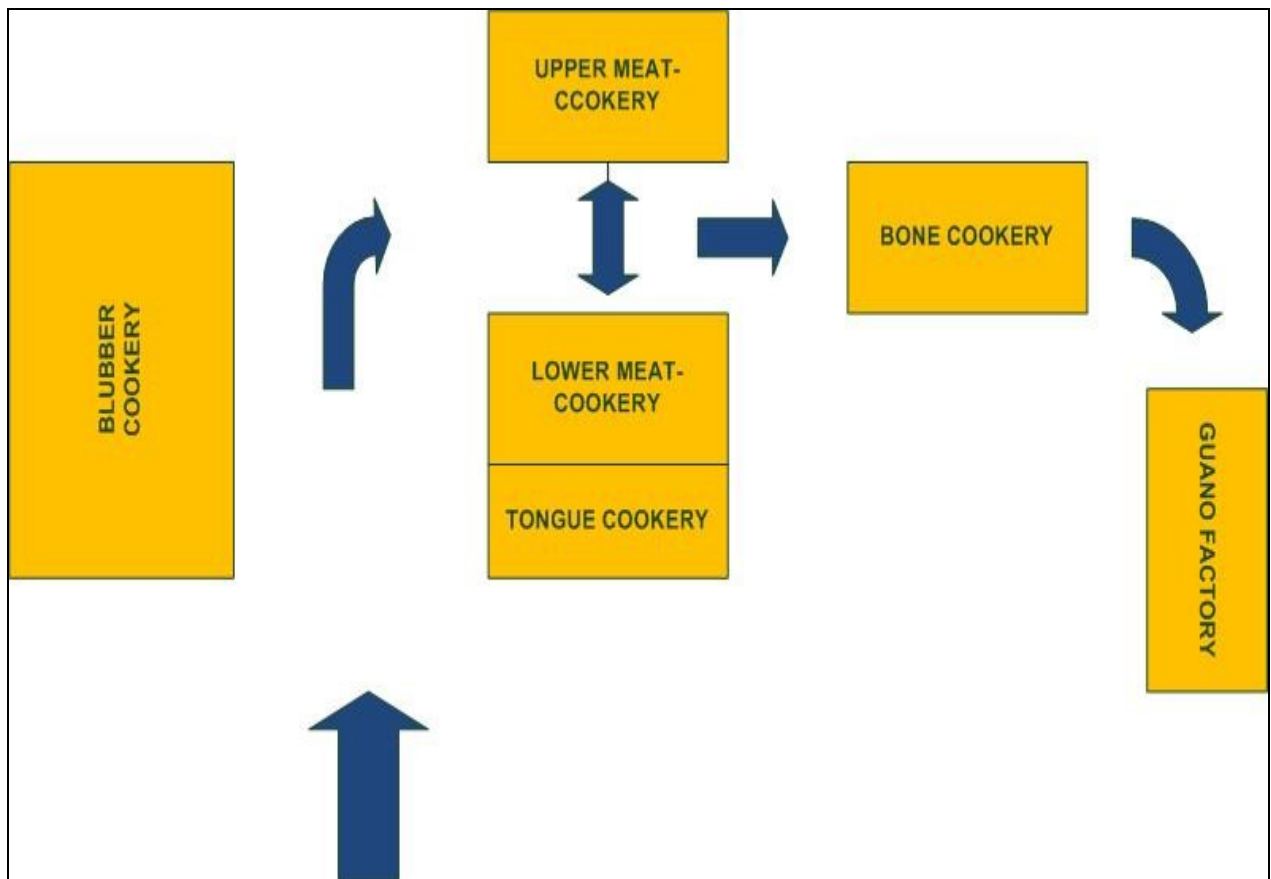


Fig 108. The flow of production at Prince Olav Harbour whaling station.

After each stage of the cooking process, the whale oil was tapped into clearing tanks before being pumped into the larger storage tanks behind the production area and by the main jetty (marked red in Fig 100). At the end of the season, the oil was pumped into cargo ships to be transported and sold. After each cooking process (blubber, meat, and bones) workers scraped out the remaining residues from the still warm cookers and placed them into a small railway car for transportation to the guano factory (Fig 100, No 6). This represented the final stage of processing. As previously mentioned, the company's initial plan was to design the station so that the full whale carcasses could be processed. Therefore, it included a guano factory. Archival sources show that the factory installations had already been delivered in 1919, but the company did not assemble it until 1922. The reason for this delay is unclear. The guano factory consisted of several technological elements produced by several different manufacturers, which the company shaped to function as one coherent production unit once the parts were on site. The guano factory at Prince Olav Harbour was equipped with three rows of guano producing units. Each contained a furnace, a heat fan, and a rotating tube with rails on

the inside to disintegrate the residues into a fine meal. The meal was tapped into canvas bags and stored in the guano store (Fig 100, 7) until the end of the season when they were loaded onto the cargo ships via a small ropeway system.



Fig 109, 110, and 111. The guano factory at Prince Olav Harbour. The guano factory contained three individual units each fitted with one heater (left), one heat fan, and one large rotating metal tube inside which the residues were processed into a fine meal. At the end of the tube, the meals were connected by a small elevator and poured into canvas bags and stored away. Left photo by G. Rossnes. LASHIPA 6/2009. Middle and right: the guano factory was designed using several manufacturers of different nationalities. The different parts were re-built and adapted on site to function as one processing unit. Photos by: U.I. Gustafsson. LASHIPA 6/2009.

The guano factory at Prince Olav Harbour contained technologies from Great Britain and the USA. Hacquebord has argued that this mixture of technologies represents the transition from the first to the second industrial revolution when the USA took over as the leading manufacturer of industrial technologies from Great Britain.⁷⁹⁰ I believe that these technical choices were motivated by a combination of availability and desires to achieve functionality at the best cost and efficiency. The choices of technology may reflect what the whaling companies considered to be the best technologies, and may also have had a social aspect. Well tested and simple processing technologies could be used without having to invest in training the workers. This also allowed the company to change or get rid of unwanted workers without affecting production. Using simple technologies made it easier to adapt and mend them if necessary, whereas untested and complex technologies could backfire. Therefore, it was strategic to base production on simple and well tested technologies.

⁷⁹⁰ Hacquebord, L. *Hector station on Deception Island (South Shetland Islands, Antarctica), an environmental assessment study of a whaling-station*. Pp: 72-97. In: *Circumpolar Journal*. 1-2, Volume 7, Antarctica; Research and nature conservation, future prospects. 1992.

Whaling companies organised their flow of production in this way because different parts of the whale had different cooking times. The number of barrels of oil the whaling companies could produce from each whale depended on the species, sex, size, and age of the whale as well as the time of year, machineries, and level of technology used at the whaling station. Prince Olav Harbour whaling station had ten blubber cookers, 41 pressure cookers, and a large number of clearing and storage tanks. This allowed the station to process six blue whales or nine fin whales per day.⁷⁹¹

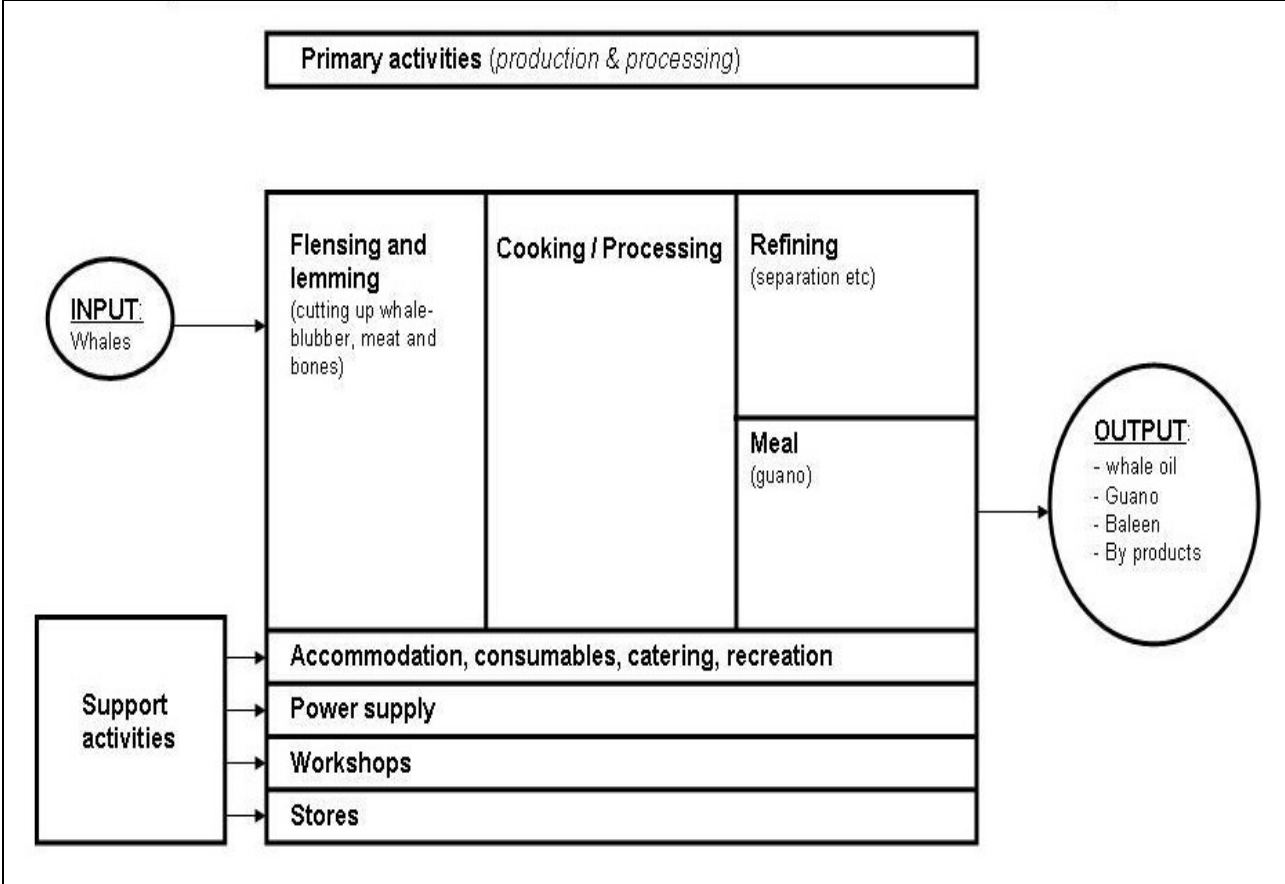


Fig 112. The primary activities at Prince Olav Harbour whaling station.

Steam and electricity for all production units and steam winches were supplied by a boiler house in the centre of the production area (Fig 100, No 10). This house was originally equipped with seven boilers (four of which remain *in situ* today), coal storage, three water tanks, a dynamo house, and generators.⁷⁹² Freshwater for steam production and drinking was supplied from two main sources: a small dam located in the small river

⁷⁹¹ "Report on the present capacity of South Georgia whaling stations, by Edw.B. Binnie, Stipendary Magistrate, to The Hon. The Colonial Secretary, Falkland Islands. August 5, 1919". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁷⁹² Feature descriptions list by B.L. Basberg. LASHIPA 6/2009.

running down the valley to the production area, and a larger artificial lake, which the Southern Whaling & Sealing Company enclosed with a concrete dam (Fig 100, No 41). Fieldwork showed that water was pumped from this dam to the station area via an upper and lower water pipe (Fig 100, No 38 and 42). Having two pipes secured a good water flow and reduced the risk of production stopping if water in one pipe froze.

The whaling station at Prince Olav Harbour was supplied with two railway systems: one elevated and one at ground level. The main production area was served by the ground-based railway system, where cars were pushed by hand. There are few remains of these two systems today, as seen on Fig 100.

Accommodations and ancillary functions

There were several buildings and installations that had ancillary functions (marked green on Fig 100), and accommodation and leisure areas (marked purple on Fig 100) at Prince Olav Harbour whaling station. Although these did not have any direct part in production, they were vital to sustaining the station's functionality. Fieldwork showed that the accommodation consisted of three houses for workers (Fig 100, No 18, 19 and 22), two houses for the management (Fig 100, No 25 and 26), and one villa for the director (Fig 100, No 27). Ancillary buildings and installations included a hospital (Fig 100, No 21), a mess and kitchen (Fig 100, No 22), a forge (Fig 100, No 14), a piggery (Figure 100, No 32 and 33), and a bakery, among others. These supplied a number of services, including food and health services and maintenance services, such as straightening bent harpoons and changing wheel bearings on the railway carts. Used harpoons often got bent by the forces involved in killing and hauling a whale. Keeping the harpoons in working order ensured that production ran smoothly.

All accommodation buildings were located on the south side, either by the beach or on a levelled ridge. At most other whaling stations on South Georgia, the management's accommodation was situated away from the workers' accommodation. At Prince Olav Harbour, however, there is not enough space for such a separation. Instead, the entire accommodation area was situated on one ridge and was divided by other means, probably to create hierarchical boundaries.

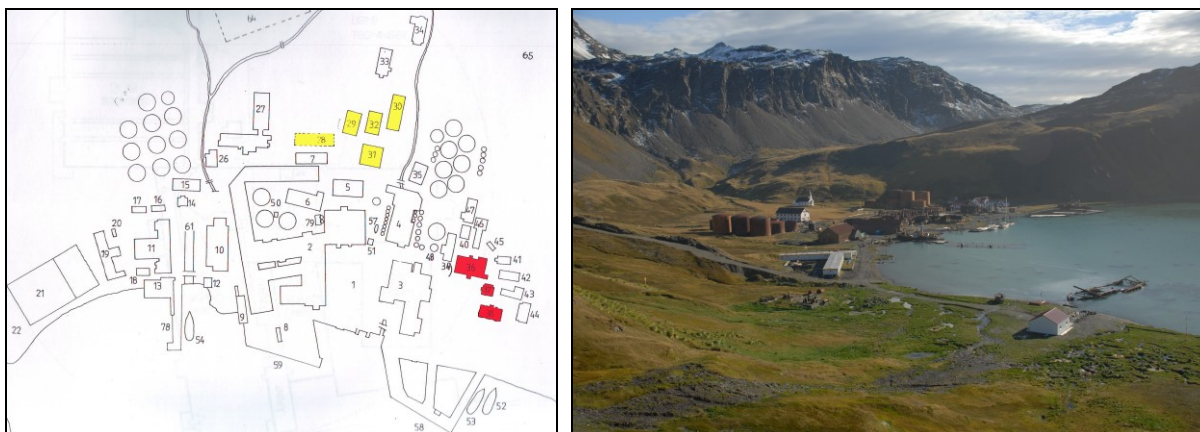


Fig 113 and 114. The local landscape of the former whaling station at Grytviken is large and flat, and as such suitable for establishing industrial operations. Consequently, the management of *Compañía Argentina de Pesca Sociedad Anónima* were able to design their workers' accommodation area differently than the *Southern Whaling & Sealing Company*. The workers' accommodation (yellow) was located east of the production area while the management (red) lived to the north and were separated from the workers by the meat cookery (no. 4) and the hospital (no. 35). Map by *The Norwegian Antarctic Research Expeditions*.⁷⁹³
 Right: Grytviken whaling station in 2009 after the asbestos clean-up project. Photo: U.I. Gustafsson. LASHIPA 6/2009.

How was this accommodations designed, and how were the workers divided? The fieldwork showed that all three of the workers' accommodation houses had electric lighting. It appears, however, that only two of the workers barracks had a hot water supply. One of the barracks Fig 113,(No 19) was divided in two sections by an internal wall. The buildings had concrete foundations and a wooden frame with walls and a roof of corrugated steel plates. Corrugated steel was cheap and suited the environmental conditions. Some of the wooden material had been imported from Sweden via South Africa to the station.⁷⁹⁴ The houses were relatively simple and cheap constructions, but sturdy enough to withstand the local environment.

Barrack No 18 had ten rooms on the lower floor and three on the upper. Each room was equipped with eight beds, giving the house an approximate capacity of 104 workers. The interiors of these rooms had little private space and were sparsely decorated. Although the barrack was equipped with electrical lighting and internal heaters, the heaters were only present in every second room. All three of the workers' barracks had running cold

⁷⁹³ The map has been supplied by *The Norwegian Antarctic Expedition: En Rapport fra prosjektet hvalfangstminneregistreringen på Syd Georgia 1992/93*.

⁷⁹⁴ During the LASHIPA 6 expedition the team recorded the text: *9 x ½ S (T) L Cape Town. Made in Sweden*, on the wall of one of the ancillary buildings.

water on each floor. Hot water for washing was available at the bath house between barracks 18 and 19 and the production area. Here, the workers could wash after the day's work before going to the barrack. The exteriors of barracks 18 and 19 were similar, but the interiors differed substantially. Barrack 19 was divided by an internal wall into two separate sections. The outer walls of the eastern section were insulated with tar paper insulated and the cornice was painted white. Although British armed forces used the same rooms later on and partly re-decorated them, there are no signs that any of the rooms in this section were equipped with similar bunk beds as in barrack 18. The other side of barrack 19 was divided in two levels. The rooms here were decorated with wallpaper and curtains. It is difficult to make a comparison with barrack no 22 due to its poor state. Half of the building has collapsed and could not be surveyed for safety reasons. These findings imply that the workers were divided by living conditions, access to space and privacy, and small architectural details. The skilled workers probably enjoyed better living conditions than the unskilled workers. Below, I discuss why the company designed the houses in this way.



Fig 115 and 116. In barrack 18, eight workers were accommodated in each room. In the eastern part of barrack 19, only two workers shared a room and the standard of these rooms was visibly higher. Photos: Gustav Rossnes. LASHIPA 6/2009.

The foremen's houses were located on a ridge slightly below the director's villa. All of them were supplied with hot water from the steam house. Unfortunately, the foremen's houses are no longer standing. They were probably moved to Leith Harbour by Salvesen & Co during the 1940s. The director's villa (Fig 113,no 27) was a large two-storey wooden villa with a corrugated steel roof. The villa was strategically placed in the landscape so that the director could overlook the entire whaling station. According to Rossnes, a nice-looking and imposing villa was an important part of the company's

impression since the quality of the director's villa reflected the dignity, solidity, and significance of the company itself.⁷⁹⁵ The house had several rooms and a dining room of high standard, and a large porch that overlooked the whaling station. It had rooms for staff with a separate entrance, a kitchen, a washroom, a chicken house, and a flagpole.



Fig 117. The director's villa (Fig 113, 27) at Prince Olav Harbour. Photo by U.I. Gustafsson. LASHIPA 6/2009.

Strategies for social control

The design and spatial layout of the whaling station fulfilled secondary purposes beside production. There was no law enforcement on site so the company relied on a handful of loyal foremen and managers to support the company in case of conflict with their labour force. Although the British government had a magistrate on the island, he was hours away at Grytviken and could only negotiate in case of strikes. To compensate for this, the company developed ways to manifest leadership and create control.

Architecture, settlement plans, and the local landscape were used to establish hierarchies that created social control by dividing the work force. The accommodation

⁷⁹⁵ Rossnes. G. *Of whales and men – details of an industry: reflections on the value of the historical remains found in Prince Olav Harbour, South Georgia*. P: 43. 2011. In: *Managing Industrial & Cultural Heritage: South Georgia in Context*. Pp: 42-51.

area was important for production since it created social control and stimulated efficiency. In more populated areas, labour conflicts were overcome by negotiation or by replacing undesirable workers. However, on South Georgia (and the polar regions in general), companies often had to use other strategies (like the buildings) to avoid labour conflicts. These were necessary because the geographic remoteness and seasonal character of whaling operations made the projects expensive and sensitive to disruptions.

Using buildings to establish social control was common in the western world at that time.⁷⁹⁶ However, no one has studied how this was done at whaling stations in the polar regions. The archives show that control was achieved using salaries and contracts and fieldwork has revealed how this was achieved at individual whaling stations.

To manifest hierarchy and power relations, the manager's villa and the foremen's houses were separated from the workers' barracks by the hospital, the company store/slop chest, and a small trolley track. This distinction was supported by external and internal architectural features that emphasized their superior social status. The separation from the workers barracks created and enforced boundaries and manifested power relations. The elevated position of the manager's villa allowed the manager to see what was going on at the station and gave the impression that he had full insight into how everyone was working.

Two of the worker's barracks were supplied with hot water and one was not, indicating that the company separated workers of different status. As mentioned above, barrack 19 had fewer beds per room than barrack 18 and was divided into two sections by an internal wall. This indicates that workers of different statuses lived here and that they were physically separated by a wall. Barrack 18 probably accommodated skilled workers and barrack 19 unskilled workers. By separating the workers in the barracks with different living standards and salaries, the management created hierarchical divisions between the workers. The reason for this was to create a buffer for the

⁷⁹⁶ See for example Avango, Dag. *Sveagruvan: svensk gruvhantering mellan industri, diplomati och geovetenskap 1910-1934*. 2005.

management; workers with better living standards and better pay were less likely to create unrest or go on strike.

The part-based salary system differed between skilled station workers, unskilled station workers, and whale catcher crew members in a way that created dependence between the groups. Nielsen (1929) has argued that the system was healthy and sensible since it made “*the soil fruitless for Bolshevism*” because everyone had to work hard and energetically.⁷⁹⁷ Isachsen, on the other hand, argued that “*there is no more brotherhood in whaling than in gambling*”.⁷⁹⁸ Whatever one’s opinion might be of this system, it is clear that it stimulated production and economic profit by linking to worker’s income to their own input. Everyone would suffer financially if production came to a halt.

Until 1920, there was no collective salary agreement between the whaling companies and their workers. Instead, all workers were hired and contracted individually on a seasonal basis, with the exception of the gunners and captains. It was possible not to extend short term contracts if the workers misbehaved or disagreed with the management. The workers failed to unite and form unions, according to Tønnesen (1969), because they were an un-homogenous group that did not fit in any of the already established workers unions.⁷⁹⁹ This, however, does not mean that the whalers lacked ambitions to unify. On a number of occasions, workers at the whaling stations in South Georgia united and went on strike to achieve their goals. The first strike occurred in 1909 at Chr. Salvesen & Co’s whaling station at Leith Harbour when 30 to 40 workers refused to work for a period of three months. The motive for their strike was that they had been hired for whaling and not for construction work, which paid less. After three months of negotiations the workers were sent home. In 1913, another attempt to create a workers’ union occurred at the whaling station of Compañía Argentina de Pesca Sociedad Anónima; the workers established Grytviken Workers Union with 129 members.⁸⁰⁰ The company’s manager C. A. Larsen reported that the otherwise good

⁷⁹⁷ Nielsen. A. K. *En hvalfangerferd gjennom troperne til Sydishavet*. P: 95. 1921.

⁷⁹⁸ Isachsen. G. *Modern Norwegian Whaling in the Antarctic*. P: 387. In: *Geographical Review*, Vol 19, No 3. July 1929. Pp: 387-403. 1929.

⁷⁹⁹ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 93. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*. 1969.

⁸⁰⁰ Børresen. D.I. *Hvalfangere på alle hav...Arbeidskonflikter, organisering og svartelisting i hvalfangsten 1904-1914*. P: 141. In: *Arbeiderhistorie*, 2006. See also: Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 97. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*. 1969.

relationship between workers and the management had unfortunately been disrupted by socialistic elements after the union had declared *“to all the workers at whaling stations across the world to unite to achieve equal working conditions at the stations”*.⁸⁰¹

In an attempt to prevent similar events, Larsen sent the local policeman Joachim Petersen back to Norway to hire additional men so that they could get rid of what he regarded as the worst elements.⁸⁰² Two days after the strike had broken out in Grytviken, it spread to Leith Harbour where workers complained about poor food and accommodation, bad healthcare, and young boys doing adult work for less pay.⁸⁰³ After the strikes, religion was introduced as a tool for social control by local management. Shortly after the strike at Grytviken, C.A. Larsen declared that he intended to build a church. One aim of building this church was probably to prevent future strikes by influencing the political and religious attitudes of the workers so they fitted the needs of the company. Several whaling companies also added precautionary clauses to the workers' contracts, which prevented them from joining any union or *“organising meetings to discuss and by force try to achieve things that violate against the contract and the company's interest. In that case, I have forfeited my right to earned salary and part”*.⁸⁰⁴

To reinforce social control, the Norwegian Whaling Union was encouraged by Chr. Salvesen to initiate the black book system, which they did in 1913.⁸⁰⁵ The black book was a disclosed list that was updated annually by the local managers and distributed to all whaling companies.⁸⁰⁶ The black book provided a complete and updated list of workers, officers, and crew that were regarded as problematic and unwanted in the industry. Although the black book was used to share information between the whaling companies' management, most employees were aware of its existence. The whaling

⁸⁰¹ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 98. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling. 1969.

⁸⁰² Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 98. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling. 1969.

⁸⁰³ Børresen. D.I. *Hvalfangere på alle hav...Arbeidskonflikter, organisering og svartelisting i hvalfangsten 1904-1914*. P: 141. In: Arbeiderhistorie, 2006.

⁸⁰⁴ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 108. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling. 1969.

⁸⁰⁵ Børresen. D.I. *Hvalfangere på alle hav...Arbeidskonflikter, organisering og svartelisting i hvalfangsten 1904-1914*. P: 155. 2006.

⁸⁰⁶ *“Letter from the Norwegian Whaling Union, to Herr P. Bogen in Sandefjord. February 11, 1913”*. Archive: Hvalfangerforeningen-Korrespondanse. Vol: Div angaaende hvalfangstens historie. 1913. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

companies probably made sure that people knew about the black book system to create fear among the employees and encourage cooperative behaviour to avoid being included in the list. A listing had devastating effects for the employees and their families back home and for their future in the industry.

Basberg, Børresen, and Hjeltnes have called whaling stations totalitarian institutions that were similar to ships, where the management exercised control over its workforce and where the workers were unable to leave without the consent of the local manager or captain.⁸⁰⁷ Despite this, a number of strikes occurred in South Georgia between 1917 and 1920. The most severe of these strikes was in 1920. This strike spread from station to station and 220 workers went on strike at one station. The situation was not resolved until the British authorities despatched a warship, which was a powerful tool in the negotiations. These strikes were commonly caused by dissatisfaction with salaries and local costs at the company shop.⁸⁰⁸

Organised leisure activities were offered to the workers by the whaling companies to enhance the company feeling and station's identity. These included cinemas, theatres, libraries, choirs, football fields, and ski jump hills. Together, the whaling companies arranged annual "Olympics" where the whaling stations competed against each other in football, ski jumping, and running. Fieldwork showed that there was a cinema at Prince Olav Harbour, which was close to the workers' barracks, as well as a football field to the south of the accommodation area.

⁸⁰⁷ Basberg, B.L. *A ship ashore? Organisation and Living Conditions at South Georgia Whaling Stations, 1904-1960*. In: *International Journal of Maritime History*. XIX, No 1. 2002. Børresen, D.I. *Hvalfangere på alle hav...Arbeidskonflikter, organisering og svartelisting i hvalfangsten 1904-1914*. 2006. Pp: 136- 163. Hjeltnes, G. *Handelsflåten i krig. 1939-1945*. Pp: 108-109. In: *Sjømann. Lang vakt*. 1999.

⁸⁰⁸ "Report by R.R.S Discovery in South Georgia, to The Colonial Secretary in Stanley. January 14, 1927". The Falkland Islands Archive. Vol: SG & DEP. Whaling – General. Vol 2 (1922-1929).

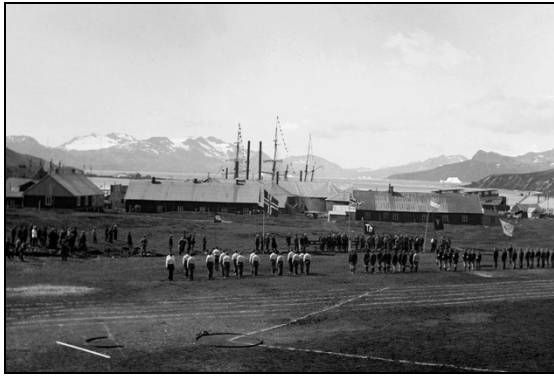


Fig 118 and 119. Olympic games at Grytviken Whaling Station. The photo has been published with the kind approval of Kommendør Chr. Christensen's Hvalfangst Museum in Sandefjord, Norway.⁸⁰⁹ Right: The graveyard at Prince Olav Harbour contains at least nine graves with three different types of crosses (stone, iron, and unmarked wooden crosses). Out of the five marked graves, four were Norwegians and one was Bulgarian.

The company used different strategies on their pelagic expeditions. The social structure onboard the ships was strictly hierarchical and the will of the captain was the law.⁸¹⁰ It is likely that Lever Bros, much like other whaling companies, feared strikes onboard the whaling fleet. To avoid this, several whaling companies, in collaboration with the British authorities, compensated for declining catches at South Georgia by relaxing the ban on catching humpback whales. This allowed whaling companies to maintain high production when catches of other species dropped.⁸¹¹

In addition to this, the Southern Whaling & Sealing Company paid their boat crews better than other companies, especially their gunners. This was done to secure the best and most experienced crews, which they hoped would increase catches and profits.⁸¹² The leader of the Discovery expeditions suggested that that the British authorities prohibit the use of a graded bonus system to prevent unhindered increase of the gunner's salary. He suggested the system used by the Southern Whaling & Sealing Company where the gunners were paid according to whale species and size.

⁸⁰⁹ Anderssons photo collection. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁸¹⁰ Basberg, B. L. *The Floating Factory: Dominant Designs and Technological Development of the Twentieth Century Whaling Factory Ships*. In: *The Northern Mariner*. Vol: 8, No: 1, 1998. See also: *A Ship Ashore? Organisation and living conditions at South Georgia whaling stations, 1904-1960*. In: *International Journal of Maritime History*. Vol: XIV, No: 1, 2002.

⁸¹¹ "Letter from the Colonial Office, to The Southern Whaling and Sealing Company. March 12, 1924". The Falkland Islands Archive. Vol: Dependencies. Whaling. Vol 3 (1923-1929).

⁸¹² "Enclosure no: II to Falkland Islands Despatch no: 153 of the 5th December 1923". The Falkland Islands Archive. Vol: Dependencies. Whaling. Vol 3 (1923-1929).

Southern Whaling & Sealing Company Ltd		
<i>Gunners salaries for the 1925–1926 season</i>		
FIXED/monthly (Kr)		400.00
BONUS	Blue whale	130.00
	Fin whale	90.00
	Humpback whale	50.00
	Sei and sperm whale	50.00
EXTRA	140 whales+	1,000
	Additional for every	
	tenth above	1,000

Fig 120. Salaries paid to gunners employed by the Southern Whaling & Sealing Company in the 1925–1926 season.⁸¹³

Fin whales were included in the Discovery expedition report. The suggested payment for the gunner was £8 for whales that were 60 feet or smaller, £13 for whales that measured 61–68 feet, £18 for whales measuring 69–78 feet, and £23 for whales larger than 77 feet.⁸¹⁴ This system encouraged the gunners to hunt larger whales and avoid smaller ones. Attracting good and competent gunners had always been a decisive factor for any whaling expedition, because the expeditions' success depended on the skills of the gunners. Good gunners were attracted by financial means. The accelerating trend of catches and production throughout the 1920s meant that huge salaries were paid to the gunners.

Who were the people that ventured to the Antarctic to work there and what were their motives for going there? Was the motive purely financial, or were there other contributing factors?

⁸¹³ "Contract The Southern Whaling & Sealing Company Ltd. December 2, 1925". The Falkland Islands Archive. Vol: SG & DEP. Whaling – General. Vol 2 (1922-1929).

⁸¹⁴ "Report by R.R.S Discovery in South Georgia, to The Colonial Secretary in Stanley. January 14, 1927". The Falkland Islands Archive. Vol: SG & DEP. Whaling – General. Vol 2 (1922-1929).



Fig 121. Workers at Prince Olav Harbour whaling station standing in front of the mess. In the background the main jetty and the elevated railway system are visible together with some of the large metal tanks. The photo has been published with the kind approval of Kommendør Chr. Christensen's Hvalfangst Museum in Sandefjord, Norway.⁸¹⁵

The whaler

The term “whaler” has often been used to describe all those that worked in the whaling industry. The common image is one of a gunner standing at the stern of a whale catcher with a firm grip on the harpoon cannon. Many of the people that worked in the industry were, according to Tønnesen, farmers supplementing their income or young boys who had to work to help support their families.⁸¹⁶ Although work is driven by survival, there may have been non-economic motives for working in the Antarctic, such as adventure, and the idea of becoming part of the polar hero myth and contemporary masculine

⁸¹⁵ The Prince Olav Harbour photo collection. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁸¹⁶ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 91. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*. 1969.

ideals associated with the whaling industry. Avango and Houltz have shown that such driving forces existed, and that working in one of the toughest and most challenging regions in the world gave a unique opportunity to prove one's abilities.⁸¹⁷ Although this was not studied in the context of the whaling industry, it is likely that these motives existed here.

The workforces at the whaling stations on South Georgia were dominated by Norwegians. A visit to one of the whaling station's cemeteries shows the international composition of the people that worked here. The tasks at the whaling station were diverse and consisted of flensers, lemmers, cooks, electricians, steam winch operators, stokers, chemists, gunners, blacksmiths, bakers, and many more. They all filled vital roles that enabled the industrial project to function as intended and generate economic profit for shareholders. It is interesting to note how workers at the whaling stations have been depicted by different authors at different times. Tønnesen and Johnsen (1954–1970) depicted the industry as a national activity arguing that "*Norwegian whaling in the Southern Ocean is certainly the toughest and most hazardous industry in the world. The Norwegians are alone in it, and will stay so since no other people in the world would endure the harshness and dog-life down there*".⁸¹⁸ This image fitted well with contemporary masculine and Darwinist ideals, and links the national abilities of industrial exploitation that fitted a desired narrative.

Isachsen (1929) have described the same group as accumulators of scientific knowledge stating that "*the Norwegian whalers discovered early on that whales in the northern and southern seas migrate to colder regions in spring and to warmer regions in autumn. They knew that whales migrated to find their food, drifting organisms which in spring develop in such enormous numbers that they colour the water*".⁸¹⁹ In contrast, the same group have also been portrayed as "*wrecked individuals, who are both spiritually and physically*

⁸¹⁷ Avango, D, and Houltz, A have discussed similar motives for workers in Arctic mines in *Arbetets hjältar? Skildringar av liv och arbete i Arktis under tidigt 1900-tal*. Pp: 37-52. In: *Arbete Pågår- i tankens mönster och kroppens miljöer*. Editors: Houltz, A, Lundström, B, Magnusson, L, Morell, M, Nisser, M, and Silven, E. 2008. See also: Gustafsson, U. I. *A Science and Technology Studies (STS) Approach on the Evolution of the Modern Whaling Industry*. In: *Proceedings from the LASHIPA and BOREAS workshop in St. Petersburg, November 2009. Circumpolar Studies, Vol 8*. 2011.

⁸¹⁸ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 86. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikking*. 1969.

⁸¹⁹ Isachsen, G. *Modern Norwegian Whaling in the Antarctic*. P: 402. In: *Geographical Review, Vol 19, No 3*. July 1929. Pp: 387-403. 1929.

broken. They are licentious criminals and escaped sailors who have ended up edgeways with society, and can hardly have been home over the last 15–20 years...".⁸²⁰ This multifaceted portrait may be explained by growing fears of the socialistic sentiments leading up to the 1917 Russian Revolution. These sentiments gained support in several industrial settlements during the early 20th century. Similar strikes to those that occurred in South Georgia took place in Spitsbergen (Svalbard) in 1917–1918 when syndicalist groups organised and coordinated strikes that halted production at several coal mines. The strike there came to an end after Norway used it as an opportunity to show that the archipelago had to be nationalised and that Norway had the will and capacity to exercise the necessary control by sending up military forces that quickly rounded up the strikers and sent their leaders back to Scandinavia.⁸²¹

A group of workers, which until recently have been overlooked in the history of South Georgia and perhaps the whole whaling industry in the Antarctic, is the African workers. African workers were, according to Børresen (2010), common at several whaling stations in South Africa.⁸²² African workers were cheap and the forced labour system (*shibalo*) made it attractive for the whaling companies to hire African workers. In addition to this, Børresen has pointed out that land confiscation and raised taxes in the African colonies at the turn of the 20th century resulted in a decline of agriculture and rise of unemployment.⁸²³ This benefited the whaling companies since it gave them an opportunity to reduce labour costs, particularly during the First World War when the companies were able to hire African workers who were much cheaper than European workers. In addition, African workers were less demanding when it came to the quality of food and accommodation.⁸²⁴ African workers were also accustomed to social segregation and were regarded as less prone to challenging authority than workers from

⁸²⁰ Johansen, A. S. *Prestetjenesten på Syd Georgia*. P: 45. In: Sandefjordmuseenes Årbok 1999. Pp: 45-66. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway. 1999.

⁸²¹ Avango, D. *Sveagruvan: Svensk gruvhantering mellan industri, diplomati, och geo-vetenskap*. 2005. See also: Arlov, T. B. *Svalbards Historie*. 2003.

⁸²² Børresen, D.I. *There is plenty of black labour to be had, African labourers in modern whaling*. Pp: 131-140. In: Whaling & History III. Editor: Ringstad, J.E. Publication No 33, Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway. 2010.

⁸²³ Børresen, D.I. *There is plenty of black labour to be had, African labourers in modern whaling*. Pp: 133. In: Whaling & History III. Editor: Ringstad, J.E. Publication No 33, Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway. 2010.

⁸²⁴ Børresen, D.I. *The boys will die like flies; Afrikanere på hvalfangst I Antarktis 1908-1920*. P: 79. In: Kolonitid-Nordmenn på eventyr og big business I Afrika og Stillehavet. Editors: Kjaerland, K.A and Rio, K.M. 2009.

