

Bombers, Bunkers, and Badges: The Cold War Materialised in National Museums Scotland

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Declaration

This thesis is being submitted for the degree of Doctor of Philosophy at the University of Stirling.

I declare that all the material contained in this thesis is my own work.

It has not been submitted before for any degree or examination in any other University.

This research has received ethical approval from the University of Stirling's General University Ethics Panel (GUEP) on 13 December 2018, application number GUEP 567.

Any errors or inadequacies that remain are my responsibility.

A handwritten signature in black ink that reads "S. Harper". The signature is written in a cursive style with a large initial 'S'.

Sarah Harper

30 June 2022

Abstract

How does an object become a Cold War object? Through its military installations, defence industry as well as the strength of its peace movement, Scotland was a key site of the Cold War in the UK. While there has been some research on how to classify such sites in the context of the 'Cold War', there has been very little systematic enquiry on how far the movable material culture originating from these sites and places are also recognised as 'Cold War' objects in the museums which acquired them.

This thesis investigates to what extent have Cold War meanings become attached to objects in the collection of National Museums Scotland (NMS). Taking an object biographical approach, this thesis explores the life of selected objects from its creation, through its use life, to its life as a museum object. Museum objects are at the heart of this research, coupled with archival material and oral testimonies from people involved at various points of the object's life.

This research is arranged by considering Cold War objects from a global macro-level to a local micro-level perspective. Each chapter focuses on an object or cluster of objects to determine at what points Cold War meanings have or have not become attached to them, and what this means for the authenticity and values ascribed to them. Case studies include the Ferranti Meteor aircraft, the Dounreay Fast Reactor control room, equipment used by the Royal Observer Corps, Campaign for Nuclear Disarmament ephemera, and a collection of Soviet and Space Race badges.

This study contributes to Cold War heritage scholarship by demonstrating how pivotal people and place are in attributing Cold War meanings to material objects. It also makes suggestions on the practical implications on discovering Cold War objects within museum collections.

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Abbreviations

AHUK - Aviation Heritage United Kingdom

APSS - Aviation Preservation Society Scotland

AWDREY - Atomic Weapons Detection Recognition and Estimation of Yield

AWRE - Atomic Weapons Research Establishment

CND - Campaign for Nuclear Disarmament

DERE - Dounreay Experimental Research Establishment

DFR - Dounreay Fast Reactor

DMTR - Dounreay Materials Testing Reactor

DSG - Dounreay Stakeholder Group

DSRL - Dounreay Site Restoration Limited

NDA - Nuclear Decommissioning Authority

NLS - National Library of Scotland

NMS - National Museums Scotland

NMCC - National Museums Collection Centre

NMoF- National Museum of Flight

NRS - National Records of Scotland

PFR - Prototype Fast Reactor

PMS82 - Peace March Scotland 1982

ROC - Royal Observer Corps

RSM - Royal Scottish Museum

SaCN - Scotland a Changing Nation (Gallery at NMS)

SMG - Science Museum Group

SCRAM - Scottish Campaign to Resist the Atomic Menace

UKAEA - United Kingdom Atomic Energy Authority

UKWMO - United Kingdom Warning and Monitoring Organisation

Introduction

Since the Cold War ended, historians and heritage professionals have endeavoured to understand how this 'imaginary war' has been physically preserved and commemorated.¹ The war was imaginary in the sense that the consequences of a nuclear attack could only be simulated, meaning that preparing and anticipating how nuclear weapons might be used became 'itself a key battlefield of the Cold War.'² Preparing for war took the form of physically building up national defences and communications infrastructure, much of which remains part of the British landscape.

The remaining built environment structures and corresponding material culture mean that the Cold War can be examined through physical and tangible sources. Surviving structures such as air bases, research and development facilities, underground bunkers, and missile testing sites have received much attention as places that were once shrouded with secrecy are now publicly acknowledged. However, the movable material culture originating from these built environments or created and used elsewhere, has only received a limited amount of attention in Cold War heritage scholarship. John Beck and Ryan Bishop remarked: 'sometimes the material legacies of the Cold War are visible and tangible...Often, however, the material traces of the Cold War thinking are imperceptible', emphasising how the built environment of Cold War sites are more obvious and visible in contrast to the movable material culture which furnished them.³

Such broad definitions mean that it is not clear what counts as a Cold War object and what does not. Therefore, it is difficult for museums to be able to identify what objects within their collection could be deemed 'Cold War' objects. This begs the question, to what extent Cold War meanings have become attached to objects in museums such

¹ Mary Kaldor, *The Imaginary War: Understanding the East-West Conflict* (Oxford: Blackwell, 1990); Samuel J. M. M. Alberti and Holger Nehring, "The Cold War in European Museums – Filling the Empty Battlefield," *International Journal of Heritage Studies* 28, no. 2 (2022).

² Matthew Grant and Benjamin Ziemann, *Understanding the Imaginary War: Culture, Thought and Nuclear Conflict, 1945-90*, Cultural History of Modern War, (Manchester: Manchester University Press, 2016), p. 4.