Norway, Sweden, and elsewhere where unions and socialistic ideas were taking shape. Irvin and Johnson were no exception, and they frequently used African workers in their sealing activities.⁸²⁵ When the Southern Whaling & Sealing Company was formed in 1911, they continued to hire African workers for their whaling operations in Africa. In 1913 and 1914, the company hired African workers for the S/S Restitution destined for South Georgia from the Shepstone Whaling Company in Durban.⁸²⁶ The company leased a whaling station from this company later on.⁸²⁷ These workers (50 in 1913 and 34 in 1914) were paid substantially less than other skilled workers. African workers had one year contracts and were not included in the part system. The workers that the company contracted in 1913 and 1914 were paid a fixed salary of £4 per month, which included food and accommodation.⁸²⁸ Even though these salaries were lower than those of other workers, they were still approximately 25% higher than other salaries paid in Africa.⁸²⁹ The Southern Whaling & Sealing Company frequently hired Zulu workers for their whaling activities in South Georgia, and continued to do so at least until the end of the 1920 season, and probably until the station was closed in 1931. According to Børresen, African workers were also employed at Grytviken whaling station and at Ocean Harbour whaling station.⁸³⁰

Fieldwork showed that the workers at Prince Olav Harbour were divided into several groups. African workers may have been accommodated in a separate barrack or on a separate floor. The graves at Prince Olav Harbour also reflect differences in social status. There are a number of unmarked graves with simple wooden crosses in the graveyard,

⁸²⁵ "The History of the Irvin and Johnson Limited, Part 1 & 2. By Greenwood-Johnson, E, Abao, H, Rosenthal, E". Unpublished confidential file. The Private Collection of Glenn McIntosh. Australia. Børresen, D.I. *The boys will die like flies; Afrikanere på hvalfangst I Antarktis 1908-1920*. P: 87. In: Kolonitid-Nordmenn på eventyr og big business I Afrika og Stillehavet. Editors: Kjaerland, K.A and Rio, K.M. 2009.

⁸²⁶ Børresen, D.I. *There is plenty of black labour to be had, African labourers in modern whaling*. P: 136. In: Whaling & History III. Editor: Ringstad, J.E. Publication No 33, Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway. 2010.

⁸²⁷ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. Vol. 2. P: 448. In: Den Modern Hvalfangst Historie- Opprinnelse og utvikling. 1967.

⁸²⁸ Børresen, D.I. *There is plenty of black labour to be had, African labourers in modern whaling*. Pp: 136f. In: Whaling & History III. Editor: Ringstad, J.E. Publication No 33, Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway. 2010.

⁸²⁹ Børresen, D.I. *The boys will die like flies; Afrikanere på hvalfangst I Antarktis 1908-1920*. P: 89. In: Kolonitid-Nordmenn på eventyr og big business I Afrika og Stillehavet. Editors: Kjaerland, K.A and Rio, K.M. 2009.

⁸³⁰ Børresen, D.I. *There is plenty of black labour to be had, African labourers in modern whaling*. P: 137. In: Whaling & History III. Editor: Ringstad, J.E. Publication No 33, Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway. 2010.

which are noticeably different from the decorative and informative iron and stone memorial crosses.

Børresen argued that whaling companies hired African workers because the First World War made it difficult to contract and transport European workers to South Georgia.⁸³¹ There were, as mentioned earlier, both economic and social motives for hiring African workers. Børresen may be suggesting that the use of African workers increased because of the war.

The international and multi-ethnic composition of the workers at whaling stations in South Georgia meant that many cultural aspects influenced the relationship between the working groups and the local management. Cultural and racial conflicts probably occurred at the stations. One should perhaps not overlook that Scandinavian workers feared that the increasing number of non-Scandinavians within the industry would ultimately replace them, or that they would have to reduce their salaries to avoid being replaced by cheaper workers who were gaining experience and knowledge over the years.

The sale of Southern Whaling & Sealing Company's local networks

To what extent Irvin and Johnson actively looked to attract investors to their whaling company is unclear due to a lack of written sources. Jackson (1978) suggested that the group reacted quickly to the Lever Bros offer to purchase the assets, concessions, and lease of the Southern Whaling & Sealing Company.⁸³² The whaling station had an estimated value in excess of £250,000.⁸³³

Lever Bros wanted to buy the company from Irvin and Johnson to increase their control over whale oil for their soap and margarine business. The market for butter substitutes had increased because of the war and, according to Wilson, the demand was likely to

⁸³¹ Børresen, D.I. *The boys will die like flies; Afrikanere på hvalfangst I Antarktis 1908-1920*. P: 77. In: *Kolonitid-Nordmenn på eventyr og big business I Afrika og Stillehavet*. Editors: Kjaerland, K.A and Rio, K.M. 2009.

⁸³² Jackson, G. *The British Whaling Trade*. P: 193. 1978.

⁸³³ Jackson, G. *The British Whaling Trade*. P: 174. 1978.

increase and new plants were either being built or were going to be built.⁸³⁴ These developments increased the need for whale oil. Once the opportunity presented itself, Leverhulme did not hesitate to increase his existing ownership and control of whale oil production.⁸³⁵ Buying the Southern Whaling & Sealing Company fitted well with Lever Bros' strategy to control whale oil production, and as their production increased so did their need for whale oil.

According to Jackson, the Southern Whaling & Sealing Company had done well during the war, and made larger profits than Salvesen had done in the post-war season.⁸³⁶ There are, however, no sources to support such a conclusion. On the contrary, the available data indicate that Irvin and Johnson made substantial financial losses on their whaling project in South Georgia, and that these financial setbacks probably prompted Irvin and Johnson to sell their whaling station and company to Lever Bros.

Phase three (Lever Bros/Unilever 1920–1931)

Phase three can be divided into one shore-based operation at Prince Olav Harbour whaling station and one pelagic operation from 1922 onwards (as Lever Bros adapted their industrial activities in the Antarctic to increase their control of whale oil production). Although only the shore-based operation is relevant to the site under discussion in this thesis, I have chosen to incorporate the pelagic operation as well since it affected and dictated the developments and activities at the whaling station. The pelagic operation was an adaptation of the local network at Prince Olav Harbour.

New management

In September 1919, Lever Bros purchased the Southern Whaling & Sealing Company and its production facilities at South Georgia, including a small fleet.⁸³⁷ One of the first things that Lever Bros did was to hire a new management to run the company's activities.

Johnson stayed for one year after the purchase to assist the new management.⁸³⁸ The

⁸³⁴ Wilson, C. *The history of Unilever*. Vol: 1. P: 244. 1954.

⁸³⁵ Wilson, C. *The history of Unilever*. Vol: 1. P: 245. 1954.

⁸³⁶ Jackson. G. *The British Whaling Trade*. P: 193. 1978.

⁸³⁷ Jackson. G. *The British Whaling Trade*. P: 174. 1978.

⁸³⁸ "The History of the Irvin and Johnson Limited, Part 1 & 2. By Greenwood-Johnson.E, Abao.H,Rosenthal. E". Unpublished confidential file. P: 10. The Private Collection of Glenn McIntosh. Australia.

board consisted of three directors: Harold Robert Greenhalgh, John Inglis, and Norman Charles Watt who was managing director.⁸³⁹ Watts had previously been employed by the British government as a customs officer at New Island in the Falkland Islands.⁸⁴⁰ As such, he had knowledge of the whaling industry, including its regulations and policy.

Reconstructing the local network at Prince Olav Harbour

Lever Bros had several local managers of the Southern Whaling & Sealing Company in South Georgia. The Norwegian Mathias Andersen was the local manager from 1919 to 1921.⁸⁴¹ He was replaced in 1922 by B.R. Bostock who stayed on until 1924 when he was replaced by the Norwegian Einar Abrahamsen.⁸⁴² Abrahamsen was the local manager of company until the station closed in 1931.

For the 1919–1920 season, the management decided not to continue leasing the whaling station of Sandefjord Hvalfangeri A/S. Instead, they decided to focus on whaling operations at Prince Olav Harbour. The station had, as mentioned above, ten blubber cookers and 41 pressure cookers, in addition to clearing and storage tanks that gave the station a processing capacity of six blue whales or nine fin whales per day.⁸⁴³ The station still lacked a guano factory with full utilisation capacity, which, according to the concession, they were obliged to have.⁸⁴⁴ The Southern Whaling & Sealing Company had not built a guano factory for several reasons. Firstly, the original station that was moved from Africa did not have a guano factory. Secondly, the war had made it difficult to buy and transport technical equipment from Europe to the Antarctic. Thirdly, Irvin and

⁸³⁹ "Letter from the Southern Whaling & Sealing Company Ltd, to the Colonial Office. April 28, 1922". Also in: "Letter from The Southern Whaling & Sealing Company Limited, to His Excellency the Governor in Stanley. December 23, 1919". The Falkland Islands Archive. Vol: Dependencies. Whaling. Vol 2 (1920-1922), and South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁸⁴⁰ "Application of Southern Whaling and Sealing Co. for 2nd lease of land in South Georgia. December 23, 1919". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁸⁴¹ "Report on the whale oil industry of South Georgia for the six months from 1st July to 31st December 1919, shewing totals for the whole year. By Edw. B. Binnie". See also: "Exportation Bond signed by acting manager M. Andersen, and the secretary R. Heyerdahl. September 21, 1919". The Falkland Islands Archive. Vol: South Georgia. Whaling. Vol 2 (1920-1939).

⁸⁴² "Contract The Southern Whaling & Sealing Company Ltd. December 2, 1925". The Falkland Islands Archive. Vol: SG & DEP. Whaling – General. Vol 2 (1922-1929).

⁸⁴³ "Report on the present capacity of South Georgia whaling stations, by Edw.B. Binnie, Stipendary Magistrate, to The Hon. The Colonial Secretary, Falkland Islands. August 5, 1919". The Falkland Islands Archive. Vol: South Georgia. People – whaling. Vol 2 (1936 – 1964).

⁸⁴⁴ "Letter from Richard Irvin & Sons Ltd, to The Under Secretary of State, Colonial Office in London. June 28, 1911". The Falkland Islands Archives. Vol: F. Confidential despatch book Jan 1909 – Aug 1911. No 40.

Johnson had focused on maximising whale oil production in accordance with British demands. Irvin and Johnson had planned to build a guano factory at Prince Olav Harbour whaling station to comply with the British demand of full utilisation. In the summer of 1919, the company had purchased the necessary technical equipment to build the factory,⁸⁴⁵ but for reasons unknown the manager Mathias Andersen did not put it into production until after Lever Bros had purchased the station in 1921. This is probably because Lever Bros prioritised whale oil production over the production of by-products, since their primary interest lay in oil. That the company did not prioritise operating the guano factory is supported by the fact that the company only produced 896 bags of guano from a catch of 933 whales.⁸⁴⁶

The local manager Andersen applied a waste policy at the station. According to the magistrate of South Georgia, there were frequently too many whales buoyed outside the station waiting to be processed.⁸⁴⁷ Managers of competing whaling companies in South Georgia had also reported to the magistrate that they had often seen the Southern Whaling & Sealing Company's spare whale catcher far out at sea towing whale carcasses for dumping. These reports encouraged the magistrate to visit Prince Olav Harbour in the season of 1921–1922, where he saw that 47 whales were lying buoyed waiting to be processed. The magistrate halted further hunting operations until the Southern Whaling & Sealing Company had processed the whales. In a report to the Colonial Office, the magistrate suggested that the British authorities should consider appointing a customs officer at Prince Olav Harbour to prevent the company from wasting raw materials. Their wasteful policy had apparently caused considerable annoyance at the other whaling stations because it reduced the available resources for all actors. These wasteful activities were reported to the magistrate.

The local manager, Andersen, probably chose not to operate the guano factory to save costs on coal.

⁸⁴⁵ "The Magistrates report on the whale industry in South Georgia. June 10, 1922". The Falkland Islands Archive. Vol: South Georgia. Whaling. Vol 2 (1920-1939).

⁸⁴⁶ "Statement by The Southern Whaling & Sealing Company Ltd for the 1921/22 season. May 16, 1922". The Falkland Islands Archive. Vol: South Georgia. Whaling. Vol 2 (1920-1939).

⁸⁴⁷ "Report on the whale oil industry in South Georgia for the 1921-22 season. Edw. B. Binnie Magistrate, to The Honourable Colonial Secretary in Stanley. June 10, 1922". The Falkland Islands Archive. Vol: South Georgia. Whaling. Vol 2 (1920-1939).

Catches and production in South Georgia 1921–1922 season

<u>Company</u>	<u>Catch</u>	<u>Production</u>	<u>Average</u>	<u>No. catchers</u>
Southern Whaling & Sealing	933	64,679	69.3	5
Vestfold Wh Company	702	52,155	74.0	5
South Georgia Company	703	49,000	69.7	4
A/S Tønsberg	574	45,050	78.5	4
Cia Arg Pesca	438	34,878	79.6	4

Figure 122. Catches and production in South Georgia (all companies) for the 1921–1922 season.⁸⁴⁸

Fieldwork revealed that assembling a guano factory was a relatively difficult task since it could not be purchased pre-constructed from a manufacturer and assembled on site. Lever Bros engineers and workers constructed the guano factory from technical parts manufactured by a variety of companies in Europe and the USA, and assembled these parts into a production system that could produce guano from whale meat residues and bones. By doing so, the company adapted their local network to the political whaling conditions laid down by the British authorities.



Fig 123 Left: A hot air fan produced by the American company Buffalo Forge Company in Buffalo, New York. The fan was an integrated part of the guano factory, where it was used to force large amounts of heated air into the rotating guano drier to dry the residues. Photo: U.I. Gustafsson. LASHIPA 6/2009.

⁸⁴⁸ Data from: "Report on the whale oil industry in South Georgia for the 1921-22 season. Edw. B. Binnie Magistrate, to The Honourable Colonial Secretary in Stanley. June 10, 1922". The Falkland Islands Archive. Vol: South Georgia. Whaling. Vol 2 (1920-1939).

Besides the guano factory and the football field, Lever Bros made few additional investments at Prince Olav Harbour whaling station. This was because the whaling station, from the housing units to the production system, was relatively new and because whale oil prices had started to decline in the early 1920s. Lever Bros did, however, remodel the fleet in 1922–1923, keeping only the best vessels⁸⁴⁹ after securing a concession for pelagic whaling in the South Shetland Islands during the 1921–1922 season.⁸⁵⁰



Fig 124. Prince Olav Harbour whaling station in the 1920s. The main production area is located in the lower part of the photo, while the accommodation area is visible on the ridge in the back overlooking the entire area. The photo illustrates how restricted the available building space was in the area. The photo has been published with the kind approval of Kommendør Chr. Christensens Hvalfangstmuseum, Norway.

⁸⁴⁹ Jackson. G. *The British Whaling Trade*. P: 176. 1978.

⁸⁵⁰ "Letter from the Crown Agents, to The Colonial Secretary at the Falkland Islands. September 27, 1922". The Falkland Islands Archive. Vol: Dependencies. Whaling. Vol 2 (1920-1922).

Strikes, challenges, and changing circumstances

The first phase of the 1919–1920 hunting season started well for Lever Bros. By the end of December, the company had caught 147 whales and produced 7,653 barrels of whale oil.⁸⁵¹ In January, a strike broke out at the station, which reduced production. This strike was not confined to Prince Olav Harbour. A conflict had started at Grytviken whaling station just after New Year's Eve 1920, and the workers had given the management of Compañía Argentina de Pesca Sociedad Anónima an ultimatum with a January 16 deadline. The Argentinean whaling company asked the British authorities for assistance. The British authorities sent a warship into the harbour, which gave the magistrate and the company management a powerful tool for negotiations with the workers. The strikes at several whaling stations across the island suddenly stopped.⁸⁵² The workers who (according to the managers) had instigated the strike at Grytviken were deported from the island.⁸⁵³ The use of warships had been discussed in the aftermaths of the 1919 strike, when some workers had proclaimed their intention to make South Georgia a Bolshevik state.

But how did the conflicts start, and how did they affect production at the station? Unlike the previous season, this strike broke out at the end of the season. The conflict was between the management and workers, which included approximately 100 African workers that were employed for the season. According to Børresen, the strike was motivated by unclear contracts. The African workers had been contracted at fixed annual rates and were not part-holders in the overall production. At some point during the season, the local manager re-negotiated the contracts between the company and the workers and changed them so the African workers were included in the part-based salary system. When the workers arrived back in Cape Town, the company failed to recognise their agreement after the South African authorities proclaimed that the whole group had been illegally recruited.⁸⁵⁴ The problems were solved by the South African

⁸⁵¹ "Report on the whale oil industry of South Georgia for the six months from 1st July to 31st December 1919, shewing totals for the whole year. From Edw. B. Binnie, to The Hon. Colonial Secretary Falkland Islands". The Falkland Islands Archive. Vol: South Georgia. Whaling. Vol 2 (1920-1939).

⁸⁵² Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 110. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*. 1969.

⁸⁵³ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 110. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*. 1969.

⁸⁵⁴ Børresen. D.I. *There is plenty of black labour to be had, African labourers in modern whaling*". Pp: 138. In: *Whaling & History III*. Editor: Ringstad. J.E. Publication No 33, Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway. 2010.

Native Affairs Department, who forced the whaling company to give the 100 African workers a 20% pay rise and additional pay for special work.⁸⁵⁵ Although this strike took place at the end of the season and did not affect production much, the companies feared strikes and did everything to avoid them. Equipping and hiring personnel for a hunting season meant that large investments were made prior to the production of oil. Operating in the Antarctic was also dangerous, and investments could be lost in the ice. In addition, the Antarctic hunting season was relatively short and any disturbance in the flow of production could result in huge losses. The use of social strategies as described earlier must be understood and analysed on the basis of this.

In early 1920, a fire broke out at Prince Olav Harbour whaling station and destroyed the bone cookery.⁸⁵⁶ The cookery was important for whale oil production and the company faced additional expenses to re-erect the cookery for the upcoming season. It is uncertain how much this affected overall production for this season.

The British authorities' policy regarding the distribution of whale oil also posed challenges for Lever Bros. The Southern Whaling & Sealing Company managed to catch 550 whales and produced 27,663 barrels of whale oil in the 1919–1920 season,⁸⁵⁷ but British policy reduced their ability to use the oil for their own commercial purposes. During the First World War, Lever Bros had received whale oil through an agreement between the Minister of Munitions and the companies Joseph Crosfield & Sons Ltd and Joseph Watson & Sons Ltd. Britain's policy was motivated by their interest in using whale oil to produce glycerine for explosives.⁸⁵⁸ These regulations did not end when the war ended. Instead, the British authorities decided to extend the control they had had

⁸⁵⁵ Børresen, D.I. *There is plenty of black labour to be had, African labourers in modern whaling..* Pp: 139. In: *Whaling & History III*. Editor: Ringstad, J.E. Publication No 33, Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway. 2010.

⁸⁵⁶ "Report on the whaling industry in South Georgia for the season 1919-1920, by Edw. B. Binnie. Stipendary Magistrate, to the Hon. The Colonial Secretary Falkland Islands. April 21, 1920". The Falkland Islands Archive. Vol: South Georgia. Whaling. Vol 2 (1920-1939).

⁸⁵⁷ "Report on the whaling industry in South Georgia for the season 1919-1920, by Edw. B. Binnie. Stipendary Magistrate, to the Hon. The Colonial Secretary Falkland Islands. April 21, 1920". The Falkland Islands Archive. Vol: South Georgia. Whaling. Vol 2 (1920-1939).

⁸⁵⁸ "An agreement made the Twenty-fifth day of February 1916 between His Majesty's Minister of Munitions of War, and Lever Brothers Limited, Joseph Crosfields & Sons Limited and Joseph Watsons & Sons Limited". Archive: Hvalfangerforeningen. Diverse Pakkesaker. Vol: 3. 1912-1922. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

over the whaling industry's production until the end of the 1920 season.⁸⁵⁹ As a result, the Southern Whaling & Sealing Company and Lever Bros had to sell 27,663 barrels of whale oil to the British authorities at a fixed amount of £62.10 per barrel.⁸⁶⁰ The extension of the war-time regulations only applied to the Southern Whaling & Sealing Company and Chr. Salvesen & Co, who were British companies. Their competitors from Norway, Argentina, and Chile were allowed to sell their produce on the open market for £20 more per barrel than the two British companies were able to sell for.⁸⁶¹ Lever Bros were only allowed to purchase 47.4% of their whale oil, which was stipulated in the agreement at a fixed price.⁸⁶² What effect this had on the Southern Whaling & Sealing Company's first season profit is not known.

Lever Bros could not have purchased the Southern Whaling & Sealing Company at a worse time. The expected increase in demand for whale oil and whale-related products on the world markets proved to be unfounded. Instead, competing vegetable oils began flooding the market, reducing the demand and prices for whale oil. By the end of 1921, the market had stagnated. This development surprised the soap and margarine manufacturing companies, who had expected a post-war increase in unemployment and a market for cheap margarine. Lever Bros had prepared for an improved post-war market by purchasing whaling companies (including Harris Whaling & Fishing Company as well as Harpunen Whaling Company in the Hebrides in 1922 after the domestic ban was lifted) and securing more than 50% of the shares in De-No-Fa.⁸⁶³ Throughout the 1920s, these whaling stations largely functioned as testing and research platforms for Lever Bros Antarctic operations.⁸⁶⁴ These daughter companies had access to Lever Bros' network, but never became profitable because the whale populations in these areas were depleted after decades of industrial exploitation. Yet Lever Bros chose to keep these whaling stations operational and cover their economic losses through the profits

⁸⁵⁹ Jackson. G. *The British Whaling Trade*. P: 190. 1978.

⁸⁶⁰ Jackson. G. *The British Whaling Trade*. P: 190. 1978.

⁸⁶¹ Hart. I. B. *Whaling in the Falkland Islands Dependencies 1904-1931. A history of shore and bay-based whaling in the Antarctic*. P: 316. 2006.

⁸⁶² "An agreement made the Twenty-fifth day of February 1916 between His Majesty's Minister of Munitions of War, and Lever Brothers Limited, Joseph Crosfields & Sons Limited and Joseph Watsons & Sons Limited". Archive: Hvalfangerforeningen. Diverse Pakkesaker. Vol: 3. 1912-1922. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁸⁶³ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914.*. Vol: 2. P: 80f. In: Den Modern Hvalfangst Historie- Opprinnelse og utvikling. 1967. See also: Jackson. G. *The British Whaling Trade*. P: 209. 1978.

⁸⁶⁴ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914.* Vol: 2. P: 80f. In: Den Modern Hvalfangst Historie- Opprinnelse og utvikling. 1967. See also: Jackson. G. *The British Whaling Trade*. P: 209. 1978.

made by the Southern Whaling & Sealing Company.⁸⁶⁵ The situation meant that Lever Bros were able to buy whale oil cheaply and stock up their supply. Having done so, the company were almost unharmed by the crisis despite being a producer themselves, and were not dependent on external suppliers. The market changes were positive for Lever Bros as competitors went bankrupt, enhancing their dominant position in the soap and margarine industries.

In what appears to have been an attempt to counteract the dominant position of Lever Bros in the market, whale oil producers in Norway, Great Britain, and Africa tried to form a syndicate to prevent Lever Bros from using their position to influence whale oil prices. Many whaling companies feared that Lever Bros' dominant position could have a devastating effect on their financial situation if Lever Bros increased their production to dump prices. According to Tønnesen, the attempt failed due to difficult economic circumstances and the strategic investments of Lever Bros, who seized control of the African Niger Company and formed a buyers ring together with Bergh & Jurgens.⁸⁶⁶

Concerned that whaling companies would try to increase their catches and production to compensate for declining prices and decimate the whale populations, the British authorities introduced a system of open and closed seasons in South Georgia. The whaling companies were only allowed to hunt whales during the open period from September 15 until May 31.⁸⁶⁷ In 1921, Lever Bros and the Southern Whaling & Sealing Company started the hunting season at Prince Olav Harbour on October 1.⁸⁶⁸ Because of falling whale oil prices, the company decided to run the station at reduced capacity and only operate the blubber cookery until late December. This significantly reduced the overall output of the station since whale meat and bones were not processed into oil.⁸⁶⁹

⁸⁶⁵ Jackson. G. *The British Whaling Trade*. P: 209. 1978.

⁸⁶⁶ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937.* Vol: 3. P: 189. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*. 1969.

⁸⁶⁷ "Report on the whaling industry in South Georgia for 1920/21. W. Barlas Stipendary Magistrate, to The Honourable Colonial Secretary in Stanley. June 20, 1921". The Falkland Islands Archive. Vol: South Georgia. Whaling. Vol 2 (1920-1939).

⁸⁶⁸ "Report on the whale oil industry in South Georgia for the 1921-22 season. Edw. B. Binnie Magistrate, to The Honourable Colonial Secretary in Stanley. June 10, 1922". The Falkland Islands Archive. Vol: South Georgia. Whaling. Vol 2 (1920-1939).

⁸⁶⁹ "Report on the whale oil industry in South Georgia for the 1921-22 season. Edw. B. Binnie Magistrate, to The Honourable Colonial Secretary in Stanley. June 10, 1922". The Falkland Islands Archive. Vol: South Georgia. Whaling. Vol 2 (1920-1939).

Competition within the whaling industry increased during the 1920s as prices for whale oil dropped and companies increased their production to remain profitable. This was a natural reaction, necessary to generate the economic dividends to maintain support of global networks and to meet the increasing costs of Antarctic shipping. During the inter-war period, Lever Bros became one of the largest producers of whale oil in the world, as well as one of the largest producers of soap and margarine. The modern whaling industry was dominated by the company both as a producer and buyer. The dropping whale oil prices were positive for Lever Bros since they used the oil to produce soap. Dropping prices and increasing production meant that they could secure more raw materials cheaply. This decision brought Lever Bros into conflict with several margarine producers who argued that the company should use whale oil to produce margarine rather than soap.⁸⁷⁰

Pelagic whaling

The demand for cheap whale oil to produce margarine in Europe, USA, and elsewhere, encouraged the whaling companies operating in the Antarctic to compensate for falling prices by increasing their production throughout the 1920s. This partly explains why the whaling industry shifted from shore-based whaling to pelagic whaling during this period. The hunting grounds in South Georgia were becoming overexploited and whale hunting could not be expanded, even if British management and concessions would have allowed it. To find new unrestricted hunting grounds in Antarctica, pelagic production units that operated in conjunction with larger and more powerful whale catchers were necessary. Even though prices for whale oil dropped from £37 to £12 per ton from 1924 to 1931,⁸⁷¹ the global production of whale oil increased from 716,246 barrels (1923–1924 season),⁸⁷² to 3,686,976 barrels (1930–1931 season) – an increase of 414.8%.⁸⁷³

The Southern Whaling & Sealing Company transformed their local network from shore-based to pelagic whaling. In the 1921–1922 season, the company secured a concession

⁸⁷⁰ Jackson. G. *The British Whaling Trade*. P: 184. 1978.

⁸⁷¹ Hart. I. B. *Whaling in the Falkland Islands Dependencies 1904-1931. A history of shore and bay-based whaling in the Antarctic*. P: 316. 2006.

⁸⁷² International Whaling Statistics. 1930.

⁸⁷³ Norsk Hvalfangsttidende. No 3, March 1932. P: 55. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

for pelagic whaling operations in the South Shetland Islands and remodelled its fleet.⁸⁷⁴ The company's first pelagic expedition used the new factory ship *Southern Queen* and was led by Captain Lars Andersen.⁸⁷⁵ This ship had ten open cookers, 20 pressure cookers, 20 clearing tanks, and internal tanks that could carry 5121.7 tons of whale oil.⁸⁷⁶ Interestingly, this ship was owned by a subsidiary company under Lever Bros named *A/S Southern Queen* that was registered in Oslo, Norway, so she sailed under the Norwegian flag. The Norwegian manager of *A/S Southern Queen*, Thoresen, leased out the factory ship and its Norwegian crew to the Southern Whaling & Sealing Company.⁸⁷⁷



Fig 125 and 126. The Southern Queen steaming and processing whales alongside the hull in the South Shetland Islands in the 1922–1923 season. The photos have been published with the kind approval of P. Waddingham's Private Collection.

The company upgraded the entire fleet of the Southern Whaling & Sealing Company and bought three new whale catchers (*Southern Pride*, *Southern Flower*, and *Southern Floe*). They kept the best whale catchers from the old fleet. These investments were covered by increasing the company's nominal capital from £100,000 to £1,000,000.⁸⁷⁸ Hart (2006) claims that Lever Bros also re-built the whaling station at Prince Olav Harbour at

⁸⁷⁴ "Letter from the Crown Agents, to The Colonial Secretary at the Falkland Islands. September 27, 1922". The Falkland Islands Archive. Vol: Dependencies. Whaling. Vol 2 (1920-1922).

⁸⁷⁵ "Enclosure no: II to Falkland Islands Despatch no: 153 of the 5th December 1923". The Falkland Islands Archive. Vol: Dependencies. Whaling. Vol 3 (1923-1929).

⁸⁷⁶ "Letter from the Crown Agents, to The Colonial Secretary at the Falkland Islands. September 27, 1922". The Falkland Islands Archive. Vol: Dependencies. Whaling. Vol 2 (1920-1922). The *Southern Queen* operated in conjunction with three whale catchers: *Southern Breeze*, *Southern Maid* and *Barrowby*. After she was re-built, her tonnage was increased to 5648 tons.

⁸⁷⁷ Hart. I. B. *Whaling in the Falkland Islands Dependencies 1904-1931. A history of shore and bay-based whaling in the Antarctic*. P: 339. 2006.

⁸⁷⁸ Jackson. G. *The British Whaling Trade*. P: 196. 1978.

the same time.⁸⁷⁹ This seems unlikely, however, since the blubber, meat, and bone cookeries at Prince Olav Harbour had just been completed. Unfortunately, Hart did not give a source to support his claim.

The result of the company's first pelagic expedition was a catch of 518 whales,⁸⁸⁰ from which they produced 28,706 barrels of whale oil, an average yield of 55.4 barrels per whale.⁸⁸¹ This was the second largest production of all pelagic expeditions in the area, only surpassed by S/S Ronald's 37,098 barrels. It is interesting to note that the average production of 55.4 barrels per whale was far below the average of other expeditions, which produced up to 70.4 barrels per whale.⁸⁸² This might be because the other expeditions caught larger whales, had better machinery therefore obtained a higher yield from the raw materials, or started the hunting season at a more optimal time.

The company's local network faced entirely new challenges when they moved from shore-based to pelagic whaling around the Antarctic Peninsula. Compared with contemporary whaling grounds in South Georgia and the South Shetland Islands, the environment was more demanding and the season was shorter, which complicated expeditions in the area. Fieldwork conducted in 2009 and 2010 showed that the companies adapted to these circumstances by establishing anchorages and storage points wherever land was exposed and where harbours could be accessed with large ships.

Access to freshwater was another challenge facing pelagic expeditions. The peninsula is covered by an icecap, which the companies used as a source of freshwater in the summer. Like others, the Southern Whaling & Sealing Company collected and melted snow onboard the factory ship. They also collected melted water in water barges, allowing them to store relatively large quantities of water onboard the factory ship to

⁸⁷⁹ Hart, I. B. *Whaling in the Falkland Islands Dependencies 1904-1931. A history of shore and bay-based whaling in the Antarctic*. P: 172. 2006.

⁸⁸⁰ 488 blue-and fin whales and 30 humpback whales. "Letter from H. Henniker-Heaton, Government House in Stanley, to His grace the Duke of Devonshire, Secretary of State for the Colonies. December 5, 1923". The Falkland Islands Archive. Vol: Dependencies. Whaling. Vol 3 (1923-1929).

⁸⁸¹ "Letter from H. Henniker-Heaton, Government House in Stanley, to His grace the Duke of Devonshire, Secretary of State for the Colonies. December 5, 1923". The Falkland Islands Archive. Vol: Dependencies. Whaling. Vol 3 (1923-1929).

⁸⁸² "Letter from H. Henniker-Heaton, Government House in Stanley, to His grace the Duke of Devonshire, Secretary of State for the Colonies. December 5, 1923". The Falkland Islands Archive. Vol: Dependencies. Whaling. Vol 3 (1923-1929).

maintain constant production. Since the Southern Queen was smaller and unable to store enough freshwater for longer expeditions, the expeditions could not stay far from land for longer periods.

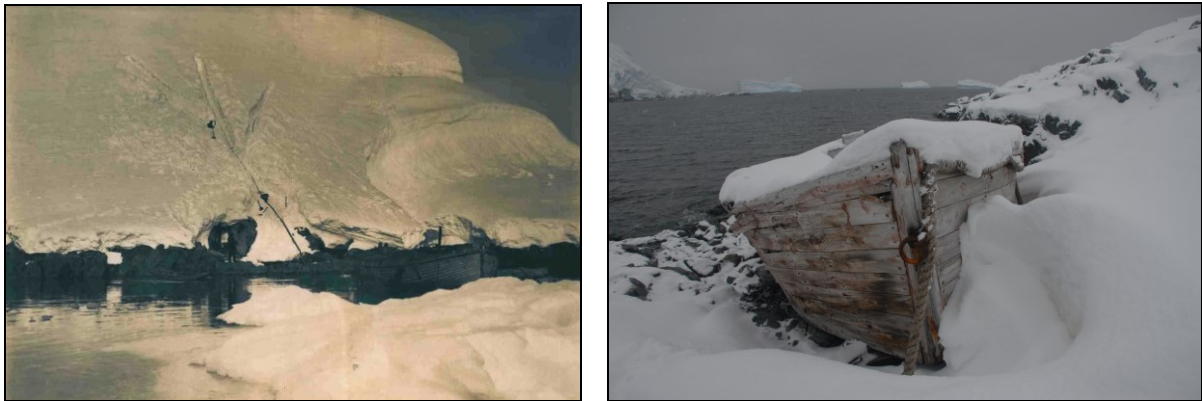


Fig 127 and 128. Workers collecting water by digging trenches in the snow at the Antarctic Peninsula during the Southern Queen expedition in 1922–1923. The photo has been published with the kind approval of P. Waddingham's private collection. Right: Abandoned water barges at Enterprise Island, Antarctic Peninsula. Photo: U.I. Gustafsson. LASHIPA 8/2010.

For the 1923–1924 season, the Southern Queen was joined by three 220-ton whale catchers the company commissioned the year before, as well as the tanker Southern King.⁸⁸³ This gave the company larger hunting capacity and better range. The combined profit of the two production units were in excess of £400,000.⁸⁸⁴

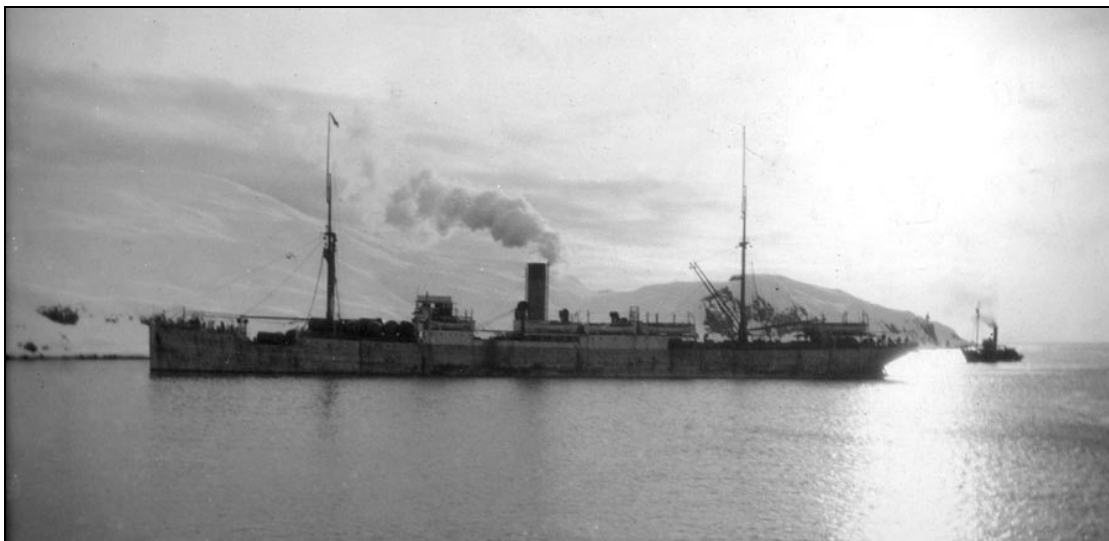


Fig 129. The Southern King in the Antarctic. This tanker was purchased by the Southern Whaling & Sealing Company for the 1923–1924 season, and operated in conjunction with the Southern Queen factory ship in the South Shetland Islands. The photo has been published with the kind approval of G. McIntosh.

⁸⁸³ Hart. I. B. *Whaling in the Falkland Islands Dependencies 1904-1931. A history of shore and bay-based whaling in the Antarctic.* P: 174, 2006. Also in Jackson. G. *The British Whaling Trade.* P: 196. 1978.

⁸⁸⁴ Jackson. G. *The British Whaling Trade.* P: 197. 1978.

During the period 1922 to 1928, the whaling station at Prince Olav Harbour produced 478,200 barrels of whale oil, while the Southern Queen expeditions produced 203,107 barrels.⁸⁸⁵ According to Jenkins (1932) the British whaling companies Southern Whaling & Sealing Company, Chr. Salvesen & Co, and Hector Whaling Company paid dividends to their shareholders that ranged from 23.5% to 57.5% during this period.⁸⁸⁶

The whaling companies realised that pelagic whaling was the future and that it was only a matter of time until whale stocks off South Georgia would be depleted. In spite of this, the Southern Queen expeditions were never able to match the production of Prince Olav Harbour until she was lost in the ice in 1928. This was partly because the whaling station had a much larger production capacity, but also indicates that the hunting grounds were not exhausted yet. Although prices for whale oil fluctuated throughout the period, varying from £28 to £37 per barrel,⁸⁸⁷ the Southern Whaling & Sealing Company supplied Lever Bros with plenty of oil and generated huge profits.⁸⁸⁸ While the company upheld their whaling operations at Prince Olav Harbour, the expansion of the Southern Whaling & Sealing Company under Lever Bros was pelagic. In the mid-1920s, the Southern Whaling & Sealing Company attempted to increase their pelagic activities by applying for a concession from the British authorities to operate in the Ross Sea.⁸⁸⁹ Even though the company was promised the next concession for the area, this expansion would need the company to invest in another factory ship to uphold operations in all areas.

But how did the whaling companies that operated in these unregulated waters secure control over good and sheltered harbours for the factory ships? Fieldwork performed on the Antarctic Peninsula in 2010 revealed a large number of anchor points, anchor chains, and storages of wooden barrels, tanks, and other equipment on every available piece of land. These could have been used to show competing whaling companies that the area was already claimed. This was particularly common during the first phase of pelagic

⁸⁸⁵ Norsk Hvalfangsttidende. No 11. November 1929. P: 317f. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁸⁸⁶ Jenkins. J.T. *Whales and modern whaling*. P: 128f. 1932.

⁸⁸⁷ Hart. I. B. *Whaling in the Falkland Islands Dependencies 1904-1931. A history of shore and bay-based whaling in the Antarctic*. P: 316. 2006.

⁸⁸⁸ Jackson. G. *The British Whaling Trade*. P: 197. 1978.

⁸⁸⁹ Jackson. G. *The British Whaling Trade*. P: 198. 1978.

whaling before the factory ships were large enough for full utilisation, but was also to support production on entire fleets and ensuring sufficient storage capacity for whale oil. More research is needed to find out how and why these points were used the way they were. Nevertheless, these observations show that the Antarctic Peninsula was an industrial landscape.

A turning point for the company occurred in 1928 when the *Southern Queen* was lost in the Antarctic ice. Prior to the loss of the ship, the company had discussed future whaling possibilities in the Antarctic, and were even considering taking over Chr. Salvesen & Co.⁸⁹⁰ The main issues were the effect the declining prices had on the whaling industry and the need for more oil since Lever Bros were using more whale oil to make soap and margarine than the Southern Whaling & Sealing Company could produce.⁸⁹¹ Lever Bros invested in a new floating factory ship, the *Southern Empress*. This ship was larger than the *Southern Queen*⁸⁹² and was, according to Jackson, the first floating factory ship that had enough cookers in relation to the number of whale catchers.⁸⁹³

Lever Bros expected to save up to £15,000 annually in operational costs since tanker ships would not be needed to transport the oil. Lever Bros decided, despite pleas from captain Aanderud, not to send the ship to the Ross Sea. By the end of the 1928–1929 season, the company had made a profit of £230,187, which excluded the 64,000 barrels of whale oil produced at Prince Olav Harbour.⁸⁹⁴ For the first time, the company's pelagic units had produced more whale oil than Prince Olav Harbour whaling station had done.

The total capital invested by Lever Bros in the two pelagic projects amounted to almost £1,000,000. Pelagic whaling not only increased production, it also lowered the costs per

⁸⁹⁰ In 1928 Harold Salvesen conducted a full-scale examination of future whaling possibilities in the Antarctic, in which he concluded that the best opportunities lay in whaling along the ice. For further reading, see Jackson. G (1978) P: 200f.

⁸⁹¹ Jackson. G. *The British Whaling Trade*. P: 205. 1978.

⁸⁹² This former tanker ship was rebuilt at a cost of £72 000 and was the first British floating factory ship to be fitted with a stern slipway. She carried a crew of 215 and was equipped with eighty-eight cookers and a storage capacity of 16 000 tons of whale-oil that enabled her to operate and process 4- to 5 whales an hour in the open sea. See: Report by E. Sveinung A/S entitled: *Foran Sesongen 1929-30; utsikt over Norske og utenlandske hvalfangerselskaper siste fangstsesongs regnskaper*. P: 34. 1929.

⁸⁹³ Jackson. G. *The British Whaling Trade*. P: 199f. 1978.

⁸⁹⁴ Norsk Hvalfangsttidende. No 11, November 1929. P: 317f. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway, and Jackson. G: *The British Whaling Trade*. P: 200. 1978.

ton of whale oil produced by £10 between 1927 and 1929. To be able to continue to generate economic profits and to pay dividends to their shareholders, several whaling companies increased their production even more.

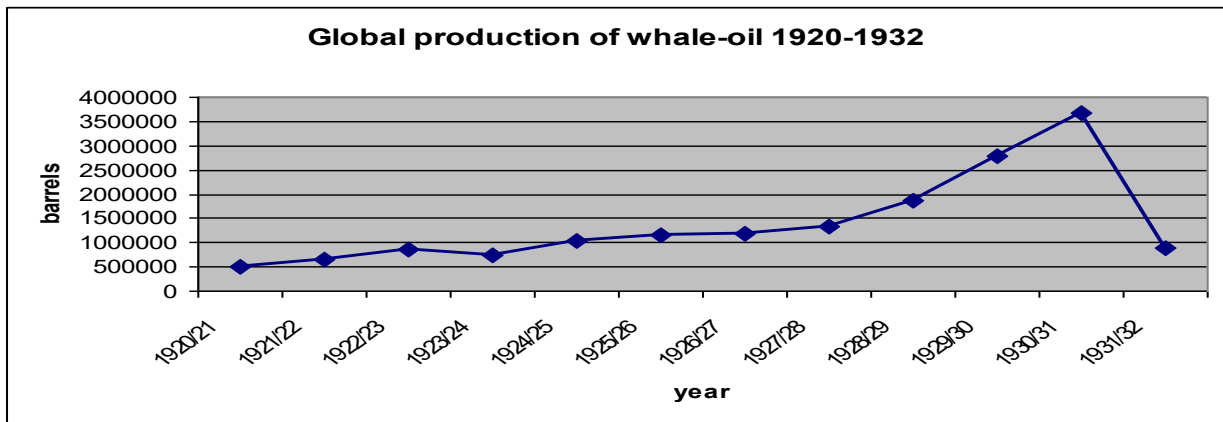


Fig 130. The global production of whale oil 1920 to 1932.⁸⁹⁵

This increase in production was perhaps unexpected. Lever Bros almost ended up with too much whale oil since they agreed to purchase oil from several whaling companies. To deal with this, Lever Bros invested in new storage facilities and forced their soap and margarine companies to base their production almost exclusively on whale oil.⁸⁹⁶ It was difficult to regulate the development of pelagic whaling since most expeditions operated in areas outside British control. In an attempt to impose regulations and control pelagic whaling, the British authorities threatened to terminate land-based operations in South Georgia if the whaling companies continued pelagic projects without adhering to their regulations.⁸⁹⁷ The British authorities realised that pelagic whaling could only be restricted by the nation under which the expeditions sailed.⁸⁹⁸ In 1929, the Norwegian government banned all Norwegian companies from hunting calving mothers and demanded that the whales be better utilised. In 1930, they issued a ban on killing blue whales under 60 feet and fin whales under 50 feet in length. Despite these restrictions, overall catches and whale oil production rose from 1928 to 1931.

⁸⁹⁵ Roberts. B. *Whale oil and other products of the whaling industry*. P: 6. In: *The Polar Record*. No 11-18, 1936-39.

⁸⁹⁶ Jackson. G. *The British Whaling Trade*. P: 206f. 1978.

⁸⁹⁷ "Promemoria. Hvalfangsten og forhandlingarne med Storbritannia. Oslo, 11 juni 1927. Johan Hjort". Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway. Archive: Hvalfangerforeningen. Vol: Korrespondanse angående internasjonale avtaler. Vol 2. 1920-30 årene.

⁸⁹⁸ Wampliew. W. *The evolution of International whaling controls*. P: 125. In: *Maritime History* 2, no 2, 1972.

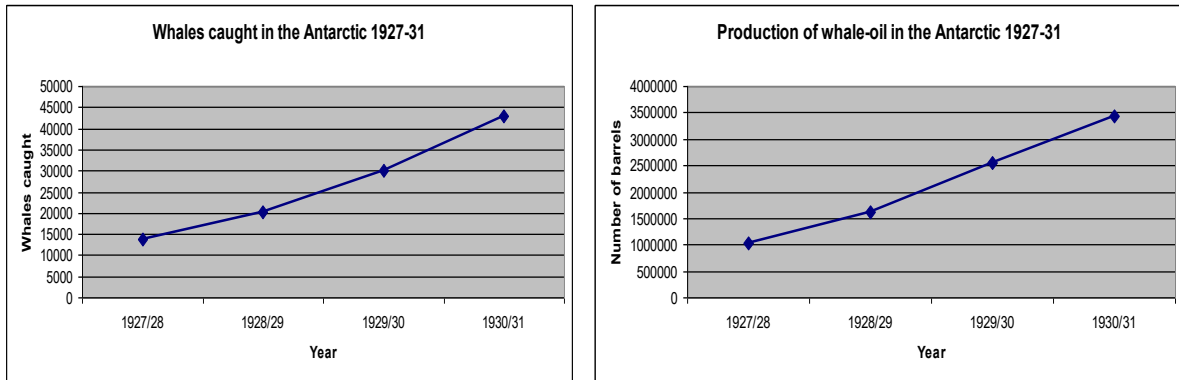


Fig 131 and 132. Whale catches and whale oil production in the Antarctic from 1927 to 1931.⁸⁹⁹

It is difficult to estimate whether these regulations affected the exploitation of whales. The regulations did not prevent further expansion of the industry because they did not restrict the number of catches, amount of whale oil produced, or the number of vessels that could be used.⁹⁰⁰ Unlike pelagic whaling, the overall catches and whale oil production of land-based operations in South Georgia declined.

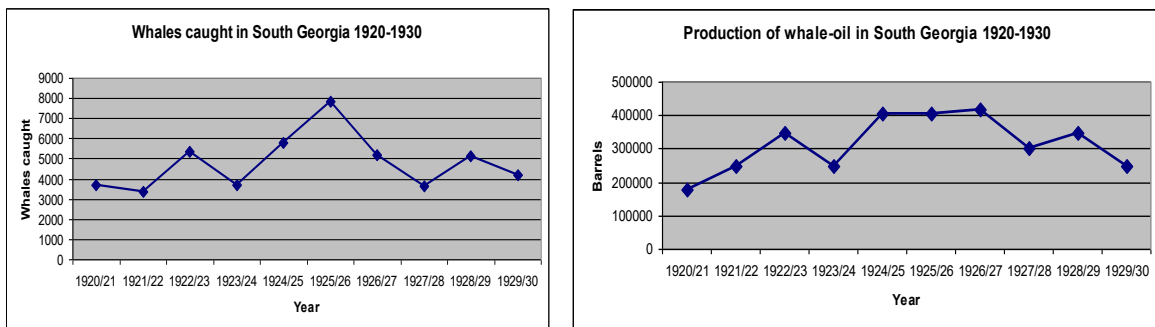


Fig 133 and 134. Whale catches and whale oil production in South Georgia between 1920–1930. After 1925, the overall trend was declining despite a slight increase in 1927.⁹⁰¹

Many whaling companies operating in South Georgia discussed whether declining catches and production in South Georgia were due to difficult weather conditions, declining whale populations, or a combination of these factors.⁹⁰² The Southern Whaling

⁸⁹⁹ The tables are based data supplied by: International Whaling Statistics. 1930, Norsk Hvalfangsttidende. No 3, March 1932. P: 53, and Norsk Hvalfangsttidende. No 4, April 1931. P: 89. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁹⁰⁰ Wamplow. W. *The evolution of International whaling controls*. P: 125. In: Maritime History 2, no 2, 1972.

⁹⁰¹ Then tables are based on data supplied by: International Whaling Statistics. 1930, and Norsk Hvalfangsttidende. No 11, November 1935. P: 183. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway.

⁹⁰² Norsk Hvalfangsttidende. No 12, December 1930. P: 349. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

& Sealing Company had made a profit despite covering approximately £25,000 of the Harris Whaling & Fishing Company's losses throughout the 1920s.⁹⁰³

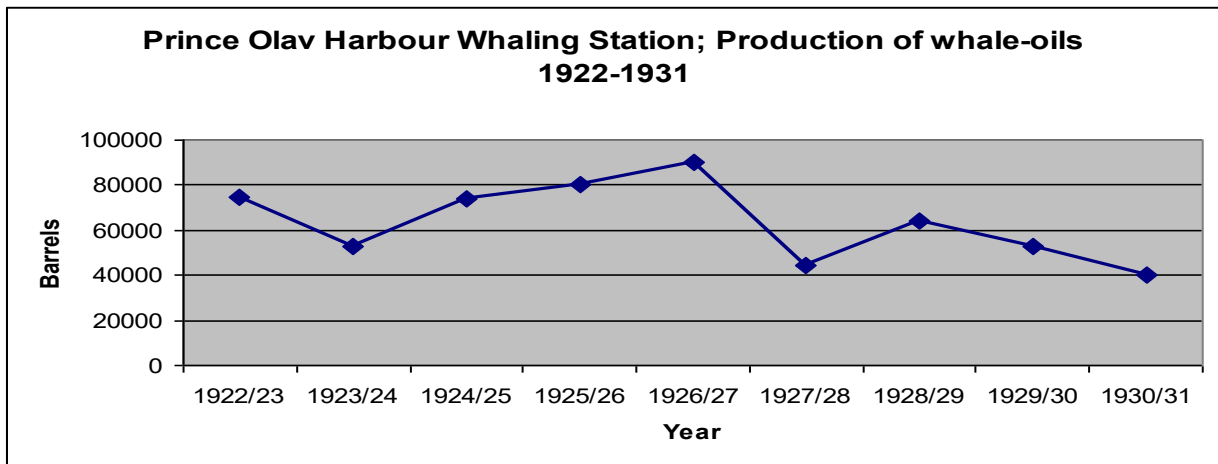


Fig 135. The production of whale oil at Prince Olav Harbour from 1922–1923 until its closure after the 1931 season. Although the station, together with the company's pelagic expeditions, was able to generate substantial profits throughout the period, the data available reveal a declining trend.⁹⁰⁴

Closure of Prince Olav Harbour whaling station

The British authorities' attempts to minimise the accelerating production of the whaling industry through regulations had little effect. Production continued and reached new heights. From 1929–1930 to 1930–1931, the overall production of the whaling industry in the Antarctic increased by 34% from 2,546,759 barrels to 3,427,177 barrels of whale oil. The Southern Whaling & Sealing Company alone increased their production by 27% in the same period.⁹⁰⁵ This massive overproduction meant that Unilever (formerly Lever Bros), the main buyer on the market, was unable to use all the whale oil produced. Consequently, prices fell by almost 50% from £21 in 1930, to £12 in 1931.⁹⁰⁶ Even though low whale oil prices were favourable for Unilever, they could not predict future market demands and price fluctuations, or the market for soaps and margarine. It was therefore important for Unilever to maintain the Southern Whaling & Sealing Company and their whaling operations in the Antarctic to ensure their own supply of whale oil.

⁹⁰³ Jackson. G. *The British Whaling Trade*. P: 209. 1978

⁹⁰⁴ The chart is based on data collected from Norsk Hvalfangsttidende. No 11, November 1929. P: 317f, Norsk Hvalfangsttidende. No 4, April 1931. P: 89. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord. Norway, and Jackson. G. *The British Whaling Trade*. P: 248f. 1978

⁹⁰⁵ The combined overall production of The Southern Whaling & Sealing increase from 30 474 tons in 1929/30, to 38 714 tons in 1930/31. Jackson. G. *The British Whaling Trade* P: 248. 1978.

⁹⁰⁶ Elliot. G. *A Whaling Enterprise: Salvesen in the Antarctic*. P: 31. 1998. Also in Hart. I. B. *Whaling in the Falkland Islands Dependencies 1904-1931. A history of shore and bay-based whaling in the Antarctic*. P: 316. 2006.

In the spring of 1931, Unilever announced that they would not be able to purchase all the whale oil they were likely to be offered. According to Tønnesen, the company had enough whale oil stored for almost two years of manufacturing.⁹⁰⁷ Unilever were taken to court and ordered to pay Globus and Polaris whaling companies £447,160 for breaking their contract.⁹⁰⁸ As a result, several whaling companies recalled their fleets. No Norwegian whaling companies sent expeditions to the Antarctic in the coming season, a period known as the silent year. In addition, several whaling companies chose to abandon their whaling stations in South Georgia. This closed season had devastating socio-economic effects in Norway. More than 10,000 Norwegians became unemployed at a time when the world was facing the largest economic crisis to date.

The management of Unilever dealt with the situation in two ways. Firstly, they sent the Southern Empress and Southern Princess pelagic expeditions to the Antarctic hunting grounds. Secondly, they closed the whaling station at Prince Olav Harbour.⁹⁰⁹ This appears to have been a strategic business decision. Since the purchase of the whaling station in 1919, the management had turned the station's negative output around to generate economic profit and had continued to do so until its closure. In addition, the 21-year lease, which Irvin and Johnson secured in 1911, was expiring. Instead of renewing or extending the lease, it went back to the British authorities.⁹¹⁰

The Southern Whaling & Sealing Company had caught fewer whales and produced less whale oil over the last few years, like many other whaling companies that operated from South Georgia. Large-scale industrial exploitation had depleted the whale stocks. During the first decade, the whaling companies adapted to overexploitation by exploiting other species or by technological adaptations, such as extending the range of their whale catchers. The competition from pelagic whaling in uncontrolled waters made it difficult to maintain support for shore-based whaling stations in South Georgia.

⁹⁰⁷ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 395. In: *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*. 1969.

⁹⁰⁸ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. Vol: 3. P: 395. In: *Den Moderne Hvalfangst Historie- Opprinnelse og Utvikling*. 1969.

⁹⁰⁹ Norsk Hvalfangsttidende. No 4, April 1931. P: 86. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord. Norway.

⁹¹⁰ Pettersen. A. *Syd Georgia- eventyrenes øy*. P: 252. 1999.

New owners

The whaling station at Prince Olav Harbour lay dormant until the autumn of 1936, when Chr. Salvesen & Co and the South Georgia Company leased it for a period of three years.⁹¹¹ Eventually, Unilever sold the whaling station to Chr. Salvesen & Co, one of the few companies to sustain their shore-based operations in South Georgia, operating from their whaling station at Leith Harbour. They did not purchase Prince Olav Harbour to re-open it, but to use it as a resource for building parts, installations, and machineries that could be transferred to Leith Harbour. Over a period of 15 years, the South Georgia Company systematically dismantled the whaling station and transferred it to Leith Harbour.⁹¹²

Today, the remains of the whaling station at Prince Olav Harbour are a part of the island's cultural heritage and an important reminder of one of mankind's most controversial industries.

Conclusions

The gradual development of the local network at Prince Olav Harbour whaling station was dictated by concessions and market demands, and occurred in three phases as described above. While archival sources have provided information on company structures, production, and salaries, the fieldwork has uncovered the organisation of production, the design and spatial layout of the station within the local landscape, the role and use of social strategies, and more.

But why did the project fail under Irvin and Johnson? In the wake of the hydrogenation process, they saw whaling as a business and decided to start an industrial whaling project in the Antarctic. Firstly, they used the same platform to operate in two different areas, which was poor organisation. They decided to move and establish the whaling station at Prince Olav Harbour, but it took several years to assemble. Once the station was completed and operational, several strikes halted further construction and production. Whether Irvin and Johnson adapted the design and layout of the station as a

⁹¹¹ "Indenture on lease of Prince Olav Harbour for a period of three years. May 15, 1936". The Falkland Islands Archive. Vol: South Georgia. Whaling - MISC. Non-Govt. Vol 1. 1936.

⁹¹² Bystrøm. E. *Et år på Syd-Georgia*. 1944.

reaction to these events is unclear. But fieldwork clearly shows that workers were separated into different groups and that investments were made in leisure activities.

The whaling station probably took so long to reconstruct because the First World War complicated logistics. The failure of the Southern Whaling & Sealing Company under Irvin and Johnson seems to be caused by difficulties creating social control, long lease agreements which were financially heavy, and the loss of S/S Restitution. One can argue that these challenges could all have been solved by better organisation and planning. This may reflect Irvin and Johnson's lack of experience operating in the polar regions. The loss of S/S Restitution was not the sole reason for Irvin and Johnson selling their whaling project since it was probably insured. But the loss forced them to extend the lease on Sandefjord Hvalfangeri A/S station, which meant additional costs for the lease and personnel. The loss was one of many challenges and it was the combination of events that probably convinced Irvin and Johnson to withdraw from their project in South Georgia. Therefore, the project failed because the network builders lost control of their local network by failing to establish a functional and well-organised project.

Under Lever Bros and later Unilever, the local network at Prince Olav Harbour was part of a large, well-organised multinational company with vast experience of industrial projects. Lever Bros had strategically purchased whaling companies and other producers of oil and fats to secure control of the raw materials needed to produce their soaps and margarine. Lever Bros reduced their operation costs in two ways: by controlling the production of raw materials and by collaborating with other producers to push prices and influence the markets. With the exception of production figures and some correspondence with the magistrate of South Georgia, we know little about the activities at Prince Olav Harbour during the 1920s. Archival photos combined with fieldwork have shown that Lever Bros organised production using the same strategies as Irvin and Johnson. This may be because Johnson was involved in the process shortly after the purchase. The company did invest in a football field as an additional leisure activity for the workers, but it was not completed, which indicates that work was either not continuous or started at the end of the 1920s.

The decline of the market in the early 1920s, combined with the company's desire to control the production of raw materials, motivated Lever Bros to invest in a pelagic project in addition to shore-based operations at Prince Olav Harbour. The declining catches at South Georgia indicated that the hunting grounds were becoming depleted and could not match the increase in catches and whale oil production that were achieved by pelagic expeditions in the 1920s. The only way to meet the need for increased production was to operate in unregulated waters. The drop in whale oil prices in the early 1920s escalated the development of pelagic whaling techniques.

Fieldwork showed that all the buildings except the manager's villa were wooden frame constructions on a concrete foundation and covered with corrugated steel plates. This type of construction was suited to the predominant climatic conditions in South Georgia and was sustainable and cheap. This meant that the whole station could be abandoned once it no longer generated enough profit to justify continued operation. Once the pelagic whaling industry became dominant, only a few whaling stations continued to operate in South Georgia; most were closed and abandoned. The whaling station was eventually closed in 1931 because the local network, despite high output in the 1920s, could no longer compete with the profits of pelagic expeditions in uncontrolled waters.

Despite the works of Johnson and Tønnesen, Basberg and Rossnes, Jackson, Hart, and others there are still gaps in our knowledge of the whaling industry in South Georgia. More research is needed on these whaling stations after their closure, as well as on the Japanese whaling industry in Grytviken. Furthermore, it would be interesting to investigate how and why the whaling companies in South Georgia collaborated to enhance control, for example using the black book system. It would also be interesting to determine how pelagic whaling expeditions secured control and possession of good and sheltered harbours in unregulated waters. Finally, the role of African workers in the Antarctic whaling industry should also be investigated more deeply. I strongly advocate industrial archaeological approaches in future research. Although we can learn a lot from the archives, they tell us little about daily production and organisation unless material remains are also studied. Nor do they explain how whaling companies tried to create social control and hierarchical boundaries by using the surrounding polar landscape.

8. Signy Island whaling station, South Orkney Islands

Introduction

The South Orkney Islands constitute an archipelago consisting of four main islands in the Antarctic below the Antarctic convergence in the Southern Ocean that is located between South Georgia and the Antarctic Peninsula. The islands are mountainous and approximately 90% of the archipelago is glaciated.

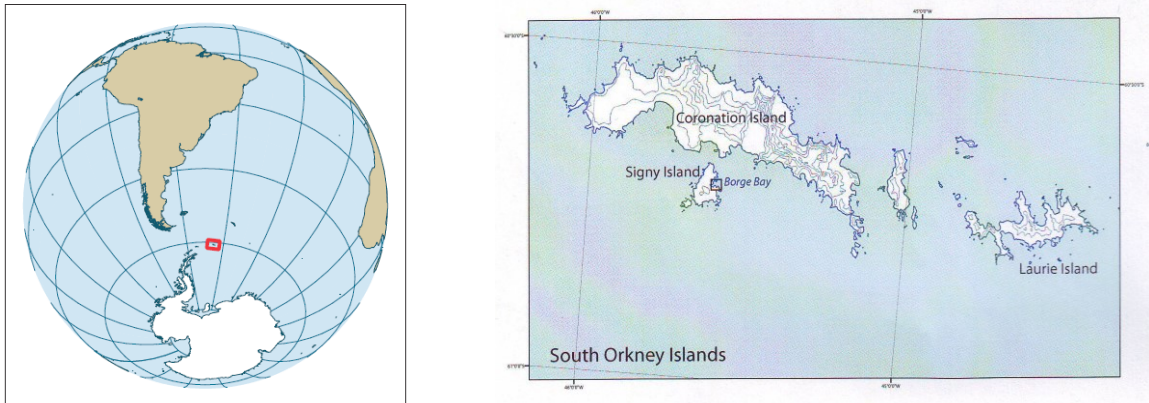


Fig 136 and 137. Map showing the location of the South Orkney Islands. The whaling station was located at Borge Bay, which is marked on the map to the right. Maps produced by F. Steenhuisen, Arctic Centre, the Netherlands.

The global network of the whaling station at South Orkney Islands

The company

The whaling station at Signy Island was established by A/S Tønsberg Hvalfangeri. This company was an initiative of the two brothers Bernt and Søren Sørensen.⁹¹³ Both were experienced whalers and had worked as gunners for the Norwegian whaling company A/S Ørnen at Iceland, Spitsbergen, and the South Shetland Islands.⁹¹⁴ Although there are no archival sources to support this, the two probably got the idea to establish their own business after seeing the potential of the Antarctic hunting grounds during their first expeditions with A/S Ørnen and the semi-pelagic factory ship *Admiralen* in the 1905–1906 and 1906–1907 hunting seasons.

⁹¹³ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2. P: 350. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁹¹⁴ "Diary of Alex Lange, 1904-1907/08". Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway. See also: Sørensen. G, Hoff. J.O, Halvorsen. L & Salicath. C. *Hvalfangsten- Dens historie og mænd*. 1912.

Their own savings and those of Søren Berntsen, the son of Bernt Sørensen, amounted to Kr50.000. Even though this was a large sum at the time, it was not enough to start an industrial project in the Antarctic. In the spring of 1907, the three actors successfully convinced a handful of local businessmen and industrialists from the Tønsberg region in Norway to invest Kr50.000 (giving a total start capital of Kr100.000) and to be a part of the management for their whaling company.⁹¹⁵ Enlisting these investors to their network was instrumental since none of the three Berntsens had any business or managerial experience. The management applied to the Colonial Office for a whaling concession and lease in South Georgia where they intended to construct their local network.⁹¹⁶ The concession granted to the company was applicable from January 1, 1908 and included a lease of an undefined area of 500 hectares at an annual cost of £250.⁹¹⁷

The British Colonial Office had started to issue whaling concessions and leases on January 1, 1906 when then Argentinean whaling company Compañía Argentina de Pesca Sociedad Anónima was granted rights to operate from their whaling station at Grytviken in South Georgia,⁹¹⁸ where they had operated since 1904.

Having secured a concession and lease, the management of the intended company placed an advertisement in the local newspaper, Tønsberg Blad, where they invited the public to buy shares at the two local banks, Tønsberg Privatbank and Tønsberg

⁹¹⁵ This group consisted of Oscar Hytten who had his own shipping- and assurance business, K. Ludv Henriksen who owned H. Henriksens Mek. Verksted together with his father, and brewery owner Johan Gmeiner. Gmeiner later became instrumental in the formation of the companies Tønsberg Tank A/S, Aktieselskabet Havsten, and Skibaktieselskabet Leiesten. He was also a board-member of De Nordiske Fabrikker (De-No-Fa) and Star Whaling Company to mention a few. For further reading, please see: Wasberg. G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams. For amount invested, see Shareinvitation in Tønsberg Blad, June 30, 1907.

⁹¹⁶ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2. P: 338. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁹¹⁷ Wasberg. G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams. See also: Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2. P: 351f. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁹¹⁸ "Report of the Interdepartmental Committee on Research and Development in the Dependencies of the Falkland Islands". 1920. P: 5.

Handelsbank, for Kr5.000 per share. The shares were in a local stock holding company that intended to start whaling in the Antarctic.⁹¹⁹

Even though the shares were expensive, they sold them all generating a total available capital of Kr300.000⁹²⁰ Although this was Kr100.000 less than the group had hoped to generate in their share invitation, they decided to establish and register A/S Tønsberg Hvalfangeri. They were able to generate the necessary capital for their project relatively quickly because the industry had been and still was important for the development and prosperity of the town. The whaling company intended to exploit the promising Antarctic hunting grounds and this attracted a lot of interest.

Having succeeded in generating enough capital to materialise the project, Sørensen and their associates structured the company management by putting Hytten, Henriksen, and Gmeiner in charge of developing and operating the company's business in Norway, and to build and maintain the global network there. Meanwhile, the Sørensen brothers and Berntsen took over development of the local network. In July 1907, the management held a preparatory meeting with a few invited shareholders to discuss the purchase of a factory ship and two whale catchers. The company decided to purchase the 1,847-ton factory ship Bucentaur, and the whale catchers Carl and Mathilde from the Norwegian/British/Swiss whaling company A/S Hvalheim.⁹²¹

⁹¹⁹ Wasberg. G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 5. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams. See also: Tønsberg Blad, June 30, 1907. There is a difference in the share-costs between Wasberg and the original share invitation as the former states that the costs per share was set at Kr 2500, the actual invitation states Kr 5000.

⁹²⁰ Sørensen. G, Hoff. J.O, Halvorsen. L & Salicath. C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 44.

⁹²¹ Ytreberg. N. A. *Tromsø Bys Historie*. 1962. Vol: 2. P: 211f. See also: *Husvik Harbour*. 2007. P: 3. Booklet issued by Husvik and Nes Velforening, Historielaget. October 2007- 2nd issue. According to Risting (1922) p: 254, the Bucentaur were built in 1875, and had been converted into a factory ship and operated by A/S Hvalheim in Spitsbergen until the summer of 1907 when the company and all its assets were sold to A/S Tønsberg Hvalfangeri. According to Wasberg (1958), the purchase and rebuilding of Bucentaur and the two whale catchers Carl and Mathilde cost Kr 235 000 which was a considerable part of the available capital. After the rebuild, the Bucentaur had four pressure cookers in the aft and four cookers in the stern, and could process the blubber from five to ten whales per day when operating with two flensing stations alongside its hull

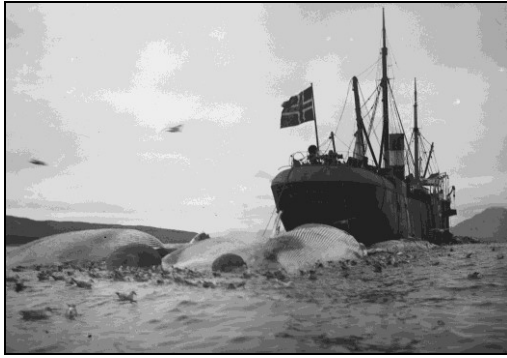


Fig 138 and 139. The floating factory ship Bucentaur under the ownership of A/S Hvalheim in Spitsbergen. Right: Bucentaur lying at anchor in Tønsberg, Norway.⁹²² The right photo has been printed with the kind permission of Norsk FolkeMuseums Archive. The left photo is a re-print from the booklet "Husvik Harbour" issued by Husvik and Nes Velforening in 2007.

Under the leadership of the Sørensen brothers, who were gunners and captains of the two whale catchers, and Søren Berntsen, who was captain of the Bucentaur, the expedition left Norway to establish a whaling station (the local network) at Husvik Harbour in South Georgia. According to Wasberg, the management took a considerable risk when forming the company since the project could fail.⁹²³

Husvik Harbour, South Georgia

Here, I will briefly discuss the establishment of the whaling station at Husvik Harbour on South Georgia and the company's success there, as this is related to the later expansion of the company to Signy Island and elsewhere.

The company decided to establish a shore-based whaling station at Husvik Harbour in 1908. They realised that the size and capability of the Bucentaur was too limited to be sustainable; they had to discard a large percentage of the whale carcasses because the ship was too small, which reduced the potential output. The company had to restructure and adapt their local network to increase their economic profit.

⁹²² The photo on the left has been published with the kind approval of Norsk FolkeMuseums Archive. The photo on the right is from: "Husvik Harbour". 2007. P: 3. Booklet issued by Husvik and Nes Velforening, Historielaget. October 2007- 2nd issue.

⁹²³ Wasberg, G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams

Even though the results of the 1908–1909 and the 1909–1910 seasons had been good, giving the shareholders dividends of 18% and 60% respectively, this was not enough to finance a whaling station at South Georgia. To generate the necessary capital, the management decided to sell new shares, and by doing so they raised their available stock capital to Kr600.000.⁹²⁴ This was increased by Kr360.000 the following year to give a total available capital of Kr960,000. The dividends generated in 1909–1910 were reinvested in the company's capital buffer.⁹²⁵ They invested this capital in building materials and components for the whaling station at Husvik Harbour and a few ships.⁹²⁶

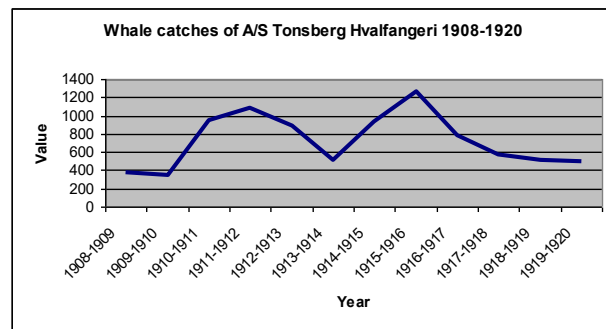
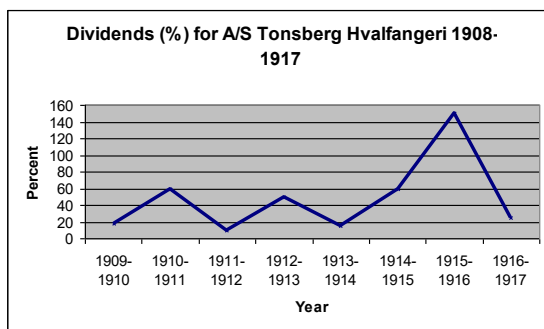


Fig 140 and 141. Whale catches of and dividends for A/S Tønsberg Hvalfangeri, 1908–1920.

The war was a difficult time for A/S Tønsberg Hvalfangeri. Declining catches and production had a negative effect on the economic output of the station and the dividends paid to the company's shareholders. Throughout the war, operational costs increased and although prices for whale oil also increased they did not compensate enough for the increased costs.

⁹²⁴ Sørensen. G, Hoff. J.O, Halvorsen. L & Salicath. C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 44.

⁹²⁵ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2. P: 354. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling. Also in: Sørensen. G, Hoff. J.O, Halvorsen. L & Salicath. C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 44.

⁹²⁶ Wasberg. G.C. *Femti år i konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 23 & 118. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams. Also in: Sørensen. G, Hoff. J.O, Halvorsen. L & Salicath. C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 44.

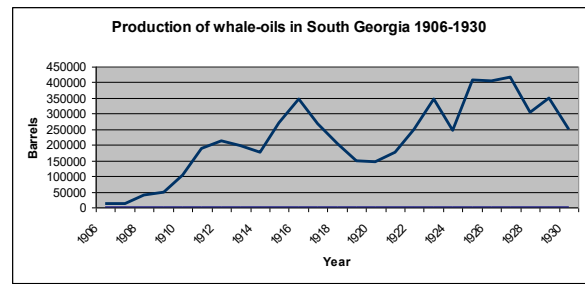
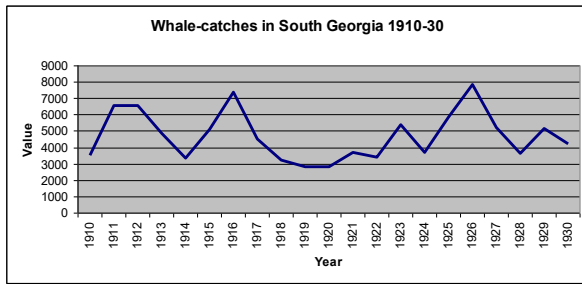


Fig 142 and 143. Overall whale catches and production of whale oil in South Georgia 1906 to 1930. Data supplied by International Whaling Statistics.

The development of the whaling industry in South Georgia after 1910 was primarily influenced by three factors. Firstly, the shift from humpback whales as the main target species to fin and blue whales. Secondly, the increasing market demand for whale oil, which had a positive effect on prices. Thirdly, the outbreak of the First World War, which increased the operational costs for the whaling companies since the availability of coal and supplies dropped and insurance became more expensive. Although catches declined in South Georgia from 1912 to 1914, this did not have a strong impact on the output of whale oil. This can partly be explained by the shift from hunting humpback whales to hunting larger fin and blue whales, which increased the overall yield per whale. Better utilisation of the raw materials at the whaling stations may also have played a role.



Fig 144 and 145. Map indicating the geographical location of Husvik Harbour. Map by U.I. Gustafsson. Map data supplied by the British Antarctic Survey. Right: Husvik Harbour whaling station during the construction phase.⁹²⁷

⁹²⁷ The photo has been scanned from *Husvik Harbour*. 2007. P: 3. Booklet issued by Husvik and Nes Velforening, Historielaget. October 2007- 2nd issue.

Expansion to new hunting grounds

Throughout the first two decades of the 20th century, whaling companies primarily concentrated their activities in two areas of the Antarctic region: South Georgia and the South Shetland Islands.⁹²⁸ Although whaling was established and developed simultaneously in the two areas, shore-based whaling stations dominated production in South Georgia while semi-pelagic factory ships dominated production in the South Shetland Islands. Although these pelagic production units were relatively small, the whaling companies that used them generated dividends of 15%–40% for their shareholders.⁹²⁹

The outbreak of the war in 1914 halted the industry's activities for four years. Catches and output did not reach the same heights until the 1923–1924 hunting season.⁹³⁰ Positive developments in whale oil prices combined with the belief of a drained post-war market were powerful incentives for whaling companies to expand to new hunting grounds in the Antarctic. This was perhaps necessary as the 1919 hunting season in South Georgia had been difficult. The weather had been severe and the catches of blue and humpback whales were low. On several occasions the whale catchers had been forced to sail 70–80 miles off the island to find whales, which increased the whaling companies' operational costs.

Basberg has argued that declining catches in South Georgia was the primary reason for the expansion of the modern whaling industry in the 1920s.⁹³¹ It is correct that catches in South Georgia declined slightly from 1916 to 1920, but catches were not higher in other hunting grounds until the latter part of the 1920s.⁹³² I believe that many of these projects (especially in the early 1920s) were already planned during the war and

⁹²⁸ See Tønnesen, J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2, Risting, S. *Av Hvalfangstens Historie*. 1922. P: 303ff, Hart, I. B. *Whaling in the Falkland Islands Dependencies 1904-1931: A history of shore and bay-based whaling in the Antarctic*. 2006, Basberg, B.L. *The Shore Whaling Stations at South Georgia – A Study in Antarctic Industrial Archaeology*. 2004.

⁹²⁹ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2. P: 384. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁹³⁰ International Whaling Statistics. 1930. Also in: Wasberg, G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 46. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁹³¹ Basberg, B.L. *Perspectives on the Economic History of the Antarctic Region*. 2006. P: 292. In: International Journal of Maritime History. XVIII, No 2 (December 2006). Pp: 285-304.