³ John Beck and Ryan Bishop, *Cold War Legacies: Systems, Theory, Aesthetics, Technicities*, (Edinburgh: Edinburgh University Press, 2018), p. 9.

as the National Museums Scotland, and what influences the authenticity and values have been ascribed to these objects over their lifetime?

This thesis seeks to address this lacuna by considering a selection of Cold War objects in the collections of National Museums Scotland (NMS).⁴ NMS' vision statement: 'Inspiring people, connecting Scotland to the World and the World to Scotland' encapsulates why this collection has been selected for this research.⁵ NMS offers a diverse range of objects collected by four key departments – Science and Technology, Scottish History and Archaeology, Global Arts, Culture and Design, and Natural Sciences. The breadth of this collection means that I could explore the influence of the Cold War from a range of themes, combining military and civilian objects. These collections have not yet been assessed for their Cold War content despite there being many objects which have the potential to be viewed in this way.⁶ Moreover, until recently, NMS did not have a rubric called 'Cold War' in its internal classification system Adlib.⁷ By examining objects only from NMS, each object is subject to the same museum processes such as documentation and collections management, and I had full access to the collection as a Collaborative Doctoral Partnership student embedded within the museum. Researching the NMS collection offers an opportunity to understand the collection in new ways and ask important questions to shed light on any Cold War connections.

The Scottish perspective of the Cold War and the associated material culture is important in drawing tangible connections to Scotland's efforts during this period and highlighting the different levels of society this affected. The geographical location of the country put Scotland on the 'front line' due to the waters of the north-east Atlantic and the Greenland Iceland-UK gap which was vulnerable to attack from Soviet nuclear submarines.⁸ Scotland was home to disproportionately more military installations than

⁴ National Museums Scotland is comprised of four museum sites – The National Museum of Scotland, The National Museum of Flight (NMoF), the National War Museum and The National Museum of Rural Life – as well as the National Museums Collections Centre (NMCC).

⁵ National Museums Scotland, 'Strategy', [www.nms.ac.uk](https://www.nms.ac.uk/about-us/our-organisation/strategy/#:~:text=Our%20mission%20is%20to%20preserve,cultures%2C%20and%20the%20natural%20world), <https://www.nms.ac.uk/about-us/our-organisation/strategy/#:~:text=Our%20mission%20is%20to%20preserve,cultures%2C%20and%20the%20natural%20world>, Accessed: 11 June 2022.

⁶ Samuel J. M. M. Alberti, "The Cold War in Museums: Using Artefacts to Tell Twentieth Century History," *Russian Foundation for Basic Research Journal* N1 (105) January - March (2020): p. 44.

⁷ In the course of this research NMS updated their collections management system to Axiell. For simplicity I will refer to their previous system Adlib throughout this thesis.

⁸ Trevor Royle, *Facing the Bear: Scotland and the Cold War* (Edinburgh: Birlinn Ltd, 2019), p. xiii.

the rest of Britain⁹ and also played host to several international companies responsible for research and development in defensive technologies.¹⁰ This combination of military presence and defensive industries in Scotland were major contributors to Britain's Cold War efforts. However, these installations were not wholly welcomed. The establishment of nuclear submarine facilities around the west coast of Scotland caused an upsurge of popular protest and significant local opposition.¹¹ The Scottish Campaign for Nuclear Disarmament (CND) and other peaceful organisations actively protested against the installations and presence of nuclear weapons and the production of nuclear energy in Scotland.¹² The Scottish CND received support from the Scottish Communist movement and the Scottish Labour party as well as some local authorities, trade unions and citizens in opposing the introduction of Polaris and later Trident in Scottish lochs.¹³

Research Questions

Against this background this thesis investigates how, if at all, objects become 'Cold War' objects in the context of museums, and National Museums Scotland in particular. It asks to what extent Cold War meanings have become attached to objects in the collections of National Museums Scotland and how this has occurred.

⁹ For detailed description of military bases and activities in Scotland see Malcolm Spaven, *Fortress Scotland: A Guide to the Military Presence* (London: Pluto, 1983); David Gerard Mackay, "Scotland the Brave? US Strategic Policy in Scotland 1953 - 1974" (MPhil University of Strathclyde, 2008).

¹⁰ John F. Wilson, *Ferranti: A History - Building a Family Business, 1882-1975* (Lancaster: Carnegie Publishing Ltd, 2000); Graham Spinardi, "Civil Spinoff from the Defence Research Establishments," in *Cold War, Hot Science: Applied Research in Britain's Defence Laboratories, 1945-1990. Studies in the History of Science, Technology, and Medicine*, ed. Robert Bud and Philip Gummert (Amsterdam: Harwood, 1999). See also Hugh Walker, 'Hewlett Packard South Queensferry: Innovation in Silicon Glen 1965 – 2010', www.hpmemoryproject.org, https://www.hpmemoryproject.org/timeline/hugh_walker/hugh_walker_memoir.htm, Accessed: 11 March 2022.

¹¹ Catherine Eschle, "Bairns Not Bombs: The Scottish Peace Movement and the British Nuclear State," in *The United Kingdom and the Future of Nuclear Weapons*, ed. Andrew Futter (New York: Rowman and Littlefield, 2016), p. 