⁹³² International Whaling Statistics. 1930 and 1951.

expectations that the market for whale oil was going to increase motivated many to expand their activities. Another important aspect for expansion during the 1920s was the drop in whale oil prices, which forced the whaling companies to increase their production to generate profits. British policies and regulations and technological developments also had an influence. For these reasons, whaling companies turned their attention to new, unexploited areas.⁹³³

During the 1920s, Tønsberg Hvalfangeri expended their industrial activities to new hunting grounds in an attempt to increase whale oil production and generate profits for their shareholders. These projects were, unlike at Husvik Harbour, based on factory ships either entirely or in conjunction with a shore-based station.

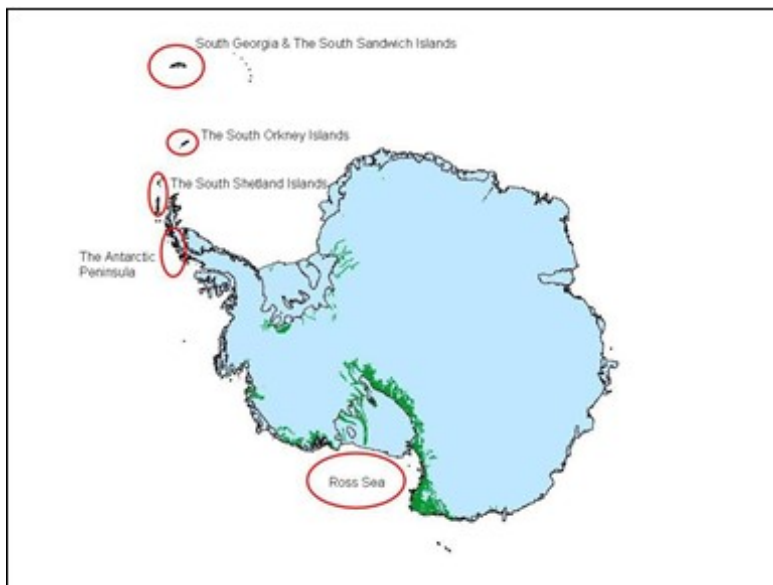


Fig 146. The primary whaling grounds in the Antarctic from 1904 to 1931. Map by U.I. Gustafsson. Map data have been supplied by the British Antarctic Survey.

The South Orkney Islands

The Colonial Office's decision not to issue any additional concessions or leases meant that there were no opportunities to expand the whaling operations in South Georgia. Therefore, any expansion had to be realized elsewhere. In 1920, the management of A/S Tønsberg Hvalfangeri decided to apply for a whaling concession and lease in the South Orkney Islands. The decision to establish a second local network in the South Orkney Islands was motivated by the desire to maximise economic profits at a time when prices for whale oil were at an all-time high and by uncertainty regarding the whale

⁹³³ The South Orkney Islands, The Antarctic Peninsula and the Ross Sea.

populations in the waters off South Georgia. Spreading their activities and establishing themselves in an area with low competition reduced the risk of having to close business if whale populations collapsed in South Georgia and if regulations were tightened.

The company negotiated a concession at Signy Island. Hans Borge had previously worked as a manager for A/S Rethval in this area and knew it well. His knowledge of the area and the maps he had made during his previous whaling expeditions probably played an important role in their choosing Signy Island.

The company had decided to expand their whaling operations when prices for whale oil were high. However, they established their whaling station at Signy Island immediately after the collapse of the market in 1921 when prices for whale oil – and other raw materials – plummeted.⁹³⁴ It seems that they could not have started their whaling project at Signy Island at a worse time. Despite this temporary setback, their whaling station at Signy Island proved successful. Throughout the 1920s, the prices for whale oil remained relatively stable. To secure economic profit and prolong the support of shareholders, the Antarctic whaling industry adopted a policy of scale. By increasing their catches and output of whale oil, they compensated for low prices by sheer scale of production.

Previous attempts to operate in the South Orkney Islands

The whale populations in and around the South Orkney Islands were first exploited in the 1907–1908 season by the Newfoundland Steam Whaling Company using the factory ship *Sobraon*.⁹³⁵ Their project was short-lived as the company chose to abandon the area in favour of the South Shetland Islands further west.⁹³⁶ In 1910, the Norwegian Konow tried to secure exclusive rights for the South Orkney Islands for 21 years and establish a whaling station at Laurie Island. When the British Colonial Office only offered him an

⁹³⁴ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 179f. See also: Hart. I. B. *Whaling in the Falkland Islands Dependencies 1904-1931: A history of shore and bay-based whaling in the Antarctic*. 2006. P: 316-317.

⁹³⁵ "Letter from the Governments House in Stanley, to Sir William MacGregor; Governments House in Newfoundland. January 9, 1908". The Falkland Islands Archive. Vol: General Letter Book/ Governor. November 1881-December 1908. Outward. Also in: Dickinson. A. B, and Sanger. C.W. *Twentieth-Century shore-whaling in Newfoundland and Labrador*. 2005. P: 80.

⁹³⁶ "The Whaling Industry of the Dependencies of the Falkland Islands. October 5, 1918". The Falkland Islands Archive. Vol: SG & DEP. Whaling- General. Box 27.

annual licence, he withdrew his interest. The next whaling company to operate in the South Orkney Islands was the Norwegian company A/S Laboremus in the 1911–1912 season. They based their operations on the factory ship Roald Amundsen.⁹³⁷ These two whaling companies were not the only ones with rights to operate in the area. The Norwegian company A/S Hektor had also secured a concession for the South Orkney Islands and the South Shetland Islands, and they erected a whaling station at Deception Island in 1911.⁹³⁸ Although they never operated in the South Orkney Islands, their concession gave them the option to do so if they wanted. Several whaling companies used the same strategy because, according to Hart, the secondary concessions kept competitors away and offered a backup in case catches failed elsewhere.⁹³⁹

Shortly after the British authorities had issued the Royal Letters Patent and the Whale Fishery Ordinance in 1908,⁹⁴⁰ they proclaimed that no more concessions would be issued for South Georgia. The British authorities set a maximum of ten concessions for the South Shetland Islands and Graham Land.⁹⁴¹ Competition for the available concessions became fierce. Until that point, most whaling companies had hunted humpback whales, a species that was scarce by 1910. Although the reasons for this were uncertain,⁹⁴² no one wanted it to continue.

⁹³⁷ Norsk Fiskeritidende. 1915/16. P: 29f. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway. See also: Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2. P: 391. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling, and: Hart. I.B. *Whaling in the Falkland Islands Dependencies 1904-1931: A history of shore and bay-based whaling in the Antarctic*. 2006. P: 146.

⁹³⁸ "Letter from N. Bugge, to the Under Secretary of State, Colonial Office in London. January 13, 1914". The Falkland Islands Archive. Vol: Despatch Book Aug 1913 – Mar 1914. Inward. Vol 50.

⁹³⁹ Hart. I. B. *Whaling in the Falkland Islands Dependencies 1904-1931: A history of shore and bay-based whaling in the Antarctic*. 2006. P: 147.

⁹⁴⁰ Through these declarations, Great Britain formally proclaimed their sovereignty over South Georgia, the South Orkney Islands, the South Shetland Islands, South Sandwich Islands and Graham Land as dominions under the dependencies of the Falkland Islands.

⁹⁴¹ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2. P: 342. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁹⁴² C.A. Larsen, the local manager of Grytviken whaling station in South Georgia, argued that there was no reason to fear that large whales (humpback, blue and fin whales) would be exterminated, and that the primary reason why humpback whales had more or less disappeared from areas such as South Georgia, was due to food availability and the migration patterns of the species rather than being the effects of industrial exploitation. See: "Captain C.A. Larsen's views on the question of a close time to avoid the risk of extermination of certain species of whales". Archive: Hvalfangerforeningen. Korrespondanse angående internasjonale avtaler. Vol: 1, 1915-1919. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

In 1911–1912, A/S Rethval and A/S Thule were granted a concession to exploit whales in the South Orkney Islands and the South Sandwich Islands.⁹⁴³ These two companies based their operations on semi-pelagic factory ships, the Falkland and Thule.⁹⁴⁴ Their initial plan had been to operate in the South Sandwich Islands. Their initial investigations revealed extremely difficult conditions there, so they opted for the South Orkney Islands.⁹⁴⁵ During the time they operated there, they caught 2,055 whales.⁹⁴⁶ Compared with other hunting grounds in South Georgia and the South Shetland Islands, this catch was small.⁹⁴⁷ From 1907 to 1915, the companies caught most whales around Saddle Island in Iceberg Bay and on the south-west side of Coronation Island.⁹⁴⁸

From 1911 to 1915, when A/S Rethval operated in the area, their manager Hans Borge chartered and mapped several anchorages and sheltered bays in the area.⁹⁴⁹ These maps became important for later whaling projects in the area.

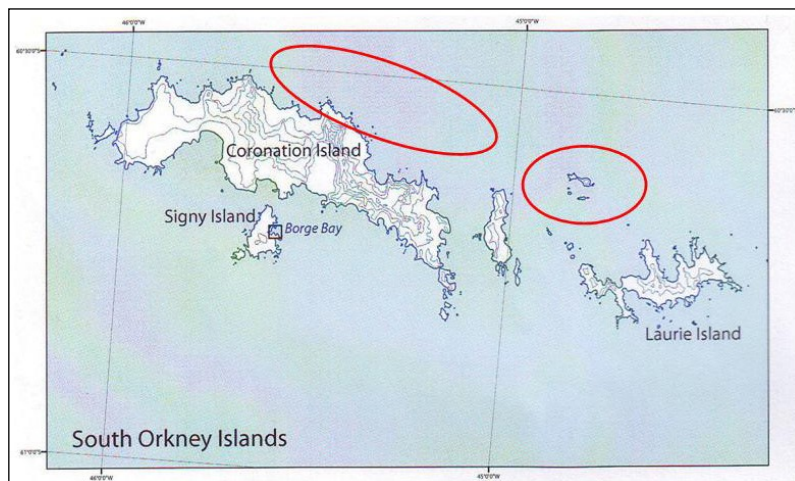


Fig 147. The primary hunting grounds in the South Orkney Islands from 1907 to 1915. Map by F. Steenhuisen and U.I. Gustafsson.

⁹⁴³ "Letter from H. J. Read on behalf of the Secretary of State, to the Secretary of the Norwegian chamber of commerce. August 15, 1914". Vol: D5-1-1-4. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams. Also in: Norsk Fiskeritidende. 1912. P: 25. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

⁹⁴⁴ Norsk Fiskeritidende. 1914. P: 162. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

⁹⁴⁵ "Diary of Petter Sørrle". Vol: D5-1-5-6.1. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams. See also: Isachsen. G. *Modern Norwegian Whaling in the Antarctic*. 1929. P: 393. In: Geographical Review, Vol 19, No 3 (July 1929).

⁹⁴⁶ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2. P: 396. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁹⁴⁷ Over the same period in South Georgia and the South Shetland Islands were 26 360 and 22 571 respectively. Nevertheless, these numbers are not comparable since the number of companies operating in these areas was several times larger than in the South Orkney Islands.

⁹⁴⁸ "The Whaling Industry of the Dependencies of the Falkland Islands. October 5, 1918". The Falkland Islands Archive. Vol: SG & DEP. Whaling- General. Box: 27.

⁹⁴⁹ Roberts. B. *Chronological list of Antarctic Expeditions*. 1958. Vol: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

The most important achievement of these whaling operations was not their economic success, but the fact that they operated successfully in the South Orkney Islands. They showed there were enough whales to sustain large-scale industrial exploitation.

During the First World War, the whaling companies focused their activities elsewhere. According to Tønnesen, the number of expeditions dropped, which reduced the number of whale catchers and factory ships that operated there. In Antarctica, the overall number of operational whaling stations and floating factories dropped from a pre-war level of six stations, 21 floating factories, and 62 whale catchers to six stations, six floating factories, and 44 whale catchers by 1916. The strategic importance of the industry meant that whaling companies had to maximise the output of whale oil, which negatively affected how the whales were processed and utilised. The trend in the industry's relative share of global whale catches and whale oil production increased.⁹⁵⁰ Increased costs for equipping Antarctic whaling expeditions was the most important factor in their decline. The price for coal, supplies, and insurance increased dramatically. Several whaling companies chose to rent out their large factory ships as cargo vessels to transport goods across the Atlantic, which proved a risky business.

From 1915 to 1920, nobody established a whaling project in the South Orkney Islands, until the Norwegian company A/S Tønsberg Hvalfangeri was granted a concession to establish a whaling station there.

Peru and Ecuador

In 1923, A/S Tønsberg Hvalfangeri decided to expand its industrial operations further by establishing two new whaling companies: Cia Ballenera del Peru Ltda and Cia Ballenera del Ecuador.⁹⁵¹ These two companies were established to exploit the hunting grounds off Peru and Galapagos using the factory ship Strombus and four whale

⁹⁵⁰ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 133. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

⁹⁵¹ Wasberg, G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 49. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

catchers.⁹⁵² The initiative proved to be an economic disaster resulting in huge losses for the company. In 1928, the management decided to stop all whaling activities in these areas.

These projects represent companies' ambitions to increase production by extending their whaling operations to new hunting grounds because production could not be increased in South Georgia. Even though their South American activities were brief, the combined activities of the projects in the Antarctic and South America increased A/S Tønsberg Hvalfangeri's overall production and generated enough profit to maintain the support of the shareholders. Despite declining whale oil prices and their failed whaling attempts in South America, the company produced solid economic profits. From 1907 to 1931, the overall value of the company's production was Kr136.157,000, which gave a net profit after depreciation of Kr23.817,000. This enabled the company to pay its shareholders dividends of Kr22.542,000.⁹⁵³

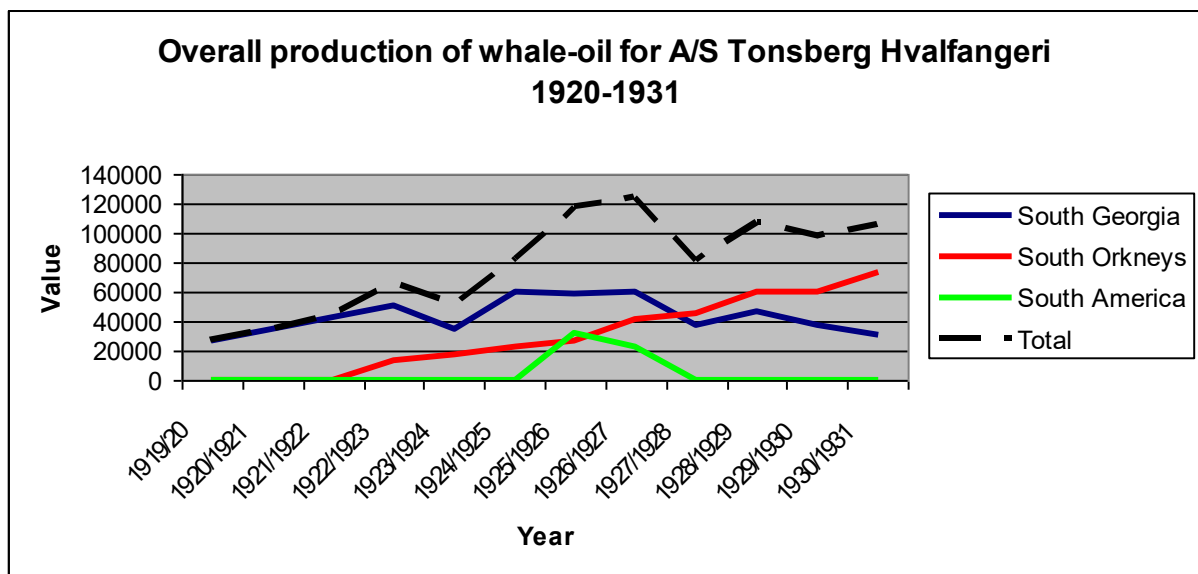


Fig 148. Chart indicating the overall production (from Husvik whaling station in South Georgia, Signy Island whaling station and pelagic expeditions, and Cia Ballenera del Peru & Ecuador Ltda) of A/S Tønsberg Hvalfangeri from 1919–1920 to 1930–1931. The overall production increased constantly from 1919 to 1928, then dropped slightly, only to increase again in 1929.

⁹⁵² Wasberg, G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 49. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁹⁵³ From Wasberg, G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

The economic recession in 1920–1921 and British regulations that limited the hunting seasons had a large impact on the development of the Antarctic whaling industry in the 1920s. As new technical innovations emerged, the industry was able to explore and exploit new hunting grounds in the Ross Sea and the Antarctic Peninsula.⁹⁵⁴ This allowed the whaling companies to counteract declining prices by increasing catches and production and thereby generate economic profits. The same strategy led to massive overproduction and the world economic collapse in 1929–1930, which had a devastating effect on the Antarctic whaling industry.

After a final attempt to make profits, the combined production of the whaling companies operating in the Antarctic was 3,700,000 barrels of whale oil after the 1930–1931 season. This was the largest annual production in history. At the same time, whale oil prices dropped drastically from £28 per ton in 1929 to £12 per ton in 1931.⁹⁵⁵ The economic crisis had devastating effects on A/S Tønsberg Hvalfangeri, and in 1932 the management closed their whaling station at Husvik Harbour and recalled their pelagic expeditions in the South Orkney Islands after a loss of Kr1.065,277.⁹⁵⁶

In 1932, the company agreed to the production quota made by the Norwegian Whaling Union after a sales agreement with Unilever of £13 per ton of whale oil.⁹⁵⁷ Even though the 1930s was a decade of difficulties and restructuring of the modern whaling industry, A/S Tønsberg Hvalfangeri prevailed. From 1931 to 1945, the company's management equipped several pelagic expeditions, which generated an economic profit of Kr2.473,000.⁹⁵⁸ Prior to the 1945–1946 season, the management re-opened the whaling station at Husvik Harbour and operated it until 1961, when they closed it for good.⁹⁵⁹

⁹⁵⁴ Hart, I.B. *Whaling in the Falkland Islands Dependencies 1904-1931: A history of shore and bay-based whaling in the Antarctic*. 2006. P: 195ff.

⁹⁵⁵ Hart, I. B. *Whaling in the Falkland Islands Dependencies 1904-1931: A history of shore and bay-based whaling in the Antarctic*. 2006. P: 316-317.

⁹⁵⁶ Wasberg, G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 62. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁹⁵⁷ Basberg, B.L. *Productivity in the 20th century Antarctic pelagic and shore station whaling- Growth and stagnation in two technological regimes*. 1995. P: 11.

⁹⁵⁸ Wasberg, G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 59-70. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁹⁵⁹ Basberg, B.L. *The Shore Whaling Stations at South Georgia- A Study in Antarctic Industrial Archaeology*. 2004. P: 61.

Concessions, leases, and politics in the South Orkney Islands

To successfully establish a whaling operation in the South Orkney Islands, the company also needed to enrol the support of the British authorities, who claimed to have control of the South Orkney Islands. A/S Tønsberg Hvalfangeri appointed Hans Borge to take charge of the company's negotiations with the British authorities for a concession and lease in the South Orkney Islands.⁹⁶⁰ The choice to assign Borge was strategic since he had extensive whaling experience having been the manager of A/S Kastor⁹⁶¹ and A/S Rethval.⁹⁶² He had been the local manager of A/S Rethval from 1911 to 1915 when the company had operated in the South Orkney Islands. Borge had knowledge of local conditions, good anchorages, and freshwater supplies in the area. This put him in a unique position to assess and suggest a location for the company's industrial operations. The management's decision to expand their local network in the Antarctic by applying for a concession in the South Orkney Islands was probably influenced by Borge on the basis of his knowledge and previous experience there. Borge's maps and local knowledge were probably also instrumental in securing the shareholders' support for a potentially risky industrial project in one of the harshest areas in the Antarctic.

Borge applied for a concession and lease for five years to establish a whaling station at the South Orkney Islands. The company intended to operate with two whale catchers.⁹⁶³ The application was discussed internally at the British Colonial Office and they realised that the South Orkney Islands had not been exploited since the area was abandoned by A/S Rethval after the 1914–1915 season.⁹⁶⁴ Therefore, there were no environmental reasons to decline the application. It was also argued that granting the company's application would benefit the British Dependencies Committee, as it could act as a support base during their visits to the area. The magistrate in South Georgia further

⁹⁶⁰ Wasberg. G.C. *Femti år I konkurransen og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 105. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁹⁶¹ Sørensen. G, Hoff. J.O, Halvorsen. L & Salicath. C. *Hvalfangsten- Dens historie og mænd*. 1912. P: 45.

⁹⁶² Roberts. B. *Chronological list of Antarctic Expeditions*. 1958. Vol: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁹⁶³ "Letter from G. Grindle at the Colonial Office, to Herr. Borge (Tonsberg Whaling Co). July 12, 1920". Also in: "Letter from the Crown Agents to the Tonsberg Whaling Co. November 21, 1921", and "Letter from W. A. Thompson, acting Colonial Secretary to the Crown Agents for the Colonies. September 1, 1921". The Falkland Islands Archive. Vol: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁹⁶⁴ Roberts. B. *Chronological list of Antarctic Expeditions*. 1958. Vol: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

supported the company's application because they had already transported parts of the station to Husvik Harbour ready to transport them on to Signy Island and start construction when the application was approved.⁹⁶⁵

The British authorities' were probably worried about losing control of the South Orkney Islands after Fridtjof Nansen, Norwegian Minister in London at the time, had questioned the British Foreign Secretary Edward Grey about the validity of the 1906 British claims to the Antarctic.⁹⁶⁶ The Norwegian government was not satisfied with the answer but wanted to protect Norwegian economic interests so chose not to challenge the British claim. Instead the Norwegian Chargé d'affaires in London, Johannes Irgens, suggested in September 1907 that the British government should amend the declaration of their territory.⁹⁶⁷ On July 21, 1908 the British government did just that with the Letters Patent, where it declared that the South Orkney Islands and several other areas in the Antarctic were now under the newly formed British Antarctic Dependencies.⁹⁶⁸ The Letters Patent stated that "*the group of islands known as South Georgia, the South Orkneys, the South Shetlands, and the South Sandwich Islands, and the territory known as Grahams Land, situated in the South Atlantic Ocean to the south of the 50th parallel and south latitude, and lying between the 20th and the 80th degrees of west latitude, are part of our dominions*".⁹⁶⁹

There was nothing over which the British authorities in the Falkland Islands could exercise sovereignty in the South Orkney Islands until A/S Tønsberg Hvalfangeri and other whaling actors showed a renewed interest in the area. These companies supplied the British authorities with a platform on which to base their territorial claim.⁹⁷⁰ The

⁹⁶⁵ "Letter from Edw. B. Binnie, Magistrate of South Georgia, to H.E. the Governor in Stanley. August 13, 1920". The Falkland Islands Archive. Vol: Vol: SG&DEP. WHALING-General (1), 1915-1921. SGD/WAH/1.

⁹⁶⁶ "Angående forhandlinger mellem Norge og England vedrørende den Britiske annekasjon av Syd-Shetland – Syd-Georgia området". Archive: Hvalfangerforeningen. Korrespondanse angående internasjonale avtaler. Vol: 2. 1920-30 årene. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

⁹⁶⁷ Aagaard. B. *Antarktis 1502-1944. Oppdagelser, naturforhold og suverenitetsforhold*. 1944. P: 62. In: Meddelelser No 60. Norges Svalbard og Ishavs-Undersøkelser.

⁹⁶⁸ "British Letters Patent of 1908, and 1917 constituting the Falkland Islands Dependencies". 1948. In: Polar Record. Vol 5, January-July 1948.

⁹⁶⁹ "British Letters Patent of 1908, and 1917 constituting the Falkland Islands Dependencies". 1948. In: Polar Record. Vol 5, January-July 1948. P: 241. See also: Smedal. G. *Acquisition of sovereignty over Polar Areas*. 1931. P: 75. In: Skrifter om Svalbard og Ishavet, No 36. Norges Svalbard og Ishavs-Undersøkelser.

⁹⁷⁰ Several whaling companies applied for concessions in the South Orkney Islands; among them were the Norwegians Chr. Christensen and Ingvald Bryde. "Letter from Ingvald Bryde, to the Colonial Office. November 8, 1921", and "Letter from Chr. Christensen, to the Under Secretary of State, Colonial Office.

stations could also act as a support base for British officials and scientific expeditions. British attempts to increase control over the whaling industry were not limited to the Falkland Islands Dependencies. In 1923, the British government tried to incorporate the Ross Sea into their territory by issuing an Order in Council on July 30, 1923, which claimed that “*all islands and territories between Long. 160° E and 150° W south of Lat. 60° S*” were British.⁹⁷¹ This claim was not well supported within the whaling industry. The area was regarded as a part of the high sea and free to exploit. Great Britain could not “*rightly claim sovereignty over the lands bordering the Ross Sea*”.⁹⁷²

In 1923, the Interdepartmental Committee was replaced by the Discovery Committee.⁹⁷³ The purpose of this research organisation was to materialise the suggestions made by the Interdepartmental Committee. This included increasing the influence and participation of British nationals in the Antarctic whaling industry.⁹⁷⁴ The primary reason behind this, according to Tønnesen, was related to the societal situation in Great Britain after the First World War. It was important to create employment for demobilised soldiers and other unemployed people.⁹⁷⁵ Although this was undoubtedly important, one should not overlook the interest to increase British knowledge of the industry and overcome the Norwegian dominance. The Committee also made suggestions for sustainable exploitation of whales,⁹⁷⁶ and surveyed and produced maps.⁹⁷⁷ An additional motive behind producing maps may have been to nationalise the areas within the Falkland Islands Dependencies through naming and publications.

November 12, 1921”. Vol: D5-1-4-4. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁹⁷¹ Smedal. G. *Acquisition of sovereignty over Polar Areas*. 1931. P: 75. In: *Skrifter om Svalbard og Ishavet*, No 36. Norges Svalbard og Ishavs-Undersøkelser.

⁹⁷² Smedal. G. *Acquisition of sovereignty over Polar Areas*. 1931. P: 76. In: *Skrifter om Svalbard og Ishavet*, No 36. Norges Svalbard og Ishavs-Undersøkelser.

⁹⁷³ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 162. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

⁹⁷⁴ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 258f. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*. The work of the Discovery Committee was funded through the revenues paid by the whaling companies that operated in the Antarctic, and there were frequent complaints from the whaling industry as to how the Committee spent their budget.

⁹⁷⁵ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 262. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

⁹⁷⁶ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 264. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

⁹⁷⁷ In the resulting Discovery Reports of the expeditions 1926-1930, a number of new maps over sites at South Georgia, the South Orkney Islands, and the South Shetland Islands are published. See: *The Discovery Reports*. Vol: 1-25. Vol: 26-36 by the National Institute of Oceanography. 1929-1980.

Dodds has remarked that place names recorded colonisation and settlement, and were public reminders of territorial sovereignty.⁹⁷⁸ Similarly, Latour has shown how map-making enabled “*domination at a distance*”.⁹⁷⁹

Maps had practical and symbolic purposes. Attempts to establish sustainable and long-term exploitation of the whale populations within the Falkland Island Dependencies was most likely motivated by the desire to enhance control of the whaling industry. The British authorities exercised sovereignty and implemented control mechanisms and regulations, which legitimised the scientific observations made by the Discovery Committee’s expeditions. Ironically, these expeditions were funded by the industry they aimed to regulate.

From the mid-1920s onwards, Norwegian industrialists also started supporting scientific research expeditions such as the Norvegia expeditions, which also had imperialistic motives. The logistical capability and knowledge of the whaling industry were vital tools for claiming national sovereignty over newly discovered areas. Official Norwegian scientific expeditions with the same intentions would have risked political conflicts in the area. From 1927–1931, the Norwegian Lars Christensen went on several expeditions to locate and survey new whaling grounds in the Southern Ocean. These expeditions had geo-political purposes since their secondary task was to discover territories that could be claimed on behalf of Norway.⁹⁸⁰ The expeditions were successful; they resulted in several whaling expeditions⁹⁸¹ and Bouvet Island was claimed in 1927 and Peter I Island in 1929.⁹⁸² During the last expedition in 1930–1931, a small airplane⁹⁸³ was used to spot whales and to drop the Norwegian flag at Dronning

⁹⁷⁸ Dodds, K. *Pink Ice: Britain and the South Atlantic Empire*. 2002. P: 26. See also: *The Politics of Naming: Contested Observations and the Shaping of Geographical Knowledge*. 2002. Pp: 155-197. In: *Narrating the Arctic: A Cultural History of Nordic Scientific Practices*. 2002. Editors: Bravo, M, and Sörlin, S.

⁹⁷⁹ Latour, B. *Science in action: How to follow scientists and engineers through society*. 1987. P: 223f. See also: Burnett, D.G. *Masters of All They Surveyed: Exploration, Geography, and a British El Dorado*. 2000.

⁹⁸⁰ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 307. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*. See also: *Norsk Hvalfangsttidende*. No 8, August 1928. P: 162. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

⁹⁸¹ *Norsk Hvalfangsttidende*. No 8, August 1928. P: 162. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

⁹⁸² Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 307f. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

⁹⁸³ *Norsk Hvalfangsttidende*. No 6, June 1930. P: 177. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

Maud Land, which was claimed by Norway in 1939 and became the largest Norwegian claim in the Antarctic.⁹⁸⁴

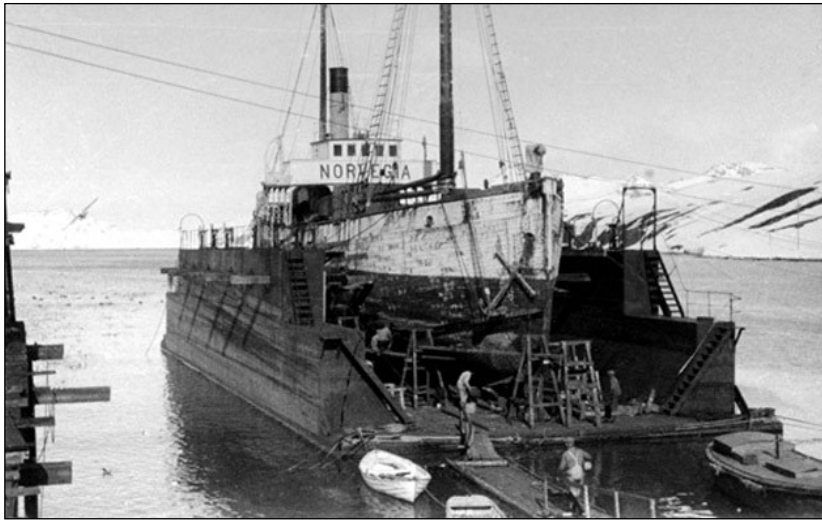


Fig 149. The Norvegia (former Vesleper) being repaired in a dry dock at Grytviken whaling station at South Georgia in 1928 after a serious incident at Bouvet Island. The photo has been published with the kind approval of Kommendør. Chr. Christensen's Hvalfangst Museum, Norway.⁹⁸⁵

By the late 1920s, the British authorities were using long-term regulations and control of the modern whaling industry in the South Orkney Islands to legitimize their sovereignty.

In preparation for an official statement and standpoint to the Argentinean government on the South Orkney Islands, a confidential despatch was sent from Amery at Downing Street to the Falkland Islands' administration in October. Amery requested that the authorities in the Falkland Islands present "*any facts relating to the grant of permits covering the use of the South Orkney Islands for whaling purposes or otherwise, the issue of which would indicate the exercise of sovereignty by His Majesty's Government of sovereign rights in the South Orkneys*".⁹⁸⁶ This statement demonstrated the transformation of British interest in the area from 1908 onwards, as well as the strategic role of the Antarctic as a platform for scientific and meteorological observations in the post-war years. The Antarctic also provided a subsidiary income, which contributed to financing

⁹⁸⁴ Elstad. Å. *Den første norske oljealderen*. 2004. P: 291. In: Norsk Polarhistorie. Vol: 3. Editors: Drivenes, E-A, and Jølle. H. D.

⁹⁸⁵ Ref: The Andersson photo-collection. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord, Norway. For more information about the Norvegia expeditions, please see: Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 307f. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

⁹⁸⁶ "*Confidential despatch from L.S. Amery, to the Office administering the Government of the Falkland Islands. October 17, 1928*". The Falkland Islands Archive. Vol: Dependencies-Whaling 3, 1923-1929. S of S CS [C4/28]. Fldr: 24.

the activities of the British Discovery Committee and its expeditions. A supplement was also paid to the Falkland Islands government for administrative costs.

Contacting the British Colonial Office to get a permit for whaling operations in a specific area supported British claims to the archipelago since the application was recognition of British claims. The processing, approval, and issuing of whaling concessions and leases, which occasionally included a visit from the magistrate of South Georgia or his officers, were acts of sovereignty that enforced and sustained British claims to the archipelago.⁹⁸⁷

The concession and lease of A/S Tønsberg Hvalfangeri was granted in August 1920. It was a loosely defined lease of 500 acres of land at Signy Island for an annual rent of £250⁹⁸⁸ for a period of five years.⁹⁸⁹ After the lease and concession expired in 1925, it could be renewed for another five years, including the rights to extend it for another three years if desired.⁹⁹⁰ The concession and lease demanded the whales caught be fully utilised. According to the concession, the whales did not necessarily have to be processed exclusively at Signy Island, but could be divided between Signy Island and another platform such as the company's whaling station at Husvik Harbour in South Georgia.

However, the approval did not include the rights to use a factory ship so the board of Tønsberg Hvalfangeri decided to establish a whaling station that could process meat and bones and store the blubber onboard the sailing ship for later processing at the whaling station in South Georgia.⁹⁹¹ The concession and lease were probably designed like this to

⁹⁸⁷ "Letter from R.L. Craigie at the Foreign Office, to the Under Secretary of State, Colonial Office. March 14, 1929". Vol: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁹⁸⁸ *Enclosure of despatch No 92 of August 13, 1920 to Aktieselskabet Tonsberg Hvalfangeri. Tonsberg, July 27, 1920*. See also: "LEASES Sc: Orkneys. No 668/20. Secretary of State No 81. 12 July 1920". The Falkland Islands Archive. Vol: SOUTH GEORGIA. PEOPLE – Whaling (1), 1915-1935. STACK.

⁹⁸⁹ "Whaling Permits Issued for the South Orkney Islands". See also: "Re/ Tonsberg Whaling Companys Licence at South Orkney, to the Under Secretary of State, Colonial Office. July 26. 1924". Vol: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁹⁹⁰ "Whaling Permits Issued for the South Orkney Islands". See also: "Re/ Tonsberg Whaling Companys Licence at South Orkney, to the Under Secretary of State, Colonial Office. July 26. 1924". Vol: D5-1-4-5. See also: The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

⁹⁹¹ "C.S.O No 668/20. Letter from Stipendary Magistrate Thompson, South Georgia 4. october 1920, to H.E. The Governor». SOUTH GEORGIA. PEOPLE – Whaling (1), 1915-1935. STACK.

force the whaling company to establish a whaling station and enforce effective British-approved occupation of the area. The installations communicated a political message of ownership, control, and effective management. Another benefit to granting the application was that the infrastructure could be used by the British Dependencies Committee. A/S Tønsberg Hvalfangeri were forced to build an infrastructure on land to process the whales they caught. Fieldwork performed at the site in 2010 showed that the company's station was relatively small and simple. This small investment in the station shows that the company's primary interest was the harbour at Borge Bay and the freshwater sources there, rather than their whaling station at Signy Island.



Fig 150. Map of the South Orkney Islands.⁹⁹²

Securing a five-year concession and lease at Signy Island gave the company a platform upon which to expand their industrial activities in the Antarctic.

⁹⁹²https://www.google.no/search?q=south+orkney+islands.png&source=lnms&tbn=isch&sa=X&ved=0ahUKewiXp9Dc3u7bAhWDWSwKHRzaASIQ_AUICigB&biw=1251&bih=576#imgrc=BspXLt1qddP4XM:&spf=1529927140829. Accessed 25.06.2018.

A changing market

As discussed earlier, the company picked a bad time to expand its whaling operations in the Antarctic because the market and prices for whale oil had plummeted. Other raw materials such as coal also plummeted on the post-war market. This was partly due to national economic and political instability across Europe, combined with beliefs in a demand for cheap margarine. The situation became worse as merchants in Great Britain and the Netherlands joined forces to form a buyers' union, offering the whaling companies £30.20 per ton of whale oil.⁹⁹³ In August 1921, the whaling industry responded by demanding £32.10 per ton for their oil. The ultimatum had the intended effect and several whaling companies sold their oil at £32.50 per ton. Although this was an improvement, it represented merely 33% of the prices they had received the previous season.⁹⁹⁴

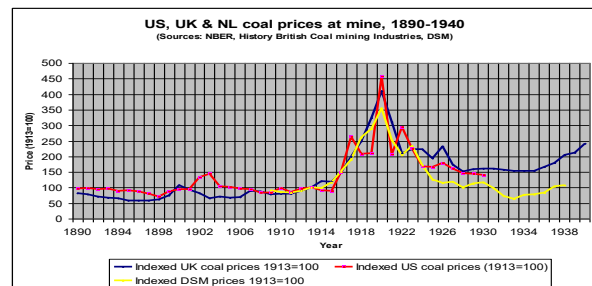
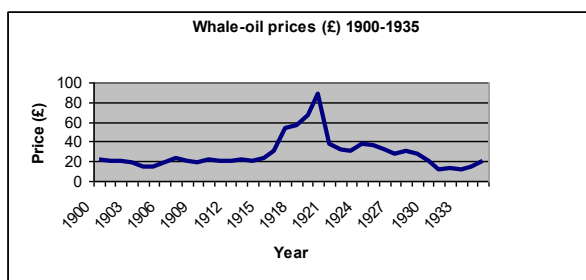


Fig 151 and 152. Prices for whale oil in relation to coal in the USA, Great Britain, and the Netherlands. Prices for both dropped suddenly as a reaction to the post-war recession.⁹⁹⁵ Basberg has argued that although there were brief periods when prices for whale oil went up, the overall trend after 1920 was a downward one.⁹⁹⁶ The period 1918–1920 may have been an anomaly and the sudden price drop in 1920–1921 may represent a return to “normal” price levels.

The management of Tønsberg Hvalfangeri reacted to the poor market conditions by stopping their activities in the South Orkney Islands in 1921–1922.⁹⁹⁷ Under these

⁹⁹³ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 180. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

⁹⁹⁴ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 180. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

⁹⁹⁵ The chart is based on Hart. I.B. *Whaling in the Falkland Islands Dependencies 1904-1931. A history of shore and bay-based whaling in the Antarctic*. 2006. P: 316-317. The chart illustrating coal-prices and their indexes have been kindly supplied by H. R. De. Haas, Arctic Centre, University of Groningen, Netherlands.

⁹⁹⁶ Basberg. B.L. *Technological transformation in the Norwegian Whaling Industry in the Interwar Period*. 1985. P: 93. In: *The Scandinavian Economic History Review and Economic and History*. Vol: XXXIII, No 2. Pp: 83-107.

⁹⁹⁷ “Letter from Tonsberg Hvalfangeri, to the Crown Agents. Tonsberg, November 11, 1921”. The Falkland Islands Archive. Vol: Dependencies- Whaling 2, 1920-1922. S of S CS [668/20]. Fldr: 7.

conditions, it was a financial risk to equip an expedition to Signy Island. Instead, the company and its shareholders decided to wait and see whether the market improved before resuming their activities in the area.⁹⁹⁸ The magistrate Edward Binnie, who had supported the company's application, suggested that the company use a factory ship rather than transporting the blubber to Husvik Harbour for processing.⁹⁹⁹ There might have been underlying political motives (to increase industrial activity in the area) for this recommendation. In the spring of 1922, the British authorities supported the magistrate's recommendation and allowed the whaling company to use a factory ship in conjunction with the whaling station at Signy Island. The authorities may have feared a repeat of the 1914–1915 situation (when the whaling companies withdrew from the area) if they did not ease the operational conditions for the whaling company. This must have been a pleasant surprise for A/S Tønsberg Hvalfangeri since it gave them the manoeuvrability to make their activities in the area more efficient and to increase their production to compensate for the falling prices.

Tønnesen (1969) argued that the whaling station at Signy Island only functioned as a provisional production platform because it was impossible to maintain a station there. The station was abandoned during winter and the company dug it from the snow only to find it almost demolished. This was, according to Tønnesen, the reason the company got permission to use a factory ship for the 1922–1923 season.¹⁰⁰⁰ The company only got permission to use the factory ship for one season (1923–1924) because many of their machines had suffered from the winter and had to be replaced.¹⁰⁰¹

⁹⁹⁸ "Letter from Tonsberg Whaling Co, to the Crown Agents. November 11, 1921". The Falkland Islands Archive. Vol: SOUTH GEORGIA, PEOPLE – Whaling (1), 1915 – 1935. STACK.

⁹⁹⁹ «Letter from the Magistrates Office, South Georgia 15.december 1922, to the Hon. Colonial Secretary in Stanley». The Falkland Islands Archive. Vol: SOUTH GEORGIA, PEOPLE – Whaling (1), 1915 – 1935. STACK.

¹⁰⁰⁰ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 298. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling*.

¹⁰⁰¹ «Letter from the officer administrering the Government of the Falkland Island, to Downing Street. 10. october 1923», and «Letter from Tonsberg Hvalfangeri to The Under Secretary of State, Colonial Office, 4 Aug 1923», Despatch Book, Jan 1923 – Dec 1923. Inward. The Falkland Islands Archive.

Constructing the local network at Signy Island

A/S Tønsberg Hvalfangeri established a whaling station at Signy Island and developed it through the 1920s. Here, I discuss how the company constructed its local network and how they designed, organised, and adapted it. I will also discuss why they shaped their local network as they did. This section is based on results from archaeological fieldwork during the LASHIPA 8 expedition in 2010. This fieldwork explored how and why the local network was designed the way it was, and how the production lines functioned. The results from the fieldwork completed the archival sources and allowed me to answer questions related to the design and organisation of the local network. This information is important to establish whether problems in the local or global networks caused the project to fail.

The local network at Signy Island can be subdivided into four different phases:

- Phase 1 – construction of the whaling station
- Phase 2 – operations in the station and Orwell I
- Phase 3 – operations in the station and Orwell II
- Phase 4 – closure of the project

Signy Island was subdivided into three main areas during the fieldwork: 1) the station area, 2) the graveyard area, and 3) the freshwater area.

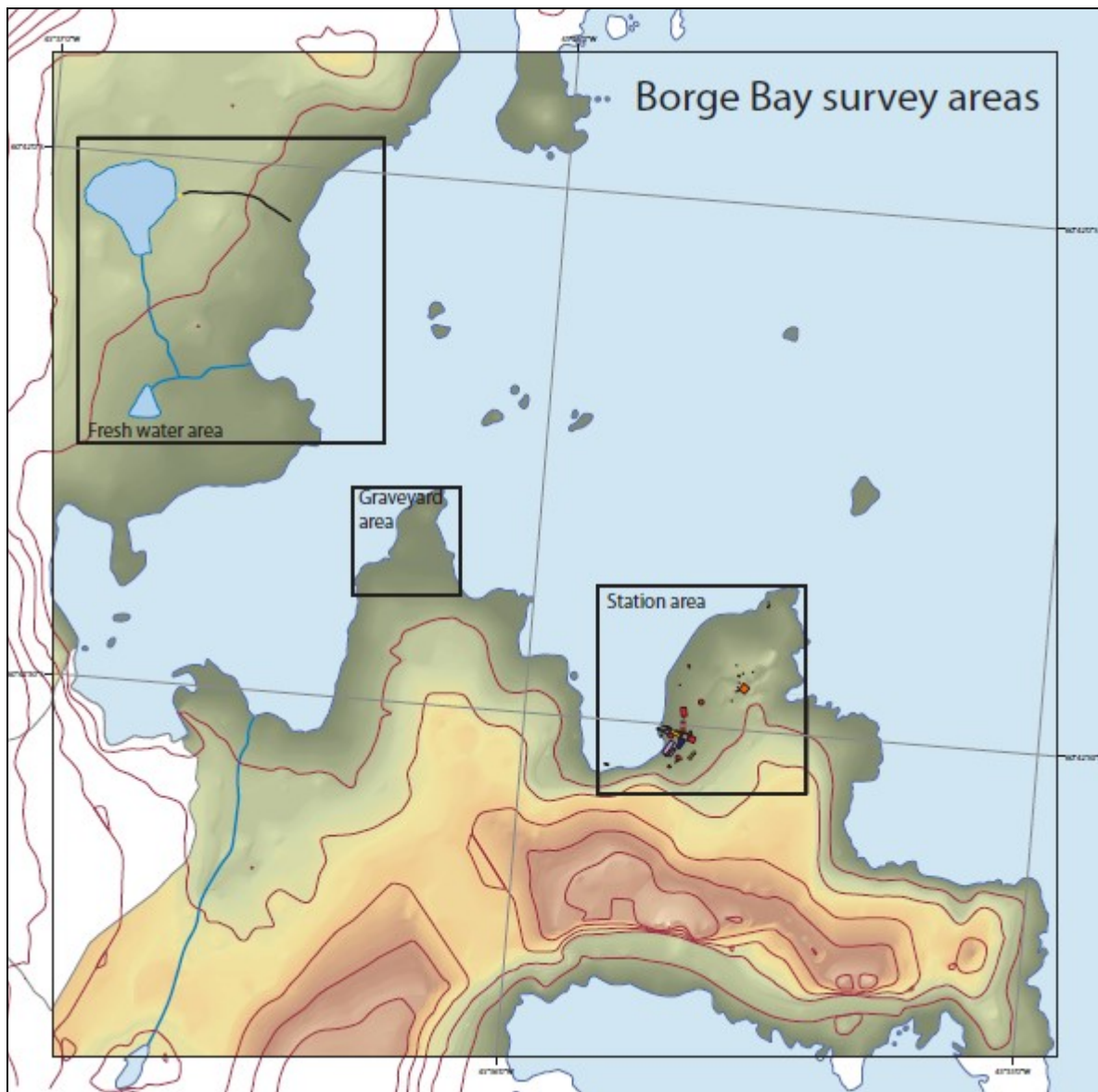


Fig 153. Map showing the main survey areas of the LASHIPA 8 fieldwork at Signy Island in 2010. Map by U.I. Gustafsson, D. Avango, and F. Steenhuisen, Arctic Centre, the Netherlands.

Phase 1 – construction of the whaling station

The first expedition of A/S Tønsberg Hvalfangeri to the South Orkney Islands in 1920–1921 was led by Captain Søren Berntsen, who was the first local manager of Husvik Harbour whaling station.¹⁰⁰² The expedition consisted of the sailing ship *Teie*, which carried boilers and cookers for the whaling station, and two whale catchers. The expedition was accompanied by William Barlas, an officer from the magistrate’s office in

¹⁰⁰² Wasberg. G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 116. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

South Georgia.¹⁰⁰³ He participated because he wanted to obtain enough information to define and complete the lease granted to the company. Barlas sketched a map of the area at Signy Island where A/S Tønsberg Hvalfangeri chose to establish their local network and defined it as: “*The lot or parcel of land situated on Signy Island in the South Orkneys hereby leased is 500 acres more or less, in the harbour marked Bruce Harbour, with meters and bounds as follows: that is to say: Bounded on the north by a road reserved to His Majesty, bounded to the south by Crown Lands, and on the east by the coast line of the island, and on the west by Crown Lands rising from the land at sea level. , and the lot or parcel of land being part of the island called Signy Island, hereby leased, is coloured blue on the sketch or plan*”.¹⁰⁰⁴

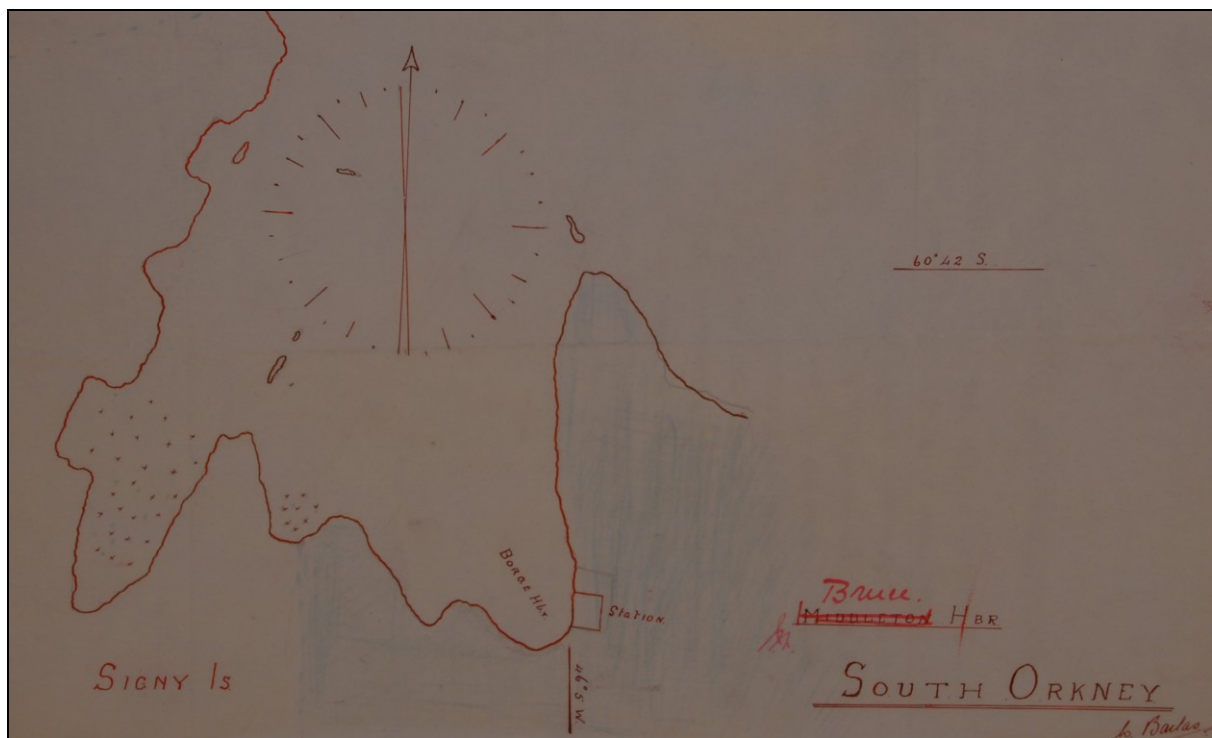


Fig 154. The map of Bruce Harbour produced by the acting magistrate William Barlas during the 1920–1921 expedition.¹⁰⁰⁵

¹⁰⁰³ “Whaling Permits issued for the South Orkney Islands”. Vol: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams. The position as acting Magistrate was formally held by Mr. Binnie. However, during the spring of 1921 he was relieved for a period by Mr. Barlas. For further reading, please see: Hart, I. B. “Antarctic Magistrate: a life through the lens of a camera”. 2009.

¹⁰⁰⁴ “Letter from the Magistrate Edw. B. Binnie to the Colonial Secretary. March 9, 1921”. The Falkland Islands Archive. Vol: South Georgia. PEOPLE – Whaling (1), 1915-1935 (STACK).

¹⁰⁰⁵ “Letter by the Governor J. Middleton. February 9, 1926”. The Falkland Islands Archive. Vol: South Georgia. PEOPLE – Whaling (1), 1915-1935 (STACK).

Barlas' role was modest since his only purpose was to draw a map that would define the extent of the lease. His participation may also have exercised sovereignty through effective management of the area. Barlas was an official representative of British authorities onboard the expedition and could influence the local manager's choice of location for the intended whaling station. Furthermore, producing the map (which was the reason he accompanied the expedition) was an important part of British colonisation of the area, as it displayed the empire's territorial extent in case of dispute. Furthermore, as Dodds points out, the production of maps and placing of names was an important part of exercising effective occupation.¹⁰⁰⁶ Wråkberg has remarked that the production and publication of maps and other geographical observations, including the naming, could be regarded as manifestations of interest over the areas in question.¹⁰⁰⁷ The board of A/S Tønsberg Hvalfangeri and the manager Berntsen had probably decided where their whaling station would be located prior to the expedition, and they probably based this decision on the maps and local knowledge of board member Hans Borge. They likely already had access to maps and surveys of the area similar to those that Petter Sørrele made in 1911.¹⁰⁰⁸

¹⁰⁰⁶ Dodds, K. *Pink Ice: Britain and the South Atlantic Empire*. 2002. P: 26.

¹⁰⁰⁷ Wråkberg, U. *The Politics of Naming: Contested Observations and the Shaping of Geographical Knowledge*. 2002. P: 158. In: *Narrating the Arctic: A Cultural History of Nordic Scientific Practices*. Pp: 155-197.

¹⁰⁰⁸ P. Sørrele was the predecessor of Hans Borge as local manager over A/S Rethval in the South Orkney Islands in 1911.



Fig 155. Petter Sørre's map over the South Orkney Islands, with detailed surveys of the anchorages at Bruce Harbour/Borge Bay and Powell Island. It is likely that the Sørre's local knowledge of the area was one of the primary reasons for the arrival of the factory ship *Lancing* in 1925.¹⁰⁰⁹

When the expedition arrived at the site, the members offloaded the materials for the whaling station and erected the buildings and technical installations. There are unfortunately no written sources describing this process. Fieldwork performed at the site by LASHIPA 8 in 2010 showed that this must have been a swift and relatively simple process since the station was small, consisting of a wooden flensing platform (Fig 155, No 2) that faced the bay to the east, one boiler house (Fig 155, No 9), one elevated meat and bone cookery (Fig 155, 3), one accommodation house (Fig 155, No 1), and one explosives shed (Fig 155, No 4).¹⁰¹⁰ The fieldwork showed that the site and the harbour were located behind a ridge and were well protected from winds, and that the bay was deep and relatively protected from swells and strong winds. This was important for flensing, transporting blubber to the factory ship, and the transportation of freshwater.

¹⁰⁰⁹ Map from: *Holtedahl. O. On the geology and physiography of some Antarctic and South-Antarctic Islands. Scientific results of the Norwegian Antarctic Expedition 1927-29.* Det Norske Videnskaps-Akademi i Oslo. 1929. Vol: D5-1-4-7. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams. See also: Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914.* 1967. Vol: 2. P: 390. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.*

¹⁰¹⁰ Gustafsson Ulf I, Avango Dag et.al. "*LASHIPA 8: Archaeological Expedition to South Orkney, South Shetland and the Antarctic Peninsula 6 March - 2 April 2010,*" (Forthcoming).

Freshwater was initially gathered from small glacial runoff streams – but this was time consuming and an unreliable source. Later, Tønsberg Hvalfangeri built a small pump house on the other side of the bay that pumped freshwater through metal pipes from a nearby lake to the shoreline (see figure 161). From the shoreline, the pipes were connected to the factory ships via hoses. The company also established a small cemetery where five people are buried (see figure 164). The British Antarctic Survey (BAS) has established a research station on the site where much of the whaling station stood. This has limited investigation of the remains.

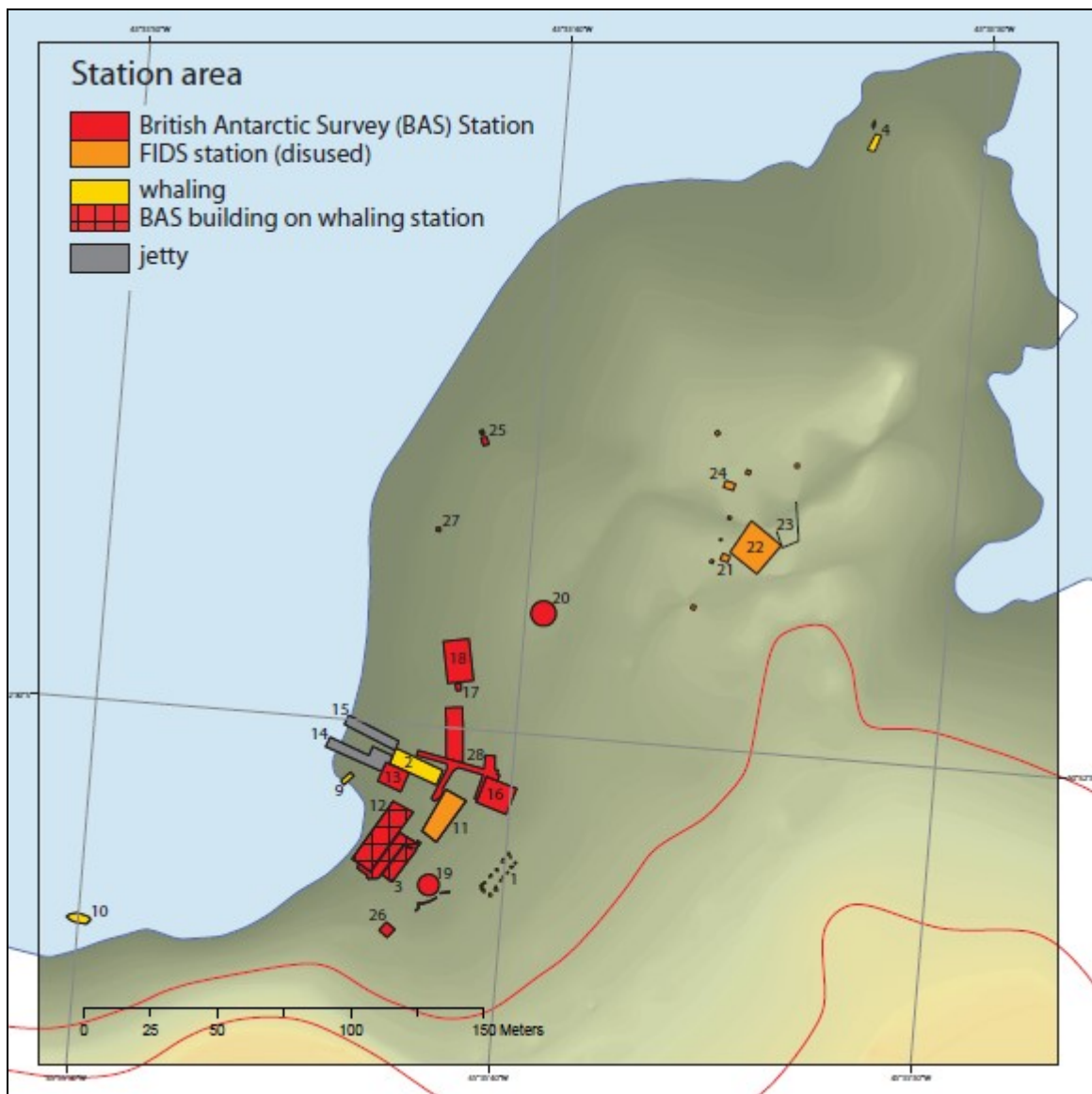


Fig 156. Map of the site at Signy Island where the whaling station was located. Today, the site is occupied by a British Antarctic Survey research station. Map by U.I. Gustafsson and D. Avango during the LASHIPA 8 expedition. Postprocessing by F. Steenhuisen, Arctic Centre.

Features of the whaling station at Signy Island

For more detailed information of the features, please see the upcoming LASHIPA 8 fieldwork report.

1 – Accommodation house

2 – Flensing platform

3 – Remains of cookery

4 – Explosives shed

9 – Steam boiler

According to Wasberg, the initial whaling station was only equipped with five pressure cookers for processing meat and bones.¹⁰¹¹ As the photo below shows, these five cookers were located in one row that faced the bay. This made it easier to throw residues into the bay. After cooking, the whale oil was tapped into the settling tanks on the opposite side of the construction. From the photo below, it seems likely that the station was equipped with at least two settling tanks. Compared with Husvik Harbour, this was a rather small and confined whaling station. This might indicate that the expedition took a careful approach to hunting here and were aware of the severe environmental circumstances that forced earlier expeditions to abandon the area.



Fig 157 and 158. Remains of the A/S Tønsberg Hvalfangeri whaling station at Signy Island. The photo on the right shows the station at the bottom of Bruce Harbour. The production area is located in the centre of the image, with the accommodation overlooking. Both photos have been published with the kind approval of the estate of David Wynn-Williams.¹⁰¹²

The whaling station at Signy Island was designed to process meat and bones into whale oil, while the blubber was processed on the factory ship. The fieldwork revealed how the

¹⁰¹¹ Wasberg, G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 46. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹⁰¹² Vol: D5-1-0-10.4 & D5-1-5-4. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

production line was organised. Whales were brought to the whaling station by two whale catchers. At the station, the whales were attached to an iron wire that was connected to one of three steam winches and hauled onto the flensing platform. Here, the workers separated the blubber from the carcass in long strips and chopped it into smaller pieces. These pieces were manually loaded onto one of three barges and taken to Teie, which lay anchored in the bay outside the whaling station. Meanwhile, the workers at the whaling station continued to process the whale carcass. Until the company replaced Teie with the factory ships Orwell I and later Orwell II, all flensing was done at the whaling station and blubber was towed between the two units. Once the two factory ships were introduced, the company changed the organisation of production and whales were flensed and processed onboard both ships.

On the flensing platform, the workers separated the meat and bones from the remaining carcass and pulled it onto the elevated wooden platform (the lemming platform) under which the cookers were located using a steam winch. This was done because meat and bones have different cooking times. On the elevated lemming platform, whale bones were cut into smaller pieces using a bone saw and distributed into the cookers. Once the cookers were filled, the top lid was screwed in place and steam was introduced to cook the bones. Steam for producing whale oil was supplied by a single steam boiler located in a small wooden building immediately east of the cookery. After cooking, the whale oil was tapped into a settling tank before being tapped into and stored in wooden barrels. The residues were thrown into the nearby bay.



Fig 159. The steam boiler that was used at the whaling station lies on the shore in front of present day BAS research station where it is deteriorating. Photo by U.I. Gustafsson. Arctic Centre. LASHIPA 8, 2010.

Steam made from freshwater is vital for the production of whale oil. Freshwater was transported to the station and factory ships using two water barges. During the first few seasons, water was collected from one of the many glacial rivers in the area. However, this was time consuming and inefficient. It relied on temperatures being warm enough for melting so was not a reliable water source. The local network needed to find a solution to this bottleneck to increase production.

Phase 2 – operations with the station and Orwell I

In the autumn of 1920, the company re-built their ship Orwell in Rotterdam, equipping it with enough cabins to accommodate 173 men.¹⁰¹³ When it became clear that the Colonial Office and the magistrate favoured the use of a factory ship, Tønsberg

¹⁰¹³ Wasberg, G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 46. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

Hvalfangeri acted fast and converted their ship into a factory ship with 14 small pressure cookers and six large open cookers.¹⁰¹⁴



Fig 160. The 3880-ton Orwell 1 was built in 1897 and was purchased by A/S Tønsberg Hvalfangeri in 1911 as a cargo ship. In 1922, she was re-built into a factory ship.¹⁰¹⁵

During the 1922–1923 season, the company integrated the 3880-ton factory ship Orwell I into their production unit in the local network at Signy Island. To be able to take advantage of their increased processing capability, they needed to find a reliable freshwater supply. The local manager, Berntsen, decided to extend the local network and build a pump house (Fig 160, No 5) by the shore of one of the glacial lakes near the whaling station. This pump house was connected to the beach via a 1000-metre metal

¹⁰¹⁴ "Letter from the Magistrate Edw. B. Binnie, to the Colonial Secretary in Stanley. December 15, 1922". The Falkland Islands Archive. Vol: DEPENDENCIES – Whaling (2), 1920-1922. STACK. This ship operated in conjunction with the whaling station at Signy Island until the 1925/26 season when the ship was replaced by the 10 500 tonnes Orwell II. The investment in this larger ship signalled the ambitions of the Tønsberg Hvalfangeri to increase their production and to expand their industrial operations to become increasingly pelagic based rather than shore based, and which was the overall trend and development within the modern whaling industry from 1925 onwards.

¹⁰¹⁵ The photo has been scanned from *Husvik Harbour*. 2007. P: 21. Booklet issued by Husvik and Nes Velforening, Historielaget. October 2007- 2nd issue.

pipe (Fig 160, No 6) and to the ship via a 75-metre hose.¹⁰¹⁶ This improved the local network's water supply. The fieldwork showed that the metal pipe was exposed all the way from the pumping station to the shoreline where the hose was located. This system was therefore sensitive to low temperatures, which caused the water to freeze.

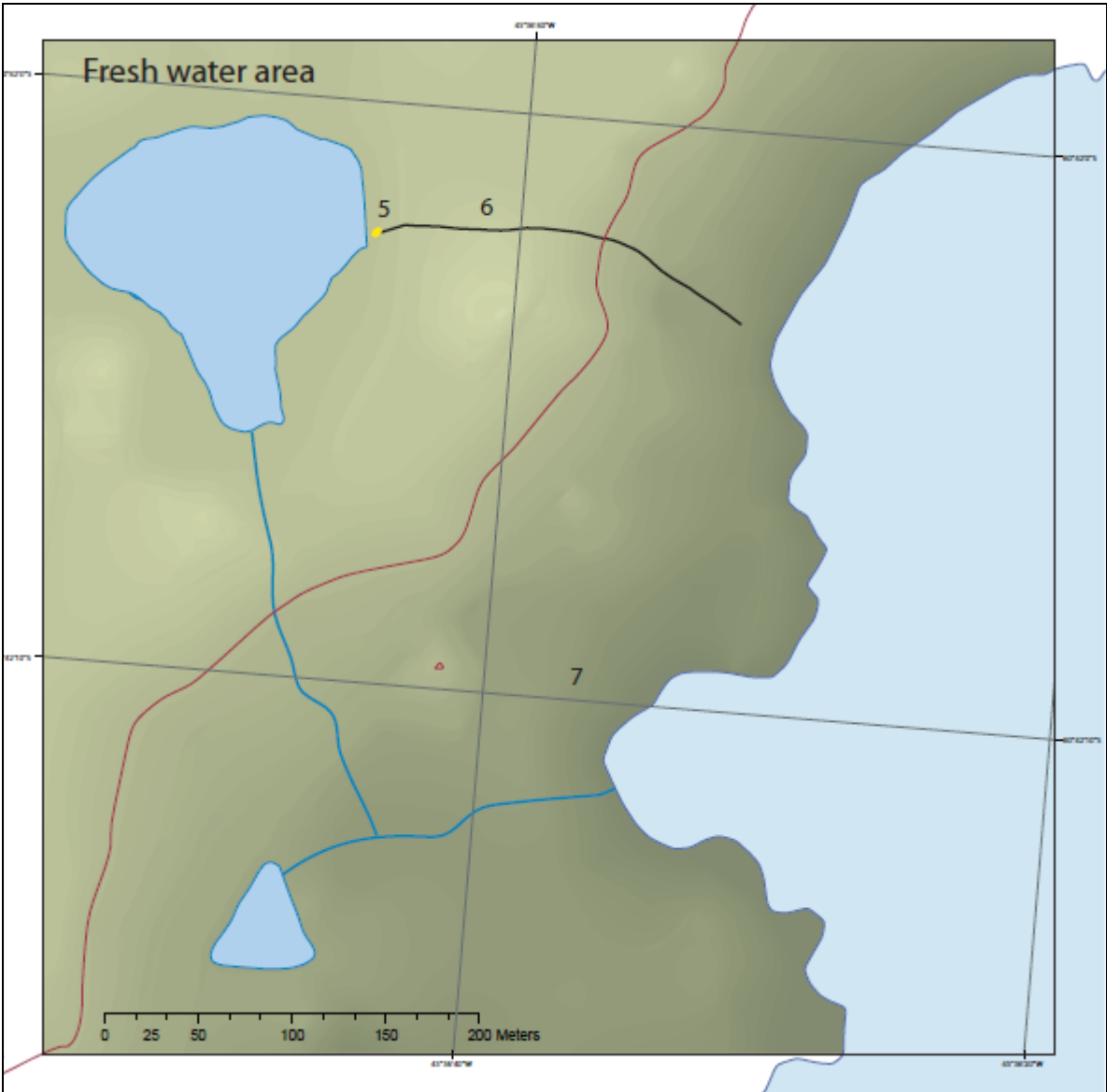


Fig 161. Map of the freshwater area at Signy Island. According to participants of Operation Tabarin, the pump house still worked when they built their research station at Signy Island in the 1940s. Map by U.I. Gustafsson and D. Avango during the LASHIPA 8 expedition. Postprocessing by F. Steenhuisen, Arctic Centre.

¹⁰¹⁶ "Søren Berntsens Private Dagbøger. Sesongen 1923/24". Courtesy of the Private Archive of Karl Jan Skontorp, Norway.

Features of the Signy Island freshwater area

5 – Pump house

6 – Water pipe

7 – Mooring

This solved the freshwater supply problems and enabled the company's two production units to operate at full capacity, which was necessary to increase production and keep up with processing the raw material brought in by the whale catchers. In the 1925–1926 season, the local network was enlarged further by the addition of an explosives shed, which the workers built on the shore immediately north of the whaling station.¹⁰¹⁷



Fig 162 and 163. In 1923, Berntsen extended the local network at Signy Island by establishing a pump house next to a nearby glacial lake. This was connected to the beach by an iron pipe to secure a constant supply of freshwater. In the 1950s, the house was still in situ. Today, it has collapsed and is in a poor state. The photo on the left has been published with the kind approval of the archival services of the British Antarctic Survey.¹⁰¹⁸ Right: Photo by U.I. Gustafsson. LASHIPA 8/2010.

Having access to two production units allowed Berntsen and Hansen to change the production line and increase the overall processing capacity. The factory ship was large enough for several flensing stations alongside its hull, and blubber could be processed onboard. Consequently, flensing, transport, and processing of the whales became more effective and allowed the local network to better deal with the raw materials brought in on the whale catchers. It also allowed the company to change the factory ship's position when drift ice started filling the bay. This was important since it allowed them to maintain their largest production unit.

¹⁰¹⁷ "Søren Berntsens Private Dagbøger. Sesongen 1925/26". Courtesy of the Private Archive of Karl Jan Skontorp, Norway.

¹⁰¹⁸ Ref: AD6-19-2-H. The Archive of the British Antarctic Surveys.

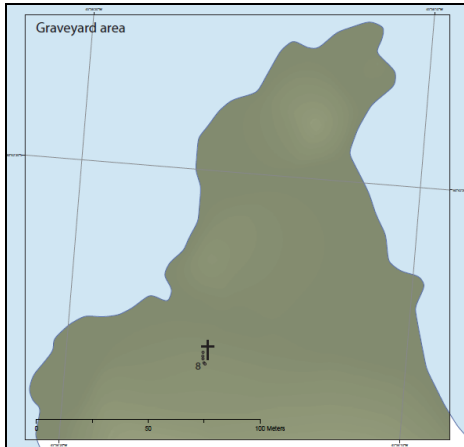


Fig 164 and 165. Map of the graveyard area at Signy island. Map by U.I. Gustafsson and D. Avango during the LASHIPA 8 expedition. Postprocessing by F. Steenhuisen, Arctic Centre. Right: Photo of the five gravecrosses. Photo by U.I. Gustafsson. Arctic Centre. LASHIPA 8, 2010.

Features of Signy Island graveyard area

Five graves with the following inscriptions (left to right):

- | | |
|-------------------------|------------------------------|
| 1 – No name visible | 2 – Henry Larsen Thorstensen |
| 3 – Aksel Olsen Helstad | 4 – Unknown whaler |
| 5 – John Johnsen | |

It is uncertain when the graveyard at Signy Island was established. The wooden crosses have been maintained and preserved by the personnell of the British Antarctic Survey station over the years. One of the graves is marked only with “unknown whaler” and no date is given. The oldest readable date is 1914 and is the grave of a person who worked onboard S/S Normanna. There are two graves of workers on S/S Orwell dated 1924 and 1926.



Fig 166. The explosives shed at Signy Island was erected during the 1925–1926 season. Its location on the northern-most point of Signy Island allowed the whale catcher crews to access explosives even if the bay was filled with ice and they couldn't access the whaling station. It is unclear whether the shed in the photo is the original construction, but the foundation are. Photo by G. Rossnes. LASHIPA 8 /2010.

The waters of the South Orkney Islands were good hunting grounds and the company was able to increase its catches. Therefore, the production line needed to be able to keep up with the raw materials that came in. The pump house and the connecting pipe established in 1923–1924 helped with this, but they were limited as to how much they could increase the production capacity. During this season, the company was only able to use the factory ship because the whaling station machinery had been damaged by heavy snowfall in the winter, and had to be replaced.¹⁰¹⁹ The local managers and the company board realised that they had to reorganise their local network in the South Orkney Islands to increase production. One of the ways in which the company tried to do so was to upgrade Orwell I with a new boiler plant, an additional 6 open cookers, and 20

¹⁰¹⁹ «Letter from the officer administrering the Government of the Falkland Island, to Downing Street. 10. october 1923». Despatch Book, Jan 1923 – Dec 1923. Inward. The Falkland Islands Archive.

open cookers. They hoped that this would be enough to keep up with the raw materials brought in by the whale catchers.¹⁰²⁰

The hunting grounds around the South Orkney Islands were the key to generating the economic profit needed to maintain the support of shareholders in the company's global network. These hunting grounds allowed for little expansion – all the company could do to increase production was upgrade their whale catchers and utilise the raw materials more fully. The company chose to continue investing in developing their local network at the South Orkney Islands by purchasing the 10,500-ton ship *Orwell II* in 1925.¹⁰²¹ Investing in their local network had constantly increased production so the company was convinced that this investment would increase their overall profits and secure their future in Antarctic whaling. A ship of this type could be transferred to potentially more profitable hunting grounds if needed.

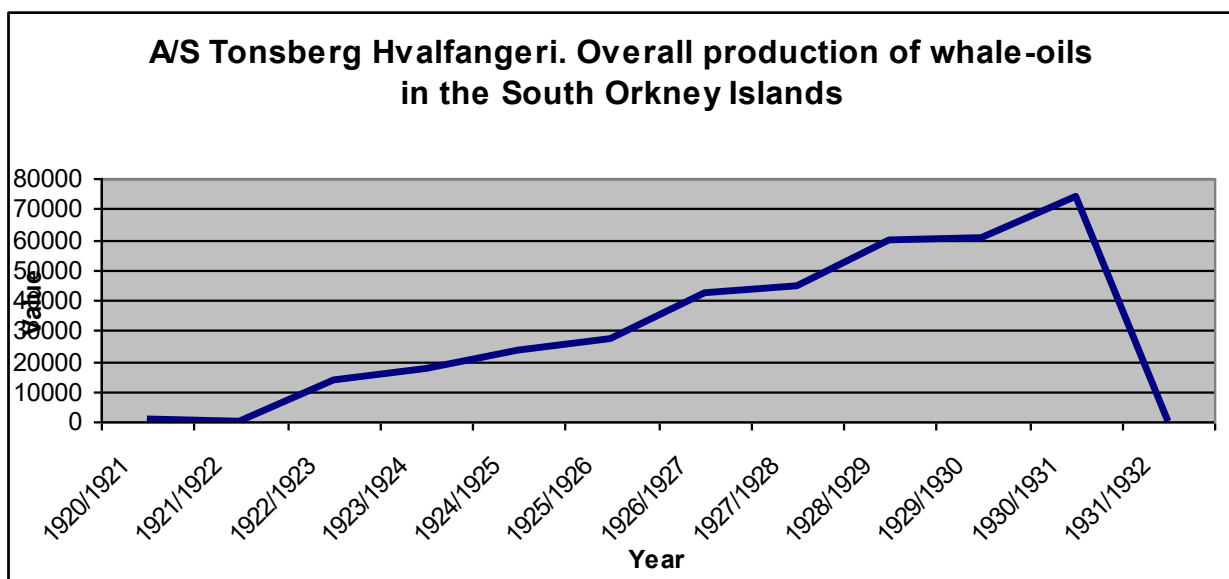


Fig 167. The overall production of whale oil by A/S Tønsberg Hvalfangeri expeditions in the South Orkney Islands from 1920–1921 to 1931–1932.¹⁰²²

¹⁰²⁰ "Letter from Aktieselskabet Tonsberg Hvalfangeri, to the Under Secretary of State, Colonial Office. July 26, 1924". The Falkland Islands Archive. Vol: DEPENDENCIES – Whaling (3), 1923-1929. STACK.

¹⁰²¹ Wasberg, G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 119. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹⁰²² The chart is based on data collected from Wasberg, G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 46 & 115. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams, and Norsk Hvalfangsttidende. No 6, June 1925. P: 1. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord, Norway. "Søren Berntsens Private Dagbøger". Courtesy of the Private Archive of Karl Jan Skontorp, Norway, and International Whaling Statistics. 1930.

Phase 3 – operations with the station and Orwell II

The Orwell II (former Knight Templar) had been purchased by Alfred Holt & Co in Liverpool and the company re-built it into a factory ship in Rotterdam. This ship was approximately three times larger than its predecessor and could accommodate 260 workers and a crew of 40.¹⁰²³ She was equipped with 42 pressure cookers and 8 open cookers in the stern, which gave her a theoretical processing capacity of 900 barrels per day, including the ability to utilise the whales better. This ship was, according to Hart, the most effective floating factory that operated in the Antarctic since the First World War.¹⁰²⁴



Fig 168. The 10,500-ton Orwell II purchased in 1925 and used as a production platform in the South Orkney Islands in the 1925–1926 season.¹⁰²⁵

In addition to this investment, the company upgraded the whale catching fleet at Signy Island with three catchers (Busen 1, 2 and 3) which had radio communication and

¹⁰²³ Wasberg. G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 119. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹⁰²⁴ Hart. I. B. *Whaling in the Falkland Islands Dependencies 1904-1931: A history of shore and bay-Based whaling in the Antarctic*. 2006. P: 181.

¹⁰²⁵ Volume D5-1-4-8. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

homing devices.¹⁰²⁶ These three boats were comparably larger and more powerful than the whale catchers they had used earlier in the area.¹⁰²⁷ The increased size and engine power gave them more towing capacity and extended their operational range, which meant they could hunt and exploit whales in a larger hunting ground.

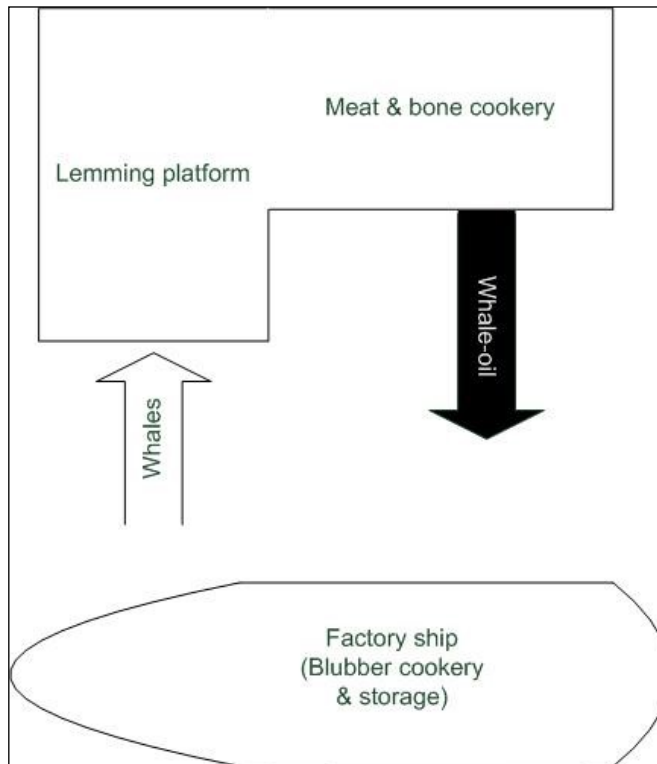


Fig 169. The flow of production at Signy Island whaling station.

The size and processing capacity of this ship had two important effects on the local network. Firstly, she increased the processing capability of the whaling station. Secondly, and perhaps more importantly, she allowed the company to move away from British control and operate in a true pelagic sense, since she was equipped with a distillators and was large enough to support a fleet of whale catchers. When the *Lancing*, the first pelagic factory ship, visited the hunting grounds at the South Orkney Islands during the 1925–1926 season, Berntsen expressed his concerns over increased competition to the Colonial Office by stating that “*the whalers of the floating factory Lancing are catching in the same whaling grounds as ours, and we do not think that the*

¹⁰²⁶ "Søren Berntsens Private Dagbøker. Sesongen 1925/26". Courtesy of the Private Archive of Karl Jan Skontorp, Norway.

¹⁰²⁷ Busen 1,2 and 3 had been built in 1922 or later, and were equipped with 650-690 Hkr engines, while the former whale catchers Husvik, Ruggen and Viking had been built 1908-1912 and had 350-450 Hkr engines. The whale catcher Sperm stands in this context out, having been built in 1912, but had been purchased on behalf for the whaling company in 1919, and equipped with a 700 Hkr engine. For further reading, see Wasberg. G. C. 1958.

whaling grounds about the South Orkneys can stand more than one whaling factory".¹⁰²⁸

The three whale catchers of A/S Tønsberg Hvalfangeri consequently had to compete with the four whale catchers of the Lancing for whales and as a result caught fewer whales.¹⁰²⁹ Berntsen argued that their expedition in the South Orkney Islands had suffered greatly and that there was "*very little possibility now in the after season to expect balanced catch*". He asked for permission to operate with the Orwell I from South Georgia as compensation.¹⁰³⁰ This could have been an attempt to persuade the Colonial Office to take action against their competitors. It fulfilled its intended purpose, and the British authorities granted the company permission to operate with Orwell I in the waters off the Falkland Islands until May 31.¹⁰³¹



*Fig 170. The factory ship Lancing. This ship was the first true pelagic factory ship that could operate independent of land. Whale carcasses could be hauled onboard and processed.*¹⁰³²

¹⁰²⁸ "Letter from the Tonsberg Whaling Company, to the Under Secretary of State, Colonial Office. February 8, 1926". Vol: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams. See also: "Søren Berntsens Private Dagbøger. Sesongen 1925/26". Courtesy of the Private Archive of Karl Jan Skontorp, Norway.

¹⁰²⁹ "Søren Berntsens Private Dagbøger. Sesongen 1925/26". Courtesy of the Private Archive of Karl Jan Skontorp, Norway.

¹⁰³⁰ "Letter from the Tonsberg Whaling Company, to the Under Secretary of State, Colonial Office. February 8, 1926". Vol: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹⁰³¹ "Letter from G. Grindle, to the Tonsberg Whaling Company. February 20, 1926". Vol: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹⁰³² Volume D5-1-4-8. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

The company designed their settlement at Signy Island differently to the station at Husvik Harbour. The station at Signy Island had only one accommodation house for the workers. Unfortunately, there are no written or archaeological sources pertaining to the internal architectural design. The use of a single house indicates that the company had not bothered to create hierarchies among the workers with separate accommodation. However, as local manager, Berntsen probably lived either in a separate room in the barrack or onboard the sailing ship, *Teie*. Since the ship lay anchored in the bay outside the whaling station, this would have allowed Berntsen to overlook work at the station. This hierarchical structure is similar to the ones used at Walrus Bay on Bear Island.

The landscape at Signy Island was more confined and topographically challenging than Husvik Harbour at South Georgia. The harbour was one of the few locations in the South Orkney Islands that was relatively sheltered and had a protected harbour deep enough for larger ships. Moreover, it also had a sheltered piece of land suitable for erecting buildings and installations. Combined with a freshwater supply in the vicinity, these features made the site a strategic choice for establishing the local network. Hans Borge's local knowledge was probably instrumental in selecting the site. The organisation and production of the whaling station at Signy Island were similar to A/S Hektor's whaling station at Deception Island in the South Shetland Islands. This whaling station was constructed between 1911 and 1914 and was operated in conjunction with a floating factory ship, which lay anchored immediately beside the whaling station.¹⁰³³

¹⁰³³ Norsk Hvalfangsttidende. No 4, April 1914, and No 9, September 1914. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord, Norway.



Fig 171. A/S Hektor's whaling station at Deception Island. The station was initially designed to process the whale carcasses that other whaling expeditions had discarded. Later on, the company started hunting themselves and processed whales in conjunction with a factory ship. Although the company also held a concession for the South Orkney Islands, they never made use of it. The company probably maintained both concessions as a backup and to keep competitors away. The photo has been published with the kind approval of the Norwegian Polar Institute.

Although the two stations were organised in a similar way and had the same level of utilisation, their processing capabilities were different. This might be because the companies had different plans and ambitions, but the spatial differences between the two sites also affected the sizes of the stations that could be built there.

Although Tønsberg Hvalfangeri operated with a whaling station and factory ships, their largest investments were in the ships. There are no sources showing that investments were made in the station to increase its production. Although the whaling station was important, it represented only a small percentage of the overall production capacity of the local network. The cooking capacity of Orwell I and II was greater than that of the station. The only shore-based investments made by the whaling company were the explosives storage and the pumping station, which were essential to maintain production.



Fig 172. A/S Tønsberg Hvalfangeri whaling station at Signy Island as it stood when finished. In the centre of the photo is the meat and bone cookery and the flensing platform. The blubber and water barges are visible. To the left immediately above the cooker is the accommodation house. The photo has been published with the kind approval of the estate of David Wynn-Williams.

Strategies and adaptations

Previous attempts to exploit whales in waters around the South Orkney Islands had been modest and were not sustainable, despite abundant whale populations in the area. It is surprising that A/S Tønsberg invested in this area after other whaling companies had failed. What strategies did the company use to avoid the failures of their predecessors? The study of material remains in the field fill the gaps of information in written and printed sources. The company worked out a strategy to create control over their workers and over resources such as freshwater. Their choice of technologies, organisation of production, and their way of dealing with the local environment were also important. These factors were not separate entities, but affected one another. For example, good technological choices were important from an economic point of view since they allowed the station to operate well. They were also socially important as the workers knew how to operate and adapt them to local environmental conditions. Technological installations also symbolised an effective occupation, so served a political

function. In summary, technological choices and the ability to adapt were essential for creating and sustaining a local network.

Technological choices and the ability to adapt technologies and the organisation of production were important, and the local manager had to consider these to secure high production. If the station manager made poor technical and organisational choices or failed to adapt them to local circumstances, then the local network would not be able to produce enough whale oil to generate the necessary profit to maintain the support of investors. Furthermore, if the network builder failed to control its employees, then strikes or unrest could obstruct production and they would lose the support of the global network. Therefore, it was vital to choose technologies that the workers were familiar with, that functioned, and that could be adapted to local conditions. Similarly, if the network builder failed to secure control of sheltered harbours and freshwater supplies, then whale oil could not be produced and the project could not be sustained. Consequently, strategies and the ability to adapt them to local circumstances were decisive in the success or failure of whaling projects in the Antarctic.

Industrial companies planned their settlements to achieve social control at the turn of the 20th century. The modern whaling industry achieved social control in a variety of ways, including the part-based salary system, which linked the workers position and production to his salary. Combined with one-year contracts, this system segregated skilled from un-skilled workers and discouraged strikes as these would directly affect the workers' salaries. Salaries were determined by the individual whaling companies. Although they were similar throughout the industry, there were some differences that may have caused unrest. To avoid this, the Norwegian Whaling Union established a committee to suggest salary agreements for all the whaling companies.¹⁰³⁴ This was an attempt to reduce the financial motives behind strikes that had become more frequent. If all companies offered the same payment, then this motive for striking would be removed. Although the committee's suggestion was a good one, it was never fully adopted since salaries were a tool for attracting the best workers.

¹⁰³⁴ Norsk Hvalfangsttidende. No 3, March 1923. P: 65. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

One could argue, and perhaps interpret the part-based salary system as a democratic way of sharing risks and any eventual success. Establishing a whaling company and equipping an expedition to the Antarctic was not only potentially hazardous due to the remoteness and environmental conditions, it was also a costly affair. Spreading financial risks via shareholders was one way of preventing bankruptcy. Economic risks were also minimised by a salary system that did not commit to a fixed amount, which could backfire if the hunting season was low, production failed, or the market deteriorated. The part-based salary system was also a democratic way of rewarding the workers for their input, and the workers indirectly took their burden of responsibility in shared the financial risk by not demanding high salaries. This system also created control, promoted hard work, and minimised disturbance of the production line.

Other strategies for social control were black listing, leisure activities, and the design of settlement and accommodations (as I have discussed earlier). These strategies were not exclusive to the modern whaling industry but were an integral part of almost all industrial settlements and company towns at the turn of the 20th century. However, the remoteness and seasonal character of the modern whaling industry probably made it more sensitive to disruption than industries in more temperate areas. All the season's supplies (coal, foods, barrels, fuels, etc.) had to be shipped there in advance, meaning the costs were high before production even started. The fleet also had to be insured. Furthermore, the whaling industry operated in remote areas lacking indigenous populations, therefore workers could not be easily replaced.

Social life within the modern whaling industry has not been well studied. Elstad and Hart studied life at the Argentinean whaling station at Grytviken. Both argued that the social life at Grytviken whaling station was good and healthy and that the local manager C.A. Larsen had a genuine interest in the spiritual wellbeing and education of his workers, actively making sure that their life away from home was as comfortable as possible.¹⁰³⁵ Like many other whaling stations at South Georgia, Grytviken experienced a number of strikes before the church and cinema were built. C.A. Larsen's investment in

¹⁰³⁵ Elstad. Å. *Den første norske oljealderen*. 2004. P: 278. In: Norsk Polarhistorie Vol: 3. Editors: Drivenes. E-A, and Jølle. H. D. Hart. I. B. *PESCA: The History of Compañía Argentina de Pesca Sociedad Anónima of Buenos Aires. An Account of the Pioneer Modern Whaling and Sealing Company in the Antarctic*. 2001. P: 182f.

the church may have been an attempt to reinforce social control at the station. The company hired priests and it is likely that these priests proclaimed messages that were aligned with the company's best interests.

Police and a doctor were also hired for the whaling station. Hiring a local police force suggests that the local management believed their workers needed to be kept under control and disciplined if necessary. As mentioned in the previous chapter, historical literature depicts interesting contradictions of workers and social life within the whaling industry. It is important to interpret these descriptions critically and not mimic the same rhetoric in our own study.

These social strategies were most likely used at Husvik Harbour in South Georgia. Similar strategies had to be adapted to the circumstances in the South Orkney Islands. The whaling station at Signy Island was small and only had one accommodation building, which offered limited space for social segregation and hierarchical division. However, the whaling station represented only a small part of the total processing capacity and any strikes at the station would have had little effect on the overall production of the local network. Therefore, investing in strategies to promote social control were not necessary. Once the *Orwell* and *Orwell II* were integrated in the local network, the need for social control increased.

Ships have more limited space than whaling stations. Despite differences, Basberg suggested that the social structure at a whaling station resembled that of a ship in three primary ways. Firstly, both were, as Aubert and Arner described, total institutions.¹⁰³⁶ This meant that the workers were confined to and dependent on their working environment for long periods of time. Secondly, the organisation of work and social life had a maritime character, which was often enhanced by informal rituals. For example, new workers or novices were baptised on the voyage to hunting grounds by a fellow sailor dressed as Neptune. Thirdly, the fleet was an integral part of the whaling station.¹⁰³⁷ Consequently, one could expect that social strategies were the same at

¹⁰³⁶ Aubert, V and Arner, O. *On the social structure of the ship*. 1959. P: 201. In: *Acta Sociologica*, Vol 3. No 4. Pp: 200-219.

¹⁰³⁷ Basberg, B.L. *A ship ashore? Organisation and living conditions at South Georgia whaling stations, 1904-1960*. 2002. P: 17f. In: *International Journal of Maritime History*. Vol: XIX, No 1.

whaling stations and onboard ships. However, there were similarities and differences that should be discussed further.

The station and the ship had formalised structures with defined, non-negotiable positions. Each worker was contracted for a certain position before departure of the expedition. This meant that each worker knew what was expected of him and what his role was, and little adjustment was required.¹⁰³⁸ This allowed the workers to transfer companies easily between seasons and also allowed the employers to replace unwanted workers at relatively short notice. Station workers and seamen were hired on one-year contracts, which probably reduced their motivation to cause disruption in the workplace. Furthermore, the introduction of pelagic whaling technologies and increased production capabilities motivated many whaling companies to introduce two-shift instead of one-shift systems to maximise whale oil production. This new structure encouraged teamwork within the shift units since each was motivated to surpass the production of the other unit.¹⁰³⁹

There were important spatial differences between the whaling station and the factory ship which undoubtedly affected the social strategies. The whaling company could use the surrounding landscape to enhance hierarchical division and create leisure activities at the whaling stations, but there was little room for that onboard the ships. On ships, hierarchical divisions were created by invisible barriers between the captain and his subordinates. Engineers and workers were separated into the bridge, the engine room, and the deck. Even though interaction was necessary for daily operations, the captain, engineers, and workers were largely separated in their own quarters.

An important social ritual in the whaling industry was the baptism of newcomers who crossed the equator for the first time. From 1910 onwards, this ritual involved having one's head shaved, the entire body being dipped into a mixture of soap and fat, and

¹⁰³⁸ "Interview with Laurits Bakkeli in 1979. Whaling interviews performed by Tønsberg Museum". Vol: D5-1-4-7. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹⁰³⁹ Elstad. Å. *Den første norske oljealderen*. 2004. P: 302. In: Norsk Polarhistorie Vol: 3. Editors: Drivenes. E-A, and Jølle.

finally a baptism in a flensing boat filled with seawater.¹⁰⁴⁰ Later on, a fellow whaler dressed as Neptune took the role of master of the ceremony. These rituals were a welcome amusement on the voyage south; they created a good spirit and team feeling. It is interesting that the whaling station managers and factory ship captains chose to isolate themselves and avoid interacting with the workers, despite having worked through the ranks to their current positions. The situation was different onboard whale catchers, where the captain filled the role of gunner and where team work was vital for a successful hunting season. Since the gunner was the key to good catches and economic profit, he was allowed to hire his own crew. Despite the close relationship between the captain and his crew onboard the whale catchers, he remained the undisputed leader.

The quality of the food was another common reason for strikes and social unrest. Food had social, cultural, and emotional value for everyone (management and workers included) since it was one of the few links to home. It was not an easy task to produce tasty food that was cheap and easy to prepare.¹⁰⁴¹ The workers were not responsible for tasks that were a part of everyday life at home, such as cooking food, transport, and taking care of accommodation – these were taken care of by the company. The whaling company also arranged the transfer of money to the workers' families back home. The workers knew that if they misbehaved, their family may suffer financial consequences if the company held back payment. A whaling expedition to the Antarctic was a long-term commitment that lasted months at a time. The absence of a husband and father in the household changed the gender roles in many ways, since the wife filled both roles.¹⁰⁴²

The strategies used by A/S Tønsberg Hvalfangeri in the South Orkney Islands were probably similar to those commonly used in the industry. This was especially true in the latter part of the 1920s when whaling companies operating in the Antarctic introduced a

¹⁰⁴⁰ "Interview with Laurits Bakkeli in 1979. Whaling interviews performed by Tønsberg Museum". Vol: D5-1-4-7. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹⁰⁴¹ Aubert, V and Arner, O. *On the social structure of the ship*. 1959. P: 204. In: *Acta Sociologica*, Vol 3. No 4. Pp: 200-219.

¹⁰⁴² For further reading, please see Garmel, H. *Whalers Wife's in Vestfold, Norway during the Pelagic Period*. 2010. P: 161-168. In: *Whaling & History III*. Publication No 33. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

uniform salary system.¹⁰⁴³ Salaries were often different between companies and hunting grounds and each company had its own rewards when a certain number of catches or production target was surpassed.¹⁰⁴⁴ These rewards created an additional incentive for the gunner, his crew, and the shore workers. In the South Orkney Islands, the part per whale was doubled after 150 whales were caught. Leisure activities were limited in the South Orkney Islands, and workers were restricted to games and listening to radio via the Argentinean Meteorological station at Laurie Island. This was popular since it often broadcasted music from Rio De Janeiro and Montevideo.¹⁰⁴⁵

Mathiesen, Hoel, Avango, and Berg have demonstrated that actors and companies in the Arctic actively used territorial strategies to secure control over certain geographical areas.¹⁰⁴⁶ Non-living actants such as buildings and installations were vital for commuting a message of occupation, ownership, and control. Hacquebord has shown that this strategy was already used in the 17th century.¹⁰⁴⁷ Strategies such as these were common in regions where governance was undetermined or at least uncertain at the turn of the 20th century. It is therefore reasonable to ask whether or not the whaling station at Signy Island, with all its interconnected installations, was used to fulfil geopolitical ambitions. Although the whaling station was designed as a production unit and had an economic function for the whaling company and its shareholders, it was also erected and operated under British approval, therefore was a recognition of British sovereignty in the area. An industrial project in the area reaffirmed British sovereignty because the Colonial Office were able to control the company's activity through legislations and regulatory decisions.

¹⁰⁴³ Norsk Hvalfangsttidende. No 7, July 1928. P: 141. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord, Norway.

¹⁰⁴⁴ Norsk Hvalfangsttidende. No 7, July 1928. P: 141. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord, Norway.

¹⁰⁴⁵ "Søren Berntsen. *Diverse Brev, 1923/24*". The private collection of Karl Jan Skontorp, Norway.

¹⁰⁴⁶ Se Mathinsen. T. *Svalbard in International Politics 1871-1925*. 1954, Hoel. D. *Svalbards Historie 1596-1965*. Vol: 1-3. 1966-67. Avango. D. *Aktanter I Ingenmanslandet*. 2003. Pp: 173- 206. In: Industrins Avtryck: Perspektiv på ett forskningsfält. Editors: Avango. D, and Lundström. B. Of the same author see also: *Sveagruvan: svensk gruvhantering mellan industri, diplomati, och geovetenskap*. 2005, and Berg. R. *Norge på egen hånd 1905-1920*. 1995.

¹⁰⁴⁷ See Hacquebord & Avango 2016. *Industrial heritage sites in Spitsbergen (Svalbard), South Georgia and the Antarctic Peninsula: Sources of historical information*. Polar Science, 10 (2016) 433-440.

Although there are few sources to validate the idea, the low level capital and material investment in the whaling station at Signy Island probably reflects the company's ambitions to control the harbour and resources in Borge Bay.

The investment in a pump house undoubtedly increased the output of the local network since it provided a more or less constant flow of water. The placement of a pipe and hose indicates that its primary function was to support the factory ship. Although it was probably an easier technical solution than water barges, the design of the system caused problems. Water ran down from a cold glacial melt water lake, through a 100-metre metal pipe along the ground to the nearby beach, where it was connected to the factory ship via a 75-metre hose.¹⁰⁴⁸ Low temperatures and strong winds regularly froze the water in the pipe.¹⁰⁴⁹ Berntsen considered this to be a serious problem for the overall function and survival of the local network. In an attempt to adapt the system to the environment, Berntsen and the machine engineer of the Orwell designed a thawing device that included a petrol burner and a heated plate made of corrugated steel, which they placed over the water pipe. On one occasion, they built a huge fire on the beach from whale bones, baleen, and fat to thaw the lower section of the metal pipe.¹⁰⁵⁰ The freezing problem meant that they could not abandon the use of water barges entirely¹⁰⁵¹ and they remained a vital component of the local network. The low temperatures also meant there was little meltwater from the nearby glacier. This was not enough freshwater to meet the demands of constantly processing whales. The failure to adapt to the low temperatures was the reason Berntsen stopped the 1925–1926 season early in April.¹⁰⁵² These installations were built at the same time the factory ship Lancing arrived in the area. The Lancing operated without a concession from the Colonial Office. A/S Tønsberg Hvalfangeri though it important to secure exclusive access and rights to this area, and these new buildings were probably an attempt to enforce these rights.

¹⁰⁴⁸ "Søren Berntsens Private Dagbøger. Sesongen 1923/24". Courtesy of the Private Archive of Karl Jan Skontorp, Norway.

¹⁰⁴⁹ "Søren Berntsens Private Dagbøger. Sesongen 1923/24". Courtesy of the Private Archive of Karl Jan Skontorp, Norway.

¹⁰⁵⁰ "Søren Berntsens Private Dagbøger. Sesongen 1925/26". Courtesy of the Private Archive of Karl Jan Skontorp, Norway.

¹⁰⁵¹ "Søren Berntsens Private Dagbøger. Sesongen 1923/24". Courtesy of the Private Archive of Karl Jan Skontorp, Norway.

¹⁰⁵² "Søren Berntsens Private Dagbøger. Sesongen 1925/26". Courtesy of the Private Archive of Karl Jan Skontorp, Norway.

The company's efforts to adapt to the local environment in the South Orkney Islands were important. The geographical location of the South Orkney Islands immediately north of the Weddell Sea contributed to a high influx of sea ice and icebergs which, combined with strong winds and low temperatures, affected whaling companies that operated in the area and industrial development of the South Orkney Islands as hunting grounds. The whale populations were first exploited here by the Newfoundland Steam Whaling Company in 1907–1908.¹⁰⁵³ This company had a concession for the South Orkney Islands, the South Shetland Islands, and Graham Land. The expedition was based on the factory ship, *Sobraon*, and the two whale catchers, *Lynx* and *Puma*.¹⁰⁵⁴

Even though the company considered the hunting grounds in the South Orkney Islands to be rich and profitable, they moved their operations to the South Shetland Islands further west.¹⁰⁵⁵ According to Dickson, sea ice and icebergs presented severe problems and prevented the company from catching enough whales to generate a profit.¹⁰⁵⁶ A few years later, in the 1911–1912 season, A/S *Laboremus* attempted another whaling expedition using the factory ship *Roald Amundsen*.¹⁰⁵⁷ Much like their predecessor, A/S *Laboremus* was unable to adapt their operations to the local environmental conditions.¹⁰⁵⁸

Although two whaling expeditions had already failed to successfully exploit the area, the South Orkney Islands had a reputation of being “*an area where whales are abundant and where there are no expenditures except for ordinary licence*”.¹⁰⁵⁹ This was most likely what attracted the Norwegian whaling companies A/S *Rethval* and A/S *Thule* to the area

¹⁰⁵³ "Letter from the Governments House in Stanley, to Sir William MacGregor; Governments House in Newfoundland. January 9, 1908". The Falkland Islands Archive. Vol: General Letter Book/ Governor. November 1881-December 1908. Outward.

¹⁰⁵⁴ Dickinson. A. B, and Sanger. C.W. Twentieth-Century shore-whaling in Newfoundland and Labrador. 2005. P: 80.

¹⁰⁵⁵ "The Whaling Industry of the Dependencies of the Falkland Islands. October 5, 1918". The Falkland Islands Archive. Vol: SG & DEP. Whaling- General. Box 27.

¹⁰⁵⁶ Dickinson. A. B, and Sanger. C.W. Twentieth-Century shore-whaling in Newfoundland and Labrador. 2005. P: 80.

¹⁰⁵⁷ Norsk Fiskeritidende. 1915/16. P: 29f. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway. See also: Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2. P: 391. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling, and: Hart. I.B. *Whaling in the Falkland Islands Dependencies 1904-1931: A history of shore and bay-based whaling in the Antarctic*. 2006. P: 146.

¹⁰⁵⁸ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2. P: 387. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

¹⁰⁵⁹ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2. P: 387. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

in 1911–1912. These two companies operated with the two factory ships Falkland and Thule¹⁰⁶⁰ after receiving concessions to exploit whales in the South Orkney Islands and the South Shetland Islands.¹⁰⁶¹ The companies wanted, according to Petter Sørllle, to establish themselves in the South Sandwich Islands, but realised the area was too difficult to operate in.¹⁰⁶²

By 1913, A/S Rethval and A/S Thule realised their factory ship, Falkland, was too large to successfully operate in the South Orkney Islands. They made a deal with the Norwegian whaling company A/S Ørnen. A/S Rethval took over the smaller factory ship Ørn,¹⁰⁶³ while A/S Ørnen took the Falkland.¹⁰⁶⁴ Even though the Ørn was smaller and had less capacity than the Falkland, she was regarded as more suitable and effective for the environmental conditions in the South Orkney Islands.¹⁰⁶⁵ The Falkland's large size made her less manoeuvrable and too expensive to operate in relation to catches and output.

Environmental conditions were extremely severe in the hunting seasons of 1913–1914 and 1914–1915 with reoccurring storms and difficult ice conditions. This, combined with increased operational costs after the outbreak of the First World War, which increased operational costs, meant that no whaling company operated in the South Orkney Islands during this time.

The British authorities knew that environmental conditions in the area were tough. The Governor of the Falkland Islands, Allardyce, reported that the environmental difficulties experienced by whaling companies in the area made it impossible for them to generate

¹⁰⁶⁰ "Letter from H.J. Read on behalf of the Secretary of State, to the Secretary of the Norwegian Chamber of commerce. August 15, 1914". Vol: D5-1-1-4. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹⁰⁶¹ Norsk Fiskeritidende. 1912. P: 25. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

¹⁰⁶² "Diary of Petter Sørllle". Vol: D5-1-5-6.1. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams. See also: Isachsen. G. "Modern Norwegian Whaling in the Antarctic". 1929. P: 393. In: Geographical Review, Vol: 19, No 3. (July 1929).

¹⁰⁶³ This ship was after the transaction re-named Falkland II. See: Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2. P: 396. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

¹⁰⁶⁴ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2. P: 392. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

¹⁰⁶⁵ Norsk Fiskeritidende. 1914. P: 163. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

the same profit as elsewhere in the Antarctic.¹⁰⁶⁶ This may be why he and the magistrate allowed A/S Tønsberg Hvalfangeri to start using a factory ship as well as their whaling station at Signy Island. Although the whaling companies largely anchored their factory ships in the shelter of land, they often had to abandon the safety of land due to the drifting ice, which hindered access to the ship and endangered the entire expedition. Therefore, whaling companies often resolved to operate in the drift ice.¹⁰⁶⁷ Although this reduced vulnerability to the accumulating ice, it restricted their access to freshwater for producing steam and land for storing coal and equipment. As a result, the factory ships could never stray far from the islands.



Fig 173. The wreckage of A/S Corral's factory ship, Tioga. The ship was wrecked in a storm in 1913 and drifted on land with a cargo of 4,700 barrels of whale oil. The photo has been reproduced with the kind permission of D. Laws.

¹⁰⁶⁶ "Letter from the Governor W. L. Allardyce, to Lewis Harcourt, Secretary of State for the Colonies. April 11, 1913". Vol: D5-1-5-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹⁰⁶⁷ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del 1: 1883-1914*. 1967. Vol: 2. P: 396. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

To what extent the local knowledge of sheltered harbours and freshwater supplies were shared between the companies that operated in the area remains unknown. Sørre and Borge were the first to initiate map-making for economic purposes.¹⁰⁶⁸ Together they produced several maps that laid the foundation for the geographical knowledge of the South Orkney Islands. Their contributions are visible in many of today's place names.¹⁰⁶⁹

The whaling station at Signy Island was established because the company wanted to secure access to what was considered to be the best harbour in the archipelago. However, the company was not always able to make full use of the station or its harbour. On numerous occasions, the expedition was obstructed by extensive ice belts and icebergs as it approached the area at the start of the hunting season. The ice stretched for kilometres and made it impossible for the ships to pass through.¹⁰⁷⁰ Consequently, the fleet often had to operate in the ice. The local manager, Berntsen, frequently positioned the factory ship in the drift ice, which minimised the effects of the swell and allowed the expedition to commence with hunting and processing despite not having access to the harbour.¹⁰⁷¹

Technically, this was not devastating because the factory ships had a higher production capacity than the whaling station. However, it caused problems. Firstly, the factory ship could only store a certain amount of freshwater to produce steam. Steam was needed to produce whale oil, generate heat, and propulsion. This meant that the expedition could only operate at full capacity with a water supply. Secondly, the drift ice offered some stability but made flensing more difficult. Thirdly, the company's production capacity was reduced since they were unable to use the whaling station. The local environmental conditions had an enormous impact on the choices of technology and organisation of production.

¹⁰⁶⁸ Roberts. B. *Chronological list of Antarctic Expeditions*. 1958. Vol: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹⁰⁶⁹ Signy Island was for example named after Hans Borge's wife; Signy.

¹⁰⁷⁰ "The Private Diaries of Søren Berntsen 1923/24- 1930/31". The Private Collection of Karl Jan Skontorp. Norway. See also: Norsk Fiskeritidende. 1925/26. P: 21. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

¹⁰⁷¹ "The Private Diaries of Søren Berntsen 1923/24- 1930/31". The Private Collection of Karl Jan Skontorp. Norway. See also: Norsk Fiskeritidende. 1925/26. P: 21. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway.

The whaling station at Signy Island was constructed out of necessity rather than as a primary production unit. This is reflected in the low investment in production machinery, steam production, accommodation, and supplementary installations such as a forge and carpenters. Instead, the island provided shelter and a source of freshwater for the company's factory ships. Without access to and control of Signy Island, the board and shareholders would probably not have invested in *Orwell II* and developed a local network in the area. To make the project sustainable, Berntsen had to create social control and adapt his strategies, technologies, and organisation of production to the local environment of the South Orkney Islands. Dividing production between the whaling station at Signy Island and the floating factory ships *Orwell I* and *II* maximised the capacity and the output of the local network. In addition, investing in refitting and purchasing new factory ships rather than the whaling station increased the overall capacity of the local network. At the same time, it gave the operational flexibility necessary to develop the project and generate enough profit to maintain the shareholders' support.

Choosing and adapting technologies and organising production were stepwise processes. Firstly, the whaling station had to be established. This allowed them to secure control of the area, providing the basis to extend the whaling operation. Construction of the station was briefly halted in the 1920–1921 season after whale oil prices suddenly collapsed. What motivated the decision to invest in the South Orkney Islands? The company probably thought that the project could generate huge economic projects because the local conditions were hazardous and therefore local competition was unlikely in South Georgia. The choice to re-build and convert *Orwell I* into a factory ship as their main platform was an adaptation to the local circumstances. It also shows that the actor network believed the project had the potential to be successful. The actors behind the company were reluctant to invest heavily in developing a whaling station that was hard to access due to environmental factors and that was likely to fail.

The company's choice to primarily invest in floating factories was motivated by several factors. Firstly, it allowed them to start hunting and production early on in the hunting season. It also gave them flexibility to manoeuvre in the ice and operate in the ice floes. It may have also increased the hunting season and subsequently production and profit.

In addition, factory ships could easily be transferred to other areas if local conditions became unfavourable for production.

Results of the whaling operations

Tønsberg Hvalfangeri's first hunting season in 1920–1921 was relatively short, lasting from February until March.¹⁰⁷² They probably started late because their ships arrived late in South Georgia. All the technical equipment destined for Signy Island had to be loaded onto the ships. It also took the company some time to erect the whaling station and make it operational. Because of this, the company caught and processed 61 whales into 409 barrels of whale oil. In addition, they brought an additional 450 tonnes of blubber onboard Teie.

In the following season, the board of the company decided not to send an expedition to the area because whale oil prices fell from £88 per ton in 1920 to £37 per ton in 1921.¹⁰⁷³ The Colonial Office changed the operational conditions in the company's concession for the South Orkney Islands and allowed them to use a floating factory ship. This was probably to give the company an incentive to maintain and develop the local network. The company immediately decided to re-design the Orwell for this purpose. The expedition consisted of the factory ship Orwell and three whale catchers.¹⁰⁷⁴ Berntsen seems to have been in charge of the overall expedition and of coordinating activities. It is not clear what Hansen's role was.¹⁰⁷⁵

There appears to have been some confusion between the whaling company and the Colonial Office as to the new operational conditions. Tønsberg Hvalfangeri believed that they did not have to use the whaling station at Signy Island. But the lease and concession under which they operated stated that they had to base their production on the whaling

¹⁰⁷² "Letter from W. A. Thompson, acting Colonial Secretary, to the Crown Agents for the Colonies. September 1, 1921". The Falkland Islands Archive. Vol: SOUTH GEORGIA, PEOPLE – Whaling (1), 1915-1935. STACK.

¹⁰⁷³ Hart. I. B. Hart. I. B. *Whaling in the Falkland Islands Dependencies 1904-1931: A history of shore and bay-based whaling in the Antarctic*. 2006. P: 316-317.

¹⁰⁷⁴ "Whaling permits issued for the South Orkney Islands". Also in: "Letter from the Crown Agents to the Colonial Secretary in Stanley. October 23, 1923". The Falkland Islands Archive. Vol: DEPENDENCIES – Whaling (3), 1923-1929. STACK.

¹⁰⁷⁵ Wasberg. G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 116. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

station and use the Orwell in addition. The decision to allow the whaling company to use a factory ship in addition to the station was not an act of good will; it fulfilled the company's economic interest and the political motives of the British authorities, as discussed earlier. To ensure that the whaling company fulfilled the constituted agreement, the magistrate, Binnie, allowed the company to proceed with their expedition after having sent along his colleague, Simon, as an observer.¹⁰⁷⁶ There were several motives for this. Firstly, it allowed the whaling company to expand their operations in the area and avoided potential conflict that may have caused the whaling company to abandon the area. Secondly, it fulfilled the British authorities' geo-political interests of creating the impression of effective occupation. It was undoubtedly considered vital to avoid withdrawal of the company and lose their support of British sovereignty.

The board of A/S Tønsberg Hvalfangeri were probably aware of the circumstances surrounding their operations in the South Orkney Islands. They tested the willingness of the Colonial Office to enforce regulations upon the company. They knew that not using the whaling station was in violation of the contract, but they also knew that their activities were a part of the British authorities' strategy to enhance their control over the South Orkney Islands, especially since Argentina had a strong foothold in the archipelago through decades of active presence at Laurie Island. The whaling company believed that the British authorities would not enforce regulations that hindered their whaling operations, since their activities supported British political goals. The company was also aware that the British authorities had limited control in the South Orkney Islands because there was no magistrate to enforce regulatory restrictions.

Binnie's decision to send one of his officers on the company's expedition would therefore have come as a surprise to the company. The whaling company probably did not want to use the whaling station for production. Their primary interest was the harbour, the freshwater, and the storage space on land for explosives. Operating the whaling station was more time consuming than only using the factory ship, and it is possible that this played a role in the company's reluctance to use it.

¹⁰⁷⁶ "Letter from the Magistrate E. Binnie to the Colonial Secretary in Stanley. December 15, 1922". The Falkland Islands Archive. Vol: SOUTH GEORGIA – People – Whaling (1), 1915-1935. STACK.

As I have discussed earlier, having two individual production units allowed Berntsen and Hansen to increase the overall processing capacity of the local network. The Orwell was manoeuvrable and large enough to have several flensing stations alongside its hull. The British authorities were concerned that the Orwell was too small to process all the whales caught by the company's three whale catchers. Tønsberg Hvalfangeri had initially received permission to use the factory ship for one year. To prolong this, the company was ordered to demonstrate that it could increase its utilisation of the whales. After this, the Governor of the Falkland Islands would decide whether or not to grant a continuation.¹⁰⁷⁷

In reaction to the Governor's decision, Chr. Salvesen & Co argued that they had turned down a concession and lease for the South Orkney Islands prior to A/S Tønsberg Hvalfangeri because the area was unfavourable for operating a whaling station. They felt that the British authorities' approval to use a factory ship was in violation of the concession.¹⁰⁷⁸ This was not the first time that Chr. Salvesen & Co objected to the actions of the British authorities. The firm had earlier, according to Tønnesen, tried to convince the Colonial Office to grant them monopoly rights for whaling in South Georgia, arguing that Great Britain benefitted little from the revenues and taxes that were paid by Norwegian and Argentinean companies.¹⁰⁷⁹ Having received little reaction to their complaints, Chr. Salvesen & Co accused the Colonial Office and the Governor of the Falkland Islands of adopting an anti-British policy.¹⁰⁸⁰

For the hunting season of 1924–1925, the board of A/S Tønsberg Hvalfangeri renewed their application for a lease and concession in the South Orkney Islands.¹⁰⁸¹ In the application, they openly stated that their intentions were to base all operations on the

¹⁰⁷⁷ "Letter from the Office administering the Government of the Falkland Islands, to Tonsberg Whaling Company. October 10, 1923". The Falkland Islands Archive. Vol: Despatch Book. January 1923-December 1923. Inward.

¹⁰⁷⁸ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 298. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

¹⁰⁷⁹ Tønnesen. J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 251f. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

¹⁰⁸⁰ Jackson. G. *The British Whaling Trade*. 1978. P: 173.

¹⁰⁸¹ "Letter from H.J. Read, to the Tonsberg Whaling Company. August 27, 1924". The Falkland Island Archives. Vol: 3, Dependencies- Whaling 1923-1929. Fldr: S of S CS [667/23].

re-constructed Orwell,¹⁰⁸² which had the capacity to process all the whales caught by the three whale catchers.¹⁰⁸³ Although this violated the terms of their original licence, Binnie agreed to the company's terms as long as they could fulfil the utilisation demands.¹⁰⁸⁴ On 16 August 1924, Tønsberg Hvalfangeri received permission to operate in the South Orkney Islands basing their industrial operations exclusively on the Orwell I.¹⁰⁸⁵

This meant that for the first time in five years, Berntsen could focus all his attention on developing the local network around the factory ship. He did not have to spend time and resources making whaling station operational or transporting blubber between the two units. Moreover, by 1925 the whaling company was well established in the South Orkney Islands and had established several additional installations that symbolised their effective occupation and fulfilled the political ambitions of the British authorities. That the whaling station at Signy Island became redundant as a production unit was not a serious loss for the whaling company or the British authorities. Furthermore, the investment in the factory ship and the decision to make all operations pelagic probably reflected the expansionistic ambitions of the whaling company. By the 1925–1926 season, the Orwell I had been replaced by the Orwell II and two new daughter companies had been established: Cia Ballenera del Peru Lda and Cia Ballenera del Equador Lda. The former was financially supported by the shareholders of A/S Tønsberg Hvalfangeri while the latter was a private enterprise of Johan Gmeiner, one of the co-founders of A/S Tønsberg Hvalfangeri.¹⁰⁸⁶

The catches and production generated by the local network in the South Orkney Islands increased constantly, and support from the global network grew. The decision to purchase, re-build, and re-name the 10,500 deadweight ton cargo ship Knight Templar

¹⁰⁸² The Orwell had been refitted with a new boiler plant, six open and twenty pressure cookers which increased its processing capacity.

¹⁰⁸³ "Letter from Aktieselskabet Tønsberg Hvalfangeri, to the Under Secretary of State, Colonial Office. July 26, 1924". The Falkland Islands Archive. Vol: 3, Dependencies- Whaling 1923-1929. Fldr: S of S CS [667/23].

¹⁰⁸⁴ "Letter from the Magistrate Edw. B. Binnie, to the Colonial Secretary. August 6, 1924". The Falkland Islands Archive. Vol: 3, Dependencies- Whaling 1923-1929. Fldr: S of S CS [667/23].

¹⁰⁸⁵ "Letter from H. Henniker-Heaton; Colonial Secretary, to the Acting Magistrate on South Georgia. August 16, 1924". Vol: 3, Dependencies- Whaling 1923-1929. Fldr: S of S CS [667/23].

¹⁰⁸⁶ Wasberg. G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 105. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

from the British company Alfred Hold & Co in Liverpool to the factory ship *Orwell II*¹⁰⁸⁷ was an important step. Not only did it allow the company to increase its production, but it also gave them the flexibility to expand their whaling operations away from land and regulated waters.

This investment was an adaptive strategy that allowed the company to expand its industrial activities in the South Orkney Islands and move to uncontrolled and unregulated waters. The company's success in the area had not gone unnoticed by its competitors. The increasing interest in the whaling grounds around the South Orkney Islands offered the British authorities a platform to exercise sovereignty by stationing a whaling officer onboard the *Orwell II*.¹⁰⁸⁸

In the 1925–1926 hunting season, the un-licensed factory ship *Lancing* competed with *A/S Tønsberg Hvalfangeri*'s expedition by whaling in the same area. This caused the board and the local manager considerable annoyance. In early February, after months of complaints, the *Lancing* and its whale catchers left the South Orkney Islands, most likely to escape the constant conflict and competition over whales. Throughout the remainder of the hunting season, *A/S Tønsberg Hvalfangeri* operated without competition. The company increased their catches and production to 459 whales and 27,050 barrels of whale oil. Berntsen decided to close the hunting season in early April.¹⁰⁸⁹ Combined with the whaling station at Husvik Harbour in South Georgia, the company's overall season production was 61,629 barrels of whale oil. This was almost 20,000 barrels less than the previous season (82,915 barrels).¹⁰⁹⁰ Although whaling grounds in South Georgia had maintained their leading role for more than a decade, other areas such as the South Orkney Islands were successively starting to take over.

¹⁰⁸⁷ Wasberg, G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 119. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹⁰⁸⁸ "Whaling Permits issued for the South Orkney Islands". Vol: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹⁰⁸⁹ International Whaling Statistics. 1930.

¹⁰⁹⁰ Norsk Fiskeritidende. No 44. 1925-26. P: 10f. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord, Norway. Also in: Wasberg, G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

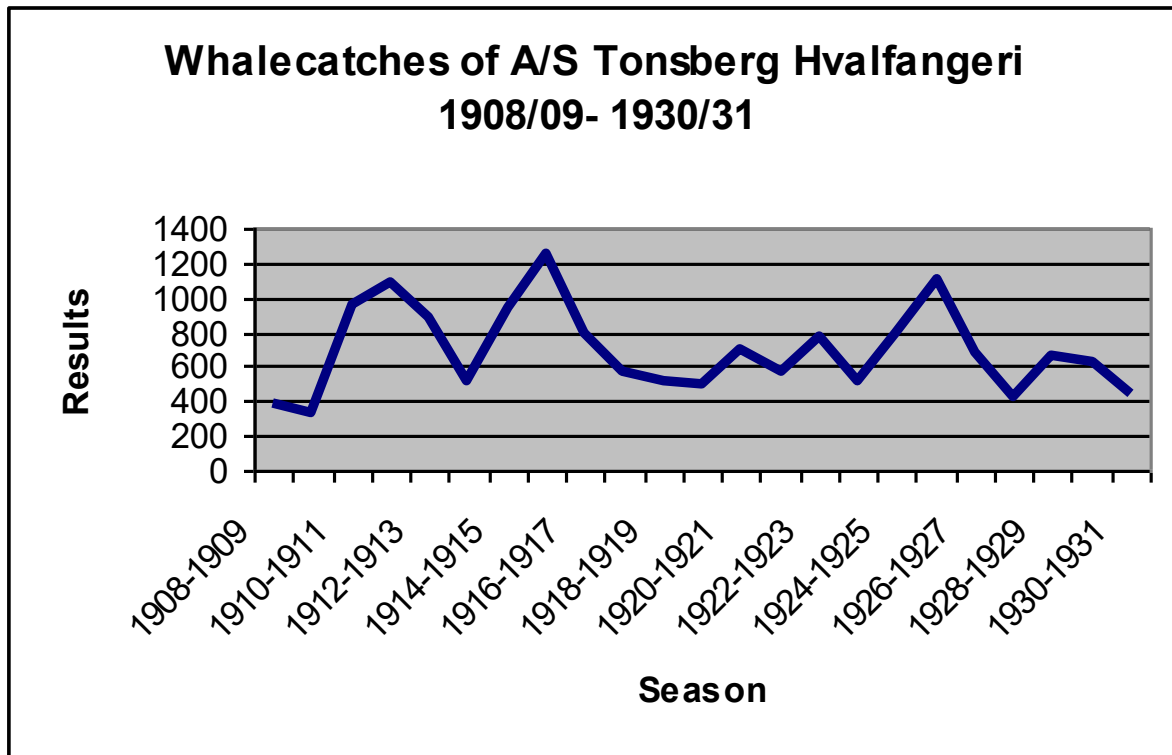


Fig 174. Total catches for A/S Tønsberg Hvalfangeri in 1908– 1931.

Closure of the whaling station

The whaling company maintained their operations in the area for the next five hunting seasons, but they invested and relied increasingly on pelagic operations. The factory ships produced a substantially larger percentage of the local network’s production. In the 1927–1928 season, the local network’s output in the South Orkney Islands exceeded that of Husvik Harbour in South Georgia and all other daughter companies, despite increasing competition in the South Orkney Islands.¹⁰⁹¹ The company abandoned the whaling station at Signy Island in 1925. Now, the local manager and his employees could focus all their attention on Orwell I and II.

¹⁰⁹¹ For the 1926/27 season, the British authorities had granted Chr. Salvesen & Co, and The Southern Whaling a & Sealing Company rights to operation in the area. See: “Whaling Permits issued for the South Orkney Islands”. Ref: D5-1-4-5. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams. Also in: “Letter from Søren Berntsen to his family in Norway. South Orkney Islands. 6/1-1926”. Courtesy of the Private Archive of Karl Jan Skontorp, Norway.

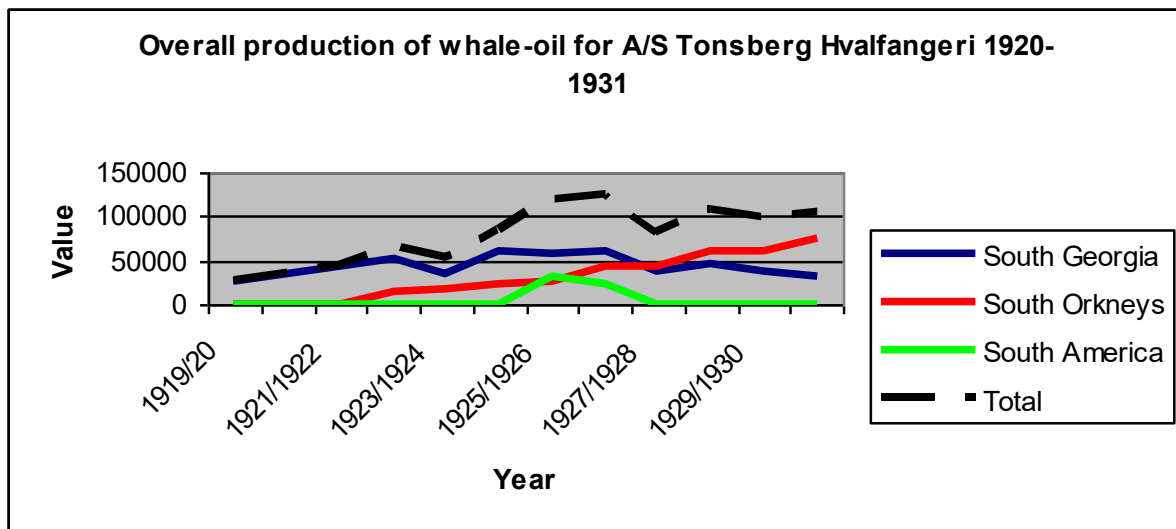


Fig 175. Total production and distribution between hunting grounds for A/S Tønsberg Hvalfangeri.

The company stopped operating the whaling station for several reasons. Even though the whaling station contributed to the overall output of the local network, it represented only a small part of the company's annual production. Moreover, access to the station was frequently blocked by ice in Bruce Harbour/ Borge Bay. Getting the whaling station operational was always time consuming since the machinery was damaged by heavy snowfall throughout the winter. Maintaining the station demanded a constant supply of freshwater, coal, and whales which was a constant battle against sea ice, prevailing wind directions, and extreme temperatures.



Fig 176. The remains of Signy Island whaling station during the 1940s. Today there are few remains of the whaling station, as much of it was removed during the building of the British Antarctic Survey research station. The tilting planes between the flensing and the elevated lemming platform are visible, as are the steam boiler and one of the barges that were used to transport blubber and water. The photo has been published with the kind approval of the estate of David Wynn-Williams.

Ceasing operations at Signy Island was therefore a cost effective decision. Using the factory ship was more favourable as it was the largest of the two production units. Furthermore, closing the station and focusing on pelagic expeditions allowed the company to process whales when there was lots of drift ice. The factory ship could also be moved to other hunting grounds if necessary. The flexibility the ship offered had profound effects on the organisation of the hunting season in the second half of the 1920s, when competition over the resources in the South Orkney Islands increased. In his diary, Berntsen wrote that “*when we arrived at the island there were a few whales, but the floating factories of the South Shetland Islands came along and took anchorage here,*

four of them, and within three days all the whales were gone".¹⁰⁹² Furthermore, sea ice, icebergs, reoccurring storms, and low temperatures caused continuous problems.¹⁰⁹³

From 1928 onwards, Tønsberg Hvalfangeri started using a different strategy, which signalled a transition to more pelagic operations beyond the control of the British authorities. Instead of going to the South Orkney Islands as they had done in the past, the Orwell and its whale catchers tested the hunting grounds north-east of the South Sandwich Islands and west of Bouvetøya, which had been claimed by Norway. Between 1928 and 1931, the company maintained Husvik Harbour and Orwell II, through which they adopted a new strategy. Instead of using Orwell II in one hunting ground for an entire season, Berntsen shifted hunting grounds depending on the time of year. Using this strategy, the company could hunt whales as they migrated, and thereby increase their overall production from 44,700 barrels of whale oil in 1927–1928, to 60,000 in 1928–1929, to 60,303 in 1929–1930, and to 73,837 in 1930–1931.¹⁰⁹⁴ This greatly increased the overall economic profit of the company. After the 1930–1931 season, when the company produced 104,687 barrels of whale oil and 34,371 bags of guano, the company made a profit of Kr1.701,438.¹⁰⁹⁵

The primary motives for moving away from the hunting grounds in the South Orkney Islands and British control were the reduced whale catches due to competition, sea ice, and the desire to continuously increase their output of whale oil. To realise a high output, the company had to adapt their entire organisation of production in the Antarctic and expand their operations to new hunting grounds. This included closing the whaling station at Signy Island and focusing on pelagic operations using the Orwell II and Husvik Harbour.

¹⁰⁹² "Søren Berntsens Private Dagbøger. Sesongen 1927/28". Courtesy of the Private Archive of Karl Jan Skontorp, Norway.

¹⁰⁹³ "Søren Berntsens Private Dagbøger. Sesongen 1927/28". Courtesy of the Private Archive of Karl Jan Skontorp, Norway.

¹⁰⁹⁴ Wasberg. G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 59 & 111f. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹⁰⁹⁵ Wasberg. G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 59 & 111f. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

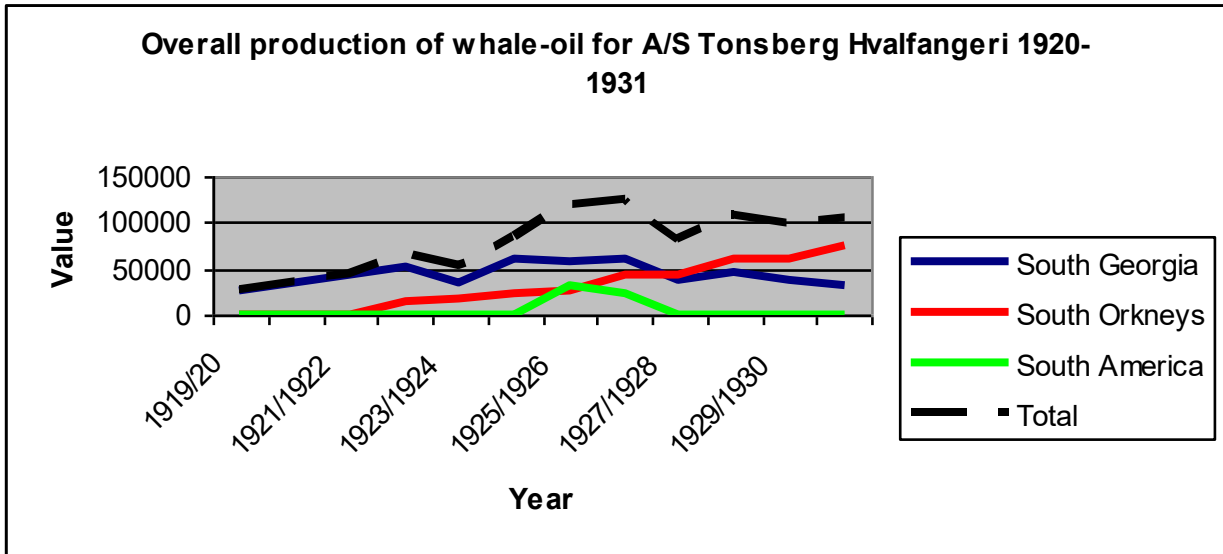


Fig 177. The overall production of A/S Tønsberg Hvalfangeri from 1920 to 1931. From 1928 onwards, the company's South Orkney expeditions dominated the company's overall production. The so-called South Orkney expeditions in the table were not exclusively located here, but operated in a variety of areas in the Antarctic.

The primary motive behind this expansion was, according to Hart, a result of improved market conditions in Europe and the United States of America.¹⁰⁹⁶ Attempts in Europe to establish large buyer's pools (De-No-Fa and Lever Bros) undoubtedly contributed to stabilizing prices since they controlled the market in Europe. In the United States, a similar position was held by Proctor & Gamble, who via their Norwegian agent had established contact with the Norwegian Whaling Union and negotiated the purchase of whale oil shipments from the Antarctic.¹⁰⁹⁷ Even though prices were lower than before 1920, they were stable enough to allow whaling companies to compensate by increasing their catches and production.

As un-licensed pelagic whaling industry developed throughout the latter part of the 1920s. Many reacted to its devastating effects on the industry and called for stricter regulations to prevent further destruction. The Norwegian chargé d'affaires in Paris expressed that if the industry continued to develop in this way, "*we risk the world having a negative opinion of the Norwegian whaling industry. As a result, we may lose valuable*

¹⁰⁹⁶ Hart, I. B. Whaling in the Falkland Islands Dependencies 1904-1931: A history of shore and bay-based whaling in the Antarctic. 2006. P: 181.

¹⁰⁹⁷ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937.* 1969. Vol: 3. P: 189f. In: *Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.*

licences or be forced to transfer our companies to other nations".¹⁰⁹⁸ Tensions were fuelled by the Australian polar scientist Douglas Mawson, who said that "*the slaughter by the Norwegian whaling industry would result in that there were no more whales left in 20 years*". According to Tønnesen, this statement motivated the Imperial government to call for the cancellation of all whaling concessions to foreign companies.¹⁰⁹⁹

The introduction of new regulations

The British authorities introduced new regulations to prevent further whaling operations in an effort to prevent whale populations becoming extinct. Although catches had increased exponentially in the latter part of the 1920s, the British authorities probably also had economic motives for introducing new regulations (loss of concessions and taxations) as well as political motives (loss of third party recognition and activities over which they could exercise sovereignty). The British authorities tried to prevent the development of un-licensed whaling by threatening whaling companies operating within the Falkland Island Dependencies that they would lose their rights to operate their whaling stations if they invested in un-licensed pelagic factory ships.¹¹⁰⁰ All attempts to regulate the development of un-licensed whaling caused several Norwegian whaling companies, together with the Norwegian Whaling Union, to turn to the Norwegian government for support. In 1929, the Norwegian government introduced a new whaling law that banned hunting of certain species and specified the hunting season. It also demanded full utilisation, report-duty of catches, and inspectors onboard the ships.¹¹⁰¹

Efforts to slow down development of the whaling industry caused internal conflicts, also within the industry itself. As a consequence, the Norwegian Whaling Union was dissolved and replaced by The Association of Whaling Companies which, unlike its predecessor, had an international composition. After the silent year in 1931–1932, when

¹⁰⁹⁸ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 263. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

¹⁰⁹⁹ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 263. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

¹¹⁰⁰ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 258f. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

¹¹⁰¹ Norsk hvalfangsttidende, 1929. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway. See also: Elstad, Å. *Den første norske oljealderen*. 2004. P: 294. In: Norsk Polarhistorie. Vol: 3. Rikedommene. Editors: Drivenes, E-A, and Jølle, H. D.

most whaling fleets laid dormant, the need for international regulations became apparent. Clarke suggested in his economic analysis of biological resources that reduced productivity results from two social conditions: competitive exploitation of common property and maximization of private property profits. Whale populations, which had an economic value but a low reproductive capability, might become extinct in either situation.¹¹⁰² In an attempt to avoid this, a voluntary quota system using the blue whale unit (BWU) was introduced as one of the first attempts of the modern whaling industry to self-regulate without the interference of national governments.¹¹⁰³

In spite of these attempts, political intervention (both national and international) became inevitable. The League of Nations commissioned a report in 1931 that estimated the size of the whale population and the whaling industry.¹¹⁰⁴ The British were reluctant to sign the 21 article agreement, therefore it did not come into force until 1935. This may be because the agreement overruled many regulatory decisions made by the British authorities regarding the Falkland Islands Dependencies. Furthermore, the British probably viewed signing the agreement as admitting their failure to control the development of un-licensed pelagic whaling industry in the Antarctic region.

Throughout the 1930s, a number of international agreements and species protection acts were signed, with varying success.¹¹⁰⁵ According to Heazle, these attempts were only partially successful because they were based on economic factors rather than on creating an awareness of conservation measures for the industry.¹¹⁰⁶ The international composition of the whaling industry made it difficult to find a common platform regarding laws and regulations. The escalating conflict between economic, political, and environmental interests when deciding how to regulate the whale populations in international waters led nowhere since agreements were largely being ignored by

¹¹⁰² Clarke. C. W. *The Economics of Overexploitation*. 1973. In: *Science*. Vol: 181, No: 4100. Pp: 630-634.

¹¹⁰³ Elstad. Å. *Den første norske oljealderen*. 2004. P: 294. In: *Norsk Polarhistorie*. Vol: 3. Rikedommene. Editors: Drivenes. E-A, and Jølle. H. D.

¹¹⁰⁴ *Norsk Hvalfangsttidende*. No 2, February 1935. P: 19. Kommendør Chr. Christensens Hvalfangstmuseum. Sandefjord, Norway. See also: *Into the Ice: The History of Norway and the Polar Regions*. 2006. P: 182. Editors: Drivenes. E-A, and Jølle. H.D.

¹¹⁰⁵ Southern Right whales, north-Atlantic and north-Pacific Right whales, Grey whales and Bowhead whales were all given limited protection in the 1930s. Blue- and Humpback whales followed suit in the 1960s, while Fin and Sei whales were given the same status in the 1970s. For further information, please visit the website of the International Whaling Commission.

¹¹⁰⁶ Heazle. M. Scientific uncertainty and the politics of whaling. 2006. P: 37f.

signatory members.¹¹⁰⁷ The International Whaling Commission (IWC) was established in 1946 during a conference in Washington. The primary role of the IWC was “*to establish a system of international regulation for the whale fisheries to ensure proper and effective conservation and development of whale stocks on the basis of the principles embodied in the provisions of the International Agreement for the Regulation of Whaling, signed in London on 8 June 1937, and the protocols to that agreement signed in London on 24 June, 1938, and 26 November, 1945. ; and having decided to conclude a convention to provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry.*”¹¹⁰⁸ In short, the IWC was to function as an administering body for the International Convention for the Regulation of Whaling.

Ever since its formation, the IWC has had the difficult role of ensuring sustainable exploitation of the world’s whale population while preserving the whaling industry. According to Kalland, this was difficult because debates on population estimates and sustainability were in deadlock, with all parties trying to blame the others.¹¹⁰⁹ Banning the exploitation of whales was suggested in the early 1970s and the movement against the whaling industry gained popularity based on ecologic, moral, and ethical arguments. In 1982, a revised management procedure (RMP) was introduced that imposed a temporary ban on commercial whaling from 1986.¹¹¹⁰ Today, the IWC is an unanimity, which, according to Stoett, has challenged the legitimacy of the organisation by nation states. New bodies, such as the North Atlantic Marine Mammal Commission (NAMMCO), have been formed.¹¹¹¹

For A/S Tønsberg Hvalfangeri and the rest of the whaling industry, the period after the 1930–1931 season was characterised by falling whale oil prices and difficult market conditions as it was difficult to attract buyers. Buyers offered low prices and sent their own expeditions to the Antarctic despite the availability of whale oil. Prices for whale oil declined because of the global economic recession, the overproduction of whale oil, and

¹¹⁰⁷ Heazle. M. Scientific uncertainty and the politics of whaling. 2006. P: 38.

¹¹⁰⁸ “International Convention for the Regulation of Whaling, and its Protocol signed in Washington 2 December, 1946”. In: Annual Report of the International Whaling Commission. 2004. P: 139.

¹¹⁰⁹ Kalland. A. *Fiendebilder i hvalfangstdebatten*. 2001. P: 183f. In: Miljøkonflikter; om bruk og vern av naturresurser. Editors: Kalland. A, and Rønnow. T.

¹¹¹⁰ Kalland. A. *Fiendebilder i hvalfangstdebatten*. 2001. P: 185. In: Miljøkonflikter; om bruk og vern av naturresurser. Editors: Kalland. A, and Rønnow. T.

¹¹¹¹ Stoett. P. J. The International Politics of Whaling. 1997. P: 131.

competition from vegetable oils that flooded the market. Whale oil prices first dropped in 1920 and stabilised by 1930; this situation was overcome by increasing catches and production. This was achieved by regional expansion to new Antarctic hunting grounds and the introduction of pelagic factory ships and new processing technologies, which increased the yield of oil per whale. These measures were essential to maintain the support of the global networks and the industry as a whole. The continued development of pelagic whaling fleets from 15 factory ships and 75 whale catchers in 1929–1930 to 41 factory ships and 200 whale catchers in 1930¹¹¹² was a final attempt to overcome declining prices. To coordinate sales, the Norwegian Whaling Union tried to convince the whaling companies to unite against the buyers pool.¹¹¹³ This failed because several companies had signed contracts with Unilever, which was the largest buyer of whale oil.

This economy of scales strategy was the beginning of the end of the industry, since it prevented the companies from responding to changing market conditions. Subsequently, when prices dropped from £28 in 1929 to £21 in 1930, and to £12 in 1931,¹¹¹⁴ many whaling companies lost money. Despite this, huge quantities of unsold whale oil remained in storage. The crisis was politicised when the Norwegian government and the supreme court in England (the House of Lords) acted as negotiators between the producers and Unilever.¹¹¹⁵ In 1931–1932, Unilever did not buy any whale oil and only used the oil produced by their own whaling companies. In the absence of a buyer, many whaling companies had to have a closed season.

The result for A/S Tønsberg Hvalfangeri was devastating. In 1931–1932, their operations were limited to repairing the Orwell fleet at home and the company's fleet at Husvik Harbour in South Georgia.¹¹¹⁶ Having costs and making no profit meant the

¹¹¹² Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 384. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

¹¹¹³ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 390. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

¹¹¹⁴ Hart, I. B. Whaling in the Falkland Islands Dependencies 1904-1931: A history of shore and bay-based whaling in the Antarctic. 2006. P: 316.

¹¹¹⁵ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924. Den Pelagiske Fangst 1924-1937*. 1969. Vol: 3. P: 392f. In: Den Moderne Hvalfangst Historie- Opprinnelse og utvikling.

¹¹¹⁶ Wasberg, G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 62. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

company made a financial loss of Kr1.065,277.¹¹¹⁷ The board of the company ceased all operations at Husvik Harbour and sent most workers home. A/S Tønsberg Hvalfangeri's quota and whale catchers were transferred to Star Whaling Company Ltd, which they had a large investment in. Despite these attempts to minimise losses, the company lost Kr707.049 in 1932–1933.¹¹¹⁸

The company re-opened Husvik Harbour in 1945–1946. Until then, the board of A/S Tønsberg Hvalfangeri maintained the company by tactical investments, selling, pawning, and leasing away their ships. As a result, the company generated profits from 1935–1936 to 1937–1938, which enabled them to pay a 10% dividend to their shareholders.¹¹¹⁹ The general assembly re-opened the whaling station at Husvik Harbour in December 1945, which had been maintained by a small group of workers since its closure in 1932. However, although the market conditions had improved since the early 1930s, the whaling industry had suffered substantially, especially during the Second World War when a large part of the fleet had been lost. The company operated Husvik Harbour with relative success until 1961 when it was closed permanently.¹¹²⁰

Conclusions

The local network at Signy Island developed gradually and was dictated by the lease and concession, company strategies, and market demands. The local network had three different phases. Archival sources have revealed the company structure, production, and salaries, while fieldwork has answered questions related to the organisation of production, the interaction with the local landscape, the design and spatial layout of the station, social strategies, and environmental challenges and adaptations.

¹¹¹⁷ Wasberg. G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 63. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹¹¹⁸ Wasberg. G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 63. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹¹¹⁹ Wasberg. G.C. *Femti år I konkurranse og fremgang: Aktieselskabet Tønsberg Hvalfangeri 1907-1957*. 1958. P: 68. Vol: D5-1-4-2. The Archive of the British Antarctic Surveys. Reproduced by kind permission of the estate of David Wynn-Williams.

¹¹²⁰ Basberg. B. L. *The Shore Whaling Stations at South Georgia: A Study in Antarctic Industrial Archaeology*. 2004. P: 61.

Why wasn't the whaling station a central component of the local network in the South Orkney Islands, and why did pelagic platforms succeed? There are several reasons for this. Firstly, production at the whaling station was time consuming and ineffective. Whales were brought to the whaling station where the blubber layer was stripped off and loaded onto barges to be towed to the Teie for transfer to Husvik Harbour whaling station for processing. When the Orwell I was introduced, blubber was cooked on site. Using two separate production units was ineffective. Even though the Orwell I had a large cooking capacity, it could only cook blubber that was brought from the whaling station. The flensing process became a bottleneck to production, which limited the output of the local network.

When the company started to flense whales alongside Orwell I, production increased. This meant that the whale remains had to be transported from Orwell I to the whaling station. Valuable time was spent on logistics – transporting blubber, meat, and bones between the two platforms.

Environmental factors played an important role. Securing a reliable flow of freshwater was necessary for all aspects of the production line, but finding a reliable source was problematic. The company tried to adapt to this by collecting water from runoff streams and by pumping water from a nearby lake. From December to March, the average temperature was approximately 3.5°C and fell to -12.8°C in July.¹¹²¹ The low temperatures froze the freshwater, making it inaccessible. The local manager constructed a device that could cover the pipe when the water froze. Even during the short summer months, ice drifted into the area from the Weddell Sea. This ice obstructed access to the whaling station and the harbour, and it was a danger to the boats. Despite these challenges, the ice was also useful since it subdued the swell, allowing the company to start hunting when they arrived. The ice could also be melted for freshwater.

The ambitions of A/S Tønsberg Hvalfangeri differed from the demands that were set down in the lease and concession. Low investment in the whaling station suggests that developing the whaling station into the main platform was not the company's primary

¹¹²¹ https://en.wikipedia.org/wiki/South_Orkney_Islands. Retrieved 23.12.2016.

interest. Instead, they used the station to secure control of the harbour, freshwater supply, and hunting grounds. The company operated the station at a low level to comply with the conditions set down in their permit and to secure support from the Colonial Office and magistrate in case of competition over resources in the area. The company benefitted from this support on several occasions. At the same time, the Colonial Office were able to exercise their authority through effective management.

Finally, global events during the 1920s meant that A/S Tønsberg Hvalfangeri (like all other whaling companies in the Antarctic) had to adapt to new circumstances. While the whaling station at Signy Island might have been profitable prior to the price drop in the early 1920s, it was simply too small to deliver the necessary output in the face of lower prices. Only a larger platform with more cooking capacity, such as the Orwell I and II, could be profitable. Therefore, the company invested in developing the pelagic platform, which had enough capacity, was flexible in terms of manoeuvrability, and could be transferred to new hunting grounds if whales became scarce in the South Orkney Islands.

During the 1920s, it was not possible to make the whaling station at Signy Island profitable because there was limited space for erecting new installations, there was limited access to freshwater, and the environmental conditions were too harsh.

9. Comparison of polar whaling stations

Introduction

In this chapter, I compare the four case studies on the modern whaling industry in the Arctic and Antarctic to draw conclusions about the development of the modern whaling industry in the first three decades of the 20th century. Successive developments within the local and global networks will be discussed, with special attention to environmental, technical, social, and geo-political factors.

Local networks

The whaling companies' local networks consisted of human, material, and environmental elements – all of which were used to catch whales, produce whale oil, and build the necessary infrastructures for transporting oil, equipment, and personnel between the polar areas and other parts of the world. With the local networks, the companies generated the economic and geo-political resources that their global networks desired. The whaling stations, with all their technologies, buildings, constructions, and layouts, were the central production facilities, even though some companies included in this thesis operated with additional production units during parts of the season or throughout parts of their operational lifespan, or in conjunction with factory ships. The local networks also included the whale catchers, towing boats and other vessels, the physical landscape, water supply (liquid, snow, and ice), and recreational space.

To maintain the support of the actors in their global networks, the company leaderships had to make sure all the components in their local networks operated and functioned as one unit. Failure to do this could reduce production and profits, threatening the support from the actors in the global networks and endangering the survival of the actor network and operations.

There are large variations in how the companies designed their production lines at the stations. While some were designed to exploit only blubber and discard the rest of the whale, other companies designed their stations (such as Hektor whaling station at Deception Island) to process other parts of the whale into oil. Some stations, like the one

at Signy Island, operated in conjunction with a factory ship. The factors that dictated these differences were licenses and concessions, topographic constraints, changing market demands, access to technologies, and available capital for investments. Being able to adapt the production line, especially as prices dropped and production had to increase, was important. Old and well-tested technologies used more time and energy than the cookers that were introduced later. These old technologies did, however, ensure stability and a constant flow of oil. Nonetheless, without capital to increase production either by new technologies or by adding more cookers, whaling companies had difficulties sustaining their project. The local network, with all its technologies and buildings, was dependent on investments from the global network, which allowed the network builder to create a flexible production line that used raw materials effectively and generated profit.

Oil can be extracted from all parts of a whale carcass and, to meet the demands of their concessions, the whaling companies had to do just that. However, different parts of the whale had to be cooked at different temperatures to extract the oil so the different parts were cooked separately at the stations. Open cookers remained the dominant cooking technology until the turn of the 20th century when pressure cookers became increasingly common. Pressure cookers reduced the cooking time and sped up production, and reduced the consumption of coal and freshwater reserves. Open cookers were often used to melt the blubber since this method improved the quality of the oil. There was little development of processing technologies until 1910, primarily because there were plenty of raw materials. Later, as whales became increasingly depleted, more investments were made in technologies to make processing and hunting more efficient. Hartmann and later Kværner cookers increased the yield of oil per whale. Archaeological fieldwork in the LASHIPA project showed that another type of cooker (with a stirring function) was used in the blubber cookery at Prince Olav Harbour. This cooker was probably used to maximize output and to speed up the cooking process.

The number of cookers and the capacity to operate them at each station was also important. Fieldwork showed that there were approximately 70 cookers at Prince Olav Harbour whaling station. The local network of the whaling station at Signy Island consisted of the shore-based whaling station and the two factory ships Orwell I and

Orwell II factory ships. Together these had 25 and 55 cookers respectively. In the Arctic, the station at Finneset had 13 cookers and the station at Bear Island had six cookers, showing the large difference in number of cookers at whaling stations in the Arctic and Antarctic. The types of cookers and the numbers used depended on the availability of whales and how many whales were caught, which were both higher in the Antarctic compared with the Arctic. In addition, investors saw more potential for whaling in the Antarctic than the Arctic so were more willing to take risks and invest in these stations.

Investing in more cookers did not necessarily increase the cooking capacity. To do this, similar investments were also needed in boilers that supplied energy for the process and in securing a supply of freshwater. Fieldwork showed that the whaling stations at Finneset, Walrus Bay, and Signy Island each had one boiler to produce steam.

Environmental conditions prevented a constant flow of freshwater. Prince Olav Harbour had four large boilers and a generator to produce electricity.¹¹²² Fieldwork revealed that the company constructed two dams to provide a supply of freshwater: one small dam immediately above the station and another one with two separate pipelines to give them flexibility.

The lack of such investments at the other three stations suggests that the companies and their global networks considered these stations to be temporary. Tønsberg Hvalfangeri A/S designed their local network at Signy Island to cope with geo-political circumstances rather than production. The company kept their investments in the station to a minimum, most likely because they considered the area to be too environmentally challenging for whale oil production. They based their production on their factory ship and operated the station at minimum costs to comply with the demands of their concession and lease. This example of adapting production lines to the particular geo-political and environmental situations in the Arctic and Antarctic shows how and why whaling stations in the polar regions differed from stations elsewhere.

The whaling stations also contained buildings and objects that were not part of the production line but were nevertheless indispensable for production. Examples include accommodation, piggeries, the slop chest, storage facilities, and recreational facilities such as cinemas and football fields. These gave employees places to sleep, eat, and relax.

¹¹²² LASHIPA 6 fieldwork report. P: 17. 2009.

The whaling companies also used them to create and maintain social control. This was important because there was no state authority to dissolve strikes and prevent conflict. The magistrates at South Georgia and at Deception Island did not have the resources to prevent strikes or to arrest those who took part in them. The whaling companies had to find their own ways of dealing with the problem. The fear of strikes and social unrest were likely heightened by the rapidly growing and radicalizing labour movement at the time. To avoid costly and potentially dangerous unrest among their labour forces, the whaling companies designed their local networks to satisfy the workers and reduce the likelihood of strikes due to, for example, poor accommodation. Whaling projects in the polar regions had short hunting, production, and shipping seasons. Strikes stopped production and could have a devastating effect on profits.

Whaling companies organised production at their whaling stations to process whales into oil and guano quickly and efficiently. When plenty of whales were caught, whale oil production had to be maximized to make the most of the relatively short hunting season.

Production was organised at the Signy Island whaling station so that whale catchers brought whales to the whaling station where the blubber layer was flensed. Blubber was then loaded (probably manually) onto barges and transported to their factory ship, anchored next to the whaling station, where it was boiled into oil. The remainder of the whale was hauled onto an elevated lemming platform and processed into whale oil. Consequently, the company spent a lot of time hauling and moving blubber between the two production units. There was no flow to the production line and one whale had to be flensed and loaded before the next whale could be processed. The company improved the flow in their production when they added a second factory ship, *Orwell II*, to their production line.

At Prince Olav Harbour, Irvin and Johnson and later Lever Bros/Unilever organised their production line so that whales were attached to a buoy in the bay outside the whaling station. The workers towed the whales from the buoy to the flensing platform where the carcasses were flensed. After the blubber was removed, the carcass was pulled onto the lemming platform and another whale was pulled on the flensing platform. Once the meat was removed on the lemming platform, the whale's skeleton was pulled on a platform on top of the bone cookery to be sawn into pieces and cooked. The residues from all three

cooking stages were collected in carts that ran on a railway system connected to the whaling station. This flow of production was highly efficient.

Production at Finneset whaling station was organised in a similar way as at Prince Olav Harbour. Here, whales were stored on the shoreline before being towed onto the flensing platform. The blubber and meat were removed then the bones were collected in piles next to the station. This meant that time and energy were spent moving raw material that was not utilised. This improved once the guano factory was built since the bones could be transported there from the lemming platform and processed.

At Walrus Bay on Bear Island, the company only utilised the blubber, and whales were attached (similar to Prince Olav Harbour) to a buoy before being transported to the station for processing. Unlike the other whaling stations, the carcasses were dumped into the sea once the blubber had been removed. Not only was the utilisation low, but resources and fuels were spent on tasks that did not contribute to producing oil. Rather than improving the production flow at the station, Ingebrigtsen invested in new hunting ships for his fleet. This meant they could operate in several areas at the same time, which increased catches and allowed production to continue if one hunting unit was lost. Although this increased the flexibility of the whaling operation and made it less vulnerable to environmental challenges, it did not increase the production of whale oil because whale populations were declining.

Out of the four stations, Walrus Bay wasted the most raw materials because they did not use the whole carcass. Yet, Ingebrigtsen often caught more whales and produced more oil than many of his competitors further north in Spitsbergen. This was because he caught a high number of blue and fin whales, which are the largest whale species, therefore give more oil. The stations with the most efficient utilisation and production were Prince Olav Harbour and Finneset whaling station, even though both had problems making their guano factories operational.

During the early season in Spitsbergen and Bear Island, several whaling companies, including A/S Spitsbergen and later A/S Nimrod, operated and flensed along the ice. They included the ice in their local network by flensing the whales on it and by using it as a source of freshwater to produce steam. Many companies adapted to the environmental conditions during the early season in Svalbard by equipping boats with

cookers and producing whale oil while stuck in the ice rather than wasting time trying to break through the ice to reach the harbour or whaling station.

The different adaptations made by the companies that operated Finneset whaling station and Ingebrigtsen are noteworthy. Apart from equipping a boat with a few cookers so that whales could be processed alongside the ice in the early part of the season, they changed little.

The whaling companies also adapted their whaling to cope with the environmental and geographical circumstances in the polar areas. The most important adaptation was to expand their range and capacity. The whaling fleets were constantly adapted. The ships were often designed for operation in a specific area, especially the whale catchers, as Basberg has shown.¹¹²³ Companies operating the first whale catchers in the polar regions often copied ship building technologies from the sealing industry, which designed ships for operating in ice floes. In the 1920s, shipbuilding firms like Kværner and Framnæs started to design the bows of the whale catchers higher to protect the gunner and the crew from large waves. This was probably suggested by whaling companies that operated in the polar regions and needed better protection; these companies were operating further and further from land, in more environmentally challenging areas. To increase the whale catcher's operational range, speed, and capacity to haul more whales, the companies invested in new and more powerful steam engines. There was no need for such investments before 1910, but as competition grew and the catchers had to go further from the station to catch whales, it became necessary to invest in new and powerful engines. Some, like the Southern Whaling & Sealing Company, equipped their new whale catchers with diesel engines¹¹²⁴ because it was easier to transport diesel than coal. According to Basberg, the primary reason for this change was the transition to new hunting grounds and ice and pelagic whaling.¹¹²⁵ One must remember, however, that this development was gradual. As ship building and engine technologies progressed, the whaling industry adopted these changes quickly to continuously increase catches and the output of whale oil. These investments and modifications were made because there were: 1) enough resources (whales), 2) a

¹¹²³ See Basberg. B.L. Innovasjonsteori, patenter og teknologisk utvikling i norsk hvalfangst ca. 1860-1968. P: 109. Masters dissertation originally printed in 1980. 2015

¹¹²⁴ Please see chapter 6.

¹¹²⁵ Basberg. B.L. Innovasjonsteori, patenter og teknologisk utvikling i norsk hvalfangst ca. 1860-1968. P: 109. Masters dissertation originally printed in 1980. 2015.

market demand for the whale oil produced, and 3) local environmental contexts. These factors created the economic incentive to invest in technologies to increase production. If whale populations in the Arctic were similar as in the Antarctic, similar investments would probably have been made there too.

When the whaling industry moved from northern Norway to Spitsbergen and Bear Island, they mainly used the technologies and ships that were used in northern Norway. The catchers were not upgraded because: 1) there was little incentive to invest because the market for whale oil was limited, 2) the primary hunting grounds were close to the coast, and 3) the move from northern Norway happened quickly after the 1904 whaling ban was introduced. The whale catching boats used in the Antarctic were, especially after 1910, new and were built with a different design and engines. This allowed the companies to expand their hunting grounds and increase catches. In the Arctic, the companies refrained from investing in new whale catchers and used tugboats to extend the hunting grounds.

The early floating factories must not be confused with the pelagic factory ships that became more common in the late 1920s. The early factory ships were semi-pelagic and were usually sailing ships equipped with a few cookers.¹¹²⁶ Even though whaling companies had used them in northern Norway before the 1904 ban, they were primarily designed and intended to be used in peripheral hunting grounds where there was little or no infrastructure, such as in the polar areas.

Some of the earliest factory ships used cookers that were square iron boxes. Blubber was manually transported to these simple cookers from a cutting machine. In the iron boxes, blubber was melted with steam.¹¹²⁷ These early factory ships were relatively small with limited cooking and storage capacity. Therefore, they often used less of the whale carcass than whaling stations with more space did. Unlike ships that were built later on, they did not have internal tanks, so whale oil was stored in wooden barrels. The

¹¹²⁶ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924*. 1969. Vol: 3. P: 38. In: Den Moderne Hvalfangst Historie.

¹¹²⁷ Norsk Hvalfangsttidende No 4, 1917. Kommendør Chr. Christensens Hvalfangstmuseum, Sandefjord, Norway.

advantage of using this type of production platform compared with shore-based whaling stations was that it allowed the company to move their operations from area to area depending on the local conditions. Flensing and cooking had to be done in sheltered waters so a deep and sheltered harbour with access to land and plenty of freshwater was essential. During the first two decades of the 20th century only a few ships were designed as floating factories; one of the first was Chr. Christensen's *Admiralen* in 1905.

Factory ships in the Arctic and Antarctic differed in design, capacity, and size. Factory ships in the Arctic were converted sailing ships with limited capacity and storage. In the Antarctic, factory ships were purpose built ships with steel hulls and steam engines that were used for propulsion and to process whales. Until factory ships became pelagic, these were the primary differences in factory ships between the Arctic and Antarctic. Flensing was commonly done alongside the hull in both areas, and this needed to change before factory ships could become fully pelagic. But why was it important to become pelagic? There were several reasons. Firstly, being independent of land meant that the companies could operate without paying fees or taxes. Secondly, there were no restrictions on pelagic whaling operations. Thirdly, companies were free to choose their hunting grounds for pelagic expeditions, depending on the season. This maximized catches as they could move on if local conditions were not profitable. Whale companies introduced factory ships to cope with environmental challenges in the polar areas and to deal with the political circumstances. In short, there were many reasons for whaling companies to invest in technologies that enabled pelagic whaling.

Hauling whales on board for processing was not a new concept. Attempts had been made by the Norwegian whaler Ingebrigtsen at Bear Island in 1906 to increase production of the local network.¹¹²⁸ Ingebrigtsen tried it again in Africa in 1908.¹¹²⁹ Gjertsen, Davidsen, and many others also tried to establish pelagic whaling operations.¹¹³⁰ Although the idea of processing whales onboard in open waters had existed for a long time, there had been no real incentive to do so since there were plenty of whales available in the waters around the whaling stations. Despite this, some whaling companies, such as A/S Quilimane of Norway, already invested in new technologies like

¹¹²⁸ *Dagbog D/S Skytten. 1906.* National Library of Norway. Oslo. MS Fol 3905.

¹¹²⁹ The private archive of the Hay-Ingebrigtsen family, Norway.

¹¹³⁰ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924.* 1969. Vol: 3. P: 47f. In: Den Moderne Hvalfangst Historie.

the Sommermeyers rotating cooker, a guano plant, and evaporators that produced freshwater in 1911–1912. These investments gave the company increased flexibility.¹¹³¹ The South African/British whaling company the Southern Whaling & Sealing Company made similar investments when they bought the factory ship *Restitution*.¹¹³²

Even though the output of the whaling industry reached new heights in the Antarctic hunting grounds, pelagic technologies did not progress until Petter Sørre introduced his innovative ship design in the 1920s. Why were pelagic technologies not developed prior to 1920 if there were advantages to it? I see three main reasons for this. Firstly, the upgraded whale catching fleets that operated from the whaling stations brought in plenty of whales for processing until the early 1920s. There was no need to process whales in the open sea while there were plenty of whales close to the whaling stations. Secondly, before the First World War, whaling companies had big fleets that worked together with whaling stations and many of these ships were lost during the war.¹¹³³ Thirdly, the sudden drop in whale oil prices after 1920–1921 meant that whaling companies had to exploit new hunting grounds if they wanted to generate profits in a situation with low but stable prices. A production of scale without state imposed restrictions was needed. The only way to achieve this was to move away from regulated waters into the ice and open sea. This required a platform that was large enough to support a number of whale catchers and could carry enough coal to sustain production for longer periods.

By the mid-1920s, vaporisation technologies had become more effective. From this perspective, the invention of pelagic technologies was the result of a multitude of factors. Although some actors might have wanted these developments to occur earlier, there were no incentives. Prices were high enough to generate profits despite declining catches. When prices dropped, the whaling industry was forced to adapt to the situation by: 1) seeking new hunting grounds, 2) investing in larger and more powerful catchers, 3) investing in larger factory ships, 4) investing in processing technologies to improve

¹¹³¹ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924*. 1969. Vol: 3. P: 62. In: Den Moderne Hvalfangst Historie.

¹¹³² See chapter 5.

¹¹³³ Norsk Fiskeritidende. 1919-20. P: 16. Kommendør Chr. Christensen's Hvalfangstmuseum. Sandefjord, Norway.

utilisation of the raw material, and 5) ceasing operations in areas that were declining or no longer profitable.

Sørre's design opened up new hunting grounds within the Antarctic and allowed expansion of the industry to uncontrolled and unrestricted international waters. These new pelagic factory ships were large enough to supply a whole fleet of whale catchers with coal and supplies, to accommodate many workers, and to store large quantities of whale oil in its internal tanks. Building and fitting these ships were huge investments, and the ships had to deliver huge outputs. The development of pelagic whaling technologies was a progressive process. It started with converted wooden sailing ships fitted with a few cookers and wooden barrels for storing whale oil. These progressed to larger ships with steel hulls and internal tanks, and eventually the enormous pelagic factory ships of the 1920s with stern slipways and whale claws with onboard flensing and lemming planes, as well as guano plants.¹¹³⁴

As I mentioned earlier, the whaling companies designed their local networks to cope with and transform the local environments in the polar regions where they operated. The climate at Spitsbergen and Bear Island is influenced by the Gulf stream on the west coast and by the polar current on the east coast. The Gulf stream makes the climate more hospitable compared with other areas in the Arctic. The climate in the Subantarctic is more complex, with several ocean currents influencing the climate in different ways. Compared with Antarctica, the climate in South Georgia is relatively temperate. Mixing and upwelling of waters close to the Antarctic Convergence create conditions that promote the productivity of krill, which attracts whales. This is why whaling companies decided to place whaling stations there. South Georgia has frequent violent storms and katabatic winds. The climate in the South Orkney Islands is dictated by the proximity of the Larsen and Ronne-Filchner ice shelves in Western Antarctica and by the currents in the surrounding Antarctic Ocean. Strong winds, low temperatures, sea ice, and icebergs that drift in from the Weddell Sea are common. These conditions influenced whaling activities in the area.

Finding access to freshwater and the presence of sea ice were challenges the modern whaling industry had to adapt to in the Arctic and Antarctic. How did the whaling

¹¹³⁴ Tønnesen, J.N. *Verdensfangsten 1883-1924. Del II: 1914-1924*. 1969. Vol: 3. P: 60. In: Den Moderne Hvalfangst Historie.

industry adapt and why did they adapt the way they did? And were adaptation strategies different between the Arctic and Antarctic?

Securing access to freshwater was one of the main challenges the whaling companies had to deal with in the Arctic and Antarctic. Freshwater was needed to produce steam for propulsion and production, but was scarce since precipitation in the polar areas was low; most freshwater was locked up in glaciers, sea ice, and snowfields. Failure to solve this problem would reduce production, resulting in less profit and risking the loss of support from shareholders. According to Rossnes, the early semi-pelagic factory ships required approximately 40 tons of freshwater per day to maintain production.¹¹³⁵

The whaling companies in the Arctic and Antarctic worked out similar strategies to access freshwater. They invested in infrastructures to catch water from the area surrounding their stations and hunting grounds, such as dams, pipes, pumping stations, and water barges. These were time-consuming, inefficient solutions. Some companies collected runoff water from the melting snow, while others collected ice that they melted.



Fig 178 and 179. Collecting meltwater was one way of securing enough freshwater to maintain production. By selecting snow layers that were exposed to the sun, and cutting drainage ditches, the whalers could collect water in purpose built barges. The photo has been published with the kind approval of Glenn McIntosh's private collection.

¹¹³⁵ Rossnes, G. *Hvalfangsten og kulturminner Hektor Hvalfangststasjon*. Særtrykk av Norsk Sjøfartsmuseum Årsberetning 1996. P: 142. 1997.

The archaeological fieldwork we conducted in the LASHIPA project shows that whaling companies in Spitsbergen and Bear Island established their stations at sites they thought would provide the best conditions for profitable production. These sites had: 1) access to freshwater, 2) good harbour conditions, and 3) dry land suitable for building factories, houses, and warehouses for storing whale oil. The ideal locations in Spitsbergen were as close as possible to the west coast of the archipelago where the best hunting grounds were. Whaling companies also claimed freshwater resources and harbours located away from their main stations.

The environmental challenges of whaling at Spitsbergen were increased by its legal status as a no man's land since claims to sites could be challenged by any competitor. In the Antarctic, on the other hand, concessions awarded by the British authorities gave exclusive rights to freshwater resources.¹¹³⁶

The archaeological fieldwork and archival research in this thesis shows that the local climate influenced the strategies that whaling companies used to find a supply of freshwater. In Spitsbergen and Bear Island, low temperatures were only a problem during the start of the season, when ice belts were extensive and runoff rivers froze. During the latter part of the season, securing enough water to maintain high production became a major challenge. At Finneset whaling station, the companies dealt with this by building a dam and collecting water from a glacial runoff river at Sandefjord Point further south. They eventually claimed this site to prevent competitors in the mining industry from taking it over. At Signy Island in South Orkney, access to a deep and sheltered harbour seems to have been the company's primary motive for their choice of location, which reflected the company's plan to conduct semi-pelagic and later pelagic whaling expeditions rather than running the shore-based station, which was less flexible.

Sea ice in the Arctic and Antarctic was both an obstacle and a resource. Sea ice often prevented the companies from accessing their harbours and stations, forcing them to develop new ways of organising their activities. But the sea ice was stable enough for whale carcasses to be processed on them, so the floating factories were anchored along

¹¹³⁶ To what extent this was the case during the early phase of whaling in South Georgia is uncertain. There appear to have been local competition over resources in spite of this regime, as the conflict between Irvin and Johnson and Cia Argentina de Pesca over Jason Harbour show, as well as with Chr. Salvesen of Leith over rights to Prince Olav Harbour show.

the edge of the sea ice during the early season and the crew began producing whale oil, albeit slowly. Many companies, such as A/S Spitsbergen, redesigned their boats so they could process whales alongside the fjord ice while waiting for it to break up and melt. In the Antarctic, the companies do not appear to have tried that method.

In the Antarctic, glaciers and shelf ice produced large icebergs that were potentially hazardous to the whaling fleets. Once the whaling industry started operating in more icy waters, the general trend was to invest in larger and more powerful boats. Whaling companies had to monitor the ice continuously, especially those that operated semi-pelagic factory ships that were stationed in harbours. When there was a lot of sea ice and strong winds, the ice could easily trap the boats and stop all production.

The archaeological surveys within the framework of this project in the Antarctic Peninsula revealed many anchor points that allowed the whaling companies to quickly relocate to new hunting areas and re-start production. This was how they adapted to the ice conditions. They also placed replacement barrels, flensing boats, and barges at different locations in case they were destroyed by the ice. In this way, the companies incorporated large parts of the landscapes in their local networks. The whaling companies seem to have used the local environment in more innovative ways in the Antarctic than the Arctic, and large parts of the Antarctic Peninsula can be viewed as an industrial landscape.

Global networks

The political context differed between the Arctic (Spitsbergen and Bear Island) and Antarctic (South Georgia, South Orkney and adjacent areas in the Antarctic Peninsula). This influenced the way the companies built their global networks in these areas. While Spitsbergen and Bear Island were internationally recognized as no man's land, Britain had claimed sovereignty over the South Atlantic archipelagos. Although the legal status of the South Orkney Islands and the South Shetland Islands were uncertain, the whaling companies never challenged the British claims to them. By applying to the British authorities for licences and leases to operate there, the industry – whether they liked it or not – recognized British authority in the region. How did the different legal statuses in

these areas affect the whaling companies that operated there? How did the companies adapt, and how did the actions of the companies affect the geo-political situation there?

The no man's land status in Spitsbergen and Bear Island meant that no state could introduce concessions or restrictions on whaling or mining activities there. This had several consequences for the companies that operated there. Firstly, the companies were free to catch whales without restrictions and regulations. They could follow their characteristic pattern of rapid overexploitation and low utilisation and high waste of the raw material, which decimated the whale populations. Secondly, the absence of a state power meant that there was no authority to manage territorial disputes and strikes. Therefore, the whaling companies used several strategies to maintain social control and avoid conflicts.

The geo-political situation in the Subantarctic and Antarctic was more complex, with overlapping claims and perceived possessions. For this reason, in the opening years of the 20th century, the whaling companies were uncertain about the legal status of South Georgia, the South Orkney Islands, and other areas in the Subantarctic and Antarctic. Great Britain affirmed its claims through the Letters Patent of 1908 and the whaling companies did not challenge the claims.

The fact that Great Britain controlled a large part of the Antarctic in which the whaling industry operated meant that they could impose step-wise measures to avoid overexploitation of the whale populations. Restricting exploitation of the whale populations was a political act that sustained the whaling industry rather than preserving the whale populations. Managing industrial exploitation became a political act that was effective since it involved third party recognition of sovereignty, which was important. In addition, whaling companies applied for licences and concessions and paid taxes, which further supported and legitimized the British claims. Managing the whaling industry was therefore an important tool for Great Britain and the colonial office to maintain their territorial claims. However, whaling companies in Spitsbergen and Bear Island adopted similar strategies, despite the no man's land status.

Whether a whaling company was a joint stock company or a private enterprise affected the availability of capital and other important resources for the development and success of their whaling operations. Two joint stock companies owned and operated the

Finneset whaling station (Firma Severin Dahl and later Christen Nielsen & Co), while an entirely private enterprise owned Walrus Bay. Prince Olav Harbour was privately owned at first by the Irvin and Johnson group, and was later owned by a shared stock company (Lever Bros/Unilever). Signy Island whaling station was owned by a shared stock company (Tønsberg Hvalfangeri A/S) throughout its operational lifespan.

Shared stock companies were not a new phenomenon within the whaling industry. In the Netherlands, shared stock whaling companies existed in the second half of the 17th century. In the late 1800s, whaling entrepreneurs in northern Norway secured funding for their whaling projects by enrolling people in their home towns to invest in their planned projects, and thereby share both risks and potential profits. Irvin and Johnson, on the other hand, deliberately kept their whaling operations private, with only a limited number of investors, probably to make larger profits like other whaling companies did. Limiting the number of investors in their whaling projects increased their financial risk but also increased their potential to gain wealth. Ingebrigtsen probably had similar motives. Keeping their whaling projects private also allowed the company leaders to make fast decisions and be more flexible. On the other hand, every decision carried potential risks, which could backfire if enough capital was not available or if they failed to maintain support from the banks.

In a shared stock company, the risks and profits were shared with a large number of investors. These companies could get additional funding for a new whaling station or to upgrade its fleet by new stock emissions, by re-investing profits, or by asking the shareholders for more funding. The drawback was that the companies had to continuously convince shareholders to keep supporting their whaling projects. Before starting a new whaling operation, they had to write reports and prepare statements that described the future possibilities and likely success of the proposed project. These reports were often written by actors whose statements would be trusted. Once the whaling operations were up and running, the company leaders had to secure the continued support of their shareholders by generating profits that could pay dividends.

Based on our investigations, it is inconclusive whether the structure of the companies' global networks affected the outcome of their whaling projects. Both Irvin and Johnson and Ingebrigtsen had the necessary capital to make large investments and to develop and adapt their local networks, and they did not have to share profits with shareholders.

On the other hand, they took larger risks than the shared stock companies, which might have endangered their projects.

The whaling companies also enrolled political actors, including state representatives such as foreign ministries, to their global networks. The Norwegian Foreign Ministry wanted the whaling companies to support their effort to make Spitsbergen a part of Norway. However, the whaling companies probably saw little to gain from Norwegian sovereignty there following the Norwegian government's ban on whaling in Norway in 1904. Two whaling companies did claim territories on Spitsbergen from 1908, but they probably did this for their own interests and not those of the Norwegian Foreign Ministry. They probably claimed these territories in response to increasing competition from the coal mining industry over natural harbours and fresh water supplies.

The Norwegian Foreign Ministry most likely used the whaling companies' claims in Spitsbergen as part of their campaign for sovereignty in Spitsbergen. They added these claims to an already extensive list of economic activities carried out by Norwegian citizens on the archipelago. The Norwegian government used these economic activities to argue that Norway should influence the future of Spitsbergen. However, the geopolitical role of the modern whaling industry was small compared with the mining industry and scientific research. There were not many whaling companies, and the companies did not have many employees. They carried out most of their business at sea, and ended their activities before the Spitsbergen Treaty was settled in 1920, which granted Norway sovereignty over the archipelago.

In the South Atlantic, the whaling companies had more reasons to comply with the demands of the British authorities than to challenge them. When granted a concession, the whaling companies had exclusive rights to hunting grounds and a natural harbour for their whaling stations. Similarly, if their whaling operations suffered because of strikes, the companies could ask the British authorities for support. This was done at South Georgia in 1918, when the whaling companies asked the British authorities to send a warship to prevent an impending strike. Preventing strikes was also in the interest of the British authorities as it allowed them to exercise authority and sovereignty over South Georgia.

The shift from shore-based to pelagic whaling also changed the involvement of state actors in the global networks of the whaling companies. The state actors no longer had to deal with British authorities in the Antarctic when operations moved beyond British control into unregulated waters. However, they still had a geo-politic role in the Antarctic. The search for new hunting grounds led to the discovery of new islands. During the Norvegia expeditions, state actors gave the whaling entrepreneur Lars Christensen (from Sandefjord) the authority to claim these new found lands on behalf of Norway. In other words, states with competing interests used the modern whaling industry to strengthen their influence in the Antarctic – either by exercising sovereignty through concessions or by staking claims.

After the whaling industry abandoned their shore-based whaling stations, the British authorities continued to use them to exercise sovereignty in the region. They repurposed whaling stations for science and military activities and later defined them as cultural heritage sites that needed proper management. Although one may argue these were good intentions, the primary motive was probably to exercise sovereignty and control. Furthermore, choosing which and whose history to preserve were geo-political decisions.

States with sovereign interests in the Antarctic benefitted from supporting the whaling industry. For example, while searching for new hunting grounds, some pelagic whaling firms claimed sovereignty of the lands they discovered on behalf of their government. State actors were interested in supporting those industries that could fulfil such a role.

In addition to this, several whaling companies contributed to scientific research by collecting information on where they caught whales, their species and sex, and by measuring the whales before processing them. By gathering this knowledge and having the infrastructure in place to support scientific research, the whaling companies could count on the support of scientists and their state sponsors.

By comparing the construction of whaling projects in the Arctic and Antarctic and how different actors built their global and local networks, I have gained insight into how different actors attracted support for their projects. I have also compared the development of whaling in the Arctic and Antarctic and have shown how the actors adapted their whaling stations and operations to the geography, environment, political

status, and changing market conditions. These findings have contributed to our understanding and knowledge of the history of modern whaling, and indeed to the industrial history of the polar regions as a whole, and have shown that it is highly important to consider more than economic interest and markets when explaining the development, evolution, and the eventual closure of industrial projects in the polar regions.

10. Conclusions

In the introduction of this thesis, I argued that it is necessary to consider more factors than economic interests and markets to understand and explain the development of the modern whaling industry in the Arctic and Antarctic during the first decades of the 20th century. These include the political situation and the ability of the industry to deal with adverse environmental and geographical conditions. Moreover, I argued that it is necessary to consider how the industry adapted to these factors when designing their production networks in the polar areas.

The main objective of this thesis is to analyse and explain the rise and fall of modern station-based whaling in the Arctic and Antarctic in the opening decades of the 20th century in a multi-disciplinary way.

The research questions are:

- What were the societal contexts and structures that provided opportunities that motivated actors in the whaling industry to establish whaling operations in the Arctic and Antarctic?
- Who were the actors behind the construction of the actor networks, and how did they use the political, environmental, and geographical factors to build their projects?
- Why and how did the actors adapt their whaling operations to the political, environmental, and geographical conditions in the polar regions?

The theoretical framework of actor network theory (ANT) and methodological approaches from industrial archaeology and industrial heritage research have been important in fulfilling the objectives of this thesis. The industrial archaeological method of combining material remains, local environmental data, and written records have created a more complete understanding of the historical changes studied in this thesis. Combining these methods made it possible to gain a deeper understanding of local conditions. Historical accuracy was also improved because I could compare different sources with one another.

This approach also revealed how the whaling companies designed their global and local networks. By exploring written sources from a wide variety of archives, I could map how the whaling entrepreneurs interacted with investors and authorities (global network) to realize their whaling projects. I combined written and archaeological sources to explore how whaling operations were designed to succeed in the political and environmental circumstances of the Arctic and Antarctic. This approach uncovered the important choices that were made regarding technology and settlements, as well as the consequences of these choices.

This theoretical-methodological approach has allowed me to explain the complex web of economic and political factors that drove and sustained the industry, and eventually led to the decline of shore-based whaling in the late 1920s. I have also shown how the companies that operated the four sites adapted and shaped their local networks to the environmental and political circumstances in the polar areas, thereby ensuring the success of their whaling operations and the support of their owners and shareholders.

The main conclusions are:

- 1) The modern whaling industry had more reasons to move its operations to the polar regions at the turn of the 20th century than previously assumed.

There is no doubt that economic factors were the most important motivations for establishing whaling stations in the polar regions. When the first whaling companies established their stations there, whale oil held a relatively small part of the global market for oils and fats. When hydrogenation technology was introduced, the market for cheap whale oil grew. Before the companies closed their stations, whale oil had become a major product on the global market, largely driven by the expanding needs of the margarine and fat industry. The actor networks I have studied were developed and shaped during a time of accelerating industrialization. Increasing globalisation and nationalism increased the need for oils and other raw materials to meet the demands of the new industrialized economy and new social groups.

However, there were also political factors that favoured whaling in the Arctic and Antarctic. In the Antarctic, whaling companies could get exclusive rights

to hunting grounds and whaling station locations. In the Arctic, the legal status of Spitsbergen was uncertain, which created insecurity because nobody could secure exclusive ownership of the resources. Nevertheless, conditions in the Arctic were still favourable for the whaling industry. Norwegian authorities supported the land claims of Norwegian whaling companies to extend their political influence. This protected their territorial claims in case of conflict. The whaling companies occasionally supported the geo-political schemes of states – an example is the Norvegia expedition. However, the whaling companies only supported the political motivations of states when it suited their own economic interest – they were interested in money, not politics.

- 2) Many initiatives to create the whaling projects came from people with previous experience in the industry (Finneset, Signy island, and Walrus Bay) but who lacked the networks to set up whaling operations in the polar areas. To secure the necessary financial support to build their whaling stations (local networks), these actors strategically enrolled suitable investors (global network). It is not surprising that most initiatives came from people with whaling experience. They had the necessary knowledge and experience in constructing local whaling networks in harsh and cold environments. And although the Arctic and Antarctic were both polar regions, to the actors they were just another area in which to set up a whaling operation. Apart from the remote location and uncertain legal status, polar whaling did not differ too much from whaling projects elsewhere (e.g., Norway, Iceland, Newfoundland, and Africa). Attracting investors to support their whaling projects was, in most cases, an easy task as other companies had generated huge dividends for their shareholders. Often, the projects were supported financially by political actors.

One of the three stations mentioned above, Walrus Bay, operated as a private enterprise throughout its operational lifespan. Of the four stations included in this study, only Prince Olav Harbour was established by a group (Irvin and Johnson) that did not have extensive whaling experience in the polar areas.

Irvin and Johnson had worked in the sealing industry before setting up their whaling company. Much like Ingebrigtsen, who had plenty of polar experience, they chose to keep their enterprise private. Unlike the other projects, they operated in two areas using the same platform, which negatively affected production. Despite this, the company was the first to introduce diesel-powered whale catchers to extend the range and speed of their catchers and maximize catches. Whether Irvin and Johnson's lack of whaling experience was to blame or not, their actor network in South Georgia failed after just a few years when the local network lost the support of the owners.

By generating dividends, exploiting political agendas, and adapting their activities to the environment and changing market, the local networks were able to maintain the support of the global network.

- 3) Spitsbergen and Bear Island were No-Man's Lands, while South Georgia and the South Orkney Islands were British claims – but the whaling industry designed their local networks in both locations in a similar way. This was necessary because of the labour movement at the time and the challenges that weak state representation brought to whaling operations in the polar regions. The whaling companies used strategies to maintain social control when building their local networks. These included contracts, salaries, the black book system, leisure activities, architecture, iconographic expressions, settlement plans, and topography to emphasize hierarchies – all active tools to build and reinforce power relations.

Changing conditions on the global market stimulated whaling companies, like the Southern Whaling & Sealing Company and Tønsberg Hvalfangeri A/S, to look for new ways to adapt their activities. They achieved this by expanding their operations in the Antarctic and elsewhere, and establishing new production platforms. While the Southern Whaling & Sealing Company chose a pelagic platform, Tønsberg Hvalfangeri A/S chose a combination of whaling stations and pelagic whaling. The industry pushed the development of pelagic technologies so they could move out of restricted waters and explore new

hunting grounds. This was important because whaling companies were under pressure to increase their production in response to declining whale oil prices in the 1920s. Therefore, it was not only environmental and political factors to which the whaling companies adapted their local networks, but also the changing market.

Furthermore, the whaling companies' local networks in the polar landscapes fulfilled a geo-political role for states wishing to exercise sovereignty or build political influence there – although the industry itself did not have such aspirations. Their presence demonstrated economic activity – actants representing effective occupation – which played an important geo-political role. This fulfilled the economic and political needs of different global actors.

- 4) The expansion of pelagic whaling from the late 1920s challenged established power relations and political control; the whaling companies were able to move out of controlled waters into international waters where they could find new hunting grounds and operate without restrictions. The changing market conditions and new technological developments in whale processing, vaporization, and radar detection meant that whaling companies had to change their local networks to maintain the support of their global networks. The closure of the two whaling stations at South Georgia and Signy Island was the result of this process.

The globalisation of the whaling industry and the discovery of new hunting grounds in Africa, South Georgia, and the Antarctic attracted whaling companies from Spitsbergen and Bear Island. The lure of more prosperous hunting grounds together with the poor catches and difficult environmental conditions in the Arctic led to the closure of the Arctic whaling stations. The actors abandoned the hunting grounds there. The brief reopening of Finneset whaling station later on was driven by the opportunity to supply a national market with whale oil after the First World War and the belief that whale populations had recovered from earlier exploitation. But the project failed because there were not enough whales left to exploit.

11. Sources

The sources I have used in this thesis consist of printed and unprinted material, as well as of fieldwork data and photos. The data collected have been stored in a database developed within the framework of the International Polar Year 2007-2008.

Below I have listed the sources that I have referred to in the text. The unprinted sources consist of archival material both from public archives and from private collections. The printed sources consist of books, chapters and of articles, as well as of other publications. These have been listed below alphabetically with no consideration to their thematic focus.

Unprinted sources

Archives

Norway

Norwegian Polar Institute, Tromsø

- *Photo collection*

The Norwegian Telemuseum

- *Photo collection*

Tromsø State archive

- *Det Konglige Utenriksdepartementet. Beretning. Miljøverndepartementet. Norsk Polarinstitutt. Norges Svalbard og Ishavsundersøkelser (NSIU) 1928. Vol: 0085: E-Korrespondanse og saksdokumenter.*
- *Store Norske Spitsbergen Kulkompani archives. Private Archive No. 73.*
 - *Vol: 452. (1914-1916)*
 - *Vol: 451. Fldr: 1909-1923 Green Harbour, A/S Nimrod.*
- *Norsk Svalbard og Ishavsundersøkelser (NSIU) 1928. Vol: 0085. E-Korrespondanse og saksdokumenter. "Beretning"*
- *Miljøverndepartementet. Norsk Polarinstitutt. Vol: 0054. E- Korrespondanse og saksdokumenter.*

Sandefjord Whaling Museum

- *The Diary of Alex Lange 1904- 1907/08.*
- *Hvalfangerforeningen.*
 - *Korrespondanse ang salg av hvalolje. Vol: 1. 1907-1939.*
 - *Diverse Pakkesaker. Vol: 3. (1912-1922).*
 - *Diverse Pakkesaker. Vol 4. 1913-1920.*
 - *Korrespondanse. Vol: Div angaaende hvalfangstens historie. 1913.*

- *Korrespondanse angående internasjonale avtaler. Vol: 1, 1915-1919.*
- *Korrespondanse angående internasjonale avtaler. Vol 2. 1920-30 årene.*
- *Norges Hvalfangstførbund, Korrespondanse ang Hvalfangstens Historie. Vol 5. Transcribed "intervju 25/10-1960 med skipteknisk konsulent Herman Christensen, Oslo".*
- *Hvalrådet. Fångsttdagbøker 1931-1943. Vol: 15. Fldr: Hvalfangstselskapet Haugar A/S.*
- *Skipsjournaler. F-skipsjournaler, D/S Ulv 1. Vol: 0230. Fldr: 1926-1927.*
- *Anderssons photo collection.*
- *Norsk Fiskeritidende*
- *Norsk Hvalfangsttidende*
- *The Prince Olav Harbour photo collection.*

Riksarkivet, Oslo

- *The Norwegian Foreign Ministry. Series: P7.*
 - *Vol: B5145- Iversen.*
 - *Vol: 5145- Finneset.*
 - *Vol: B5146. Fldr: Finneset*
 - *Vol: 5174.*
- *Store Norske Spitsbergen Kulkompani archives. Private Archive No 73. Vol: 451. Fldr: 1909- 1923, Green Harbour/ AS Nimrod.*

The Norwegian National Library, Oslo

- *Oversiktskart over Spitsbergen – Sjøkart optat av Ritmester Isachsens norske Spitsbergenekspedition med Marinen d/s Farm 1909-1910. Reference no-kb_krt_00560.*
- *MS Fol 3905 Logbook of D/S Skytten.*

Gamvik Museum

- *Photo collection*

The private archive of the Ingebrigtsen-Hay family

- *Photo collection*

The private Archive of Karl Jan Skontorp

- *The Private Diaries and letter of Søren Berntsen, seasons 1923/24- 1930/31*

Germany

Senckenberg museum

- *Photo collection*

Australia

The Private Collection of Glenn McIntosh

- *The unpublished History of the Irvin and Johnson Limited, Part 1 & 2.*

Great Britain

The British Antarctic Surveys, Cambridge

- *AD6-19-2-H*
- *The private archive of the Estate of David Wynn-Williams.*
 - *D5-1-4-2*
 - *D5-1-4-4*
 - *D5-1-4-5*
 - *D5-1-0-10.4*
 - *D5-1-5-4*
 - *D5-1-4-8*
 - *D5-1-4-7*
 - *D5-1-5-6.1*
 - *D5-1-5-5*
- *Dick Laws Private collection*
 - *A 30-37*
 - *B30-36*
 - *B 35-10*
 - *C 18-31*
 - *C 89-41*
 - *C 89-42*
 - *XIV 79*

Edinburgh University

- *The Centre for Research Collections, Edinburgh University. Vol: William Speirs Bruce Manuscripts, Gen. 1646 6/10.*

The United States of America

Michigan Technological University Archive, Houghton

- *The Longyear Collection. The Archival of Michigan Technological University. Houghton, Michigan, USA. Ref: No reg 2007-07-26-04.*
- *Longyear Spitsbergen Collection. MS-031. Box 4. Fldr 22.*
- *The Arctic Coal Company. Scott Turner Collection. Box: CC, Fldr: CC13.*

The Falkland Islands

The Falkland Islands Archives, Stanley

- *General Letter Book/ Governor. November 1881-December 1908. Outward.*
- *SG & DEP. Whaling- General. Box 27.*
- *Dependencies-Whaling 3, 1923-1929. S of S CS [C4/28]. Fldr: 24.*
- *General Letter Book/ Governor. November 1881-December 1908. Outward.*
- *Despatch Book. January 1923-December 1923. Inward.*
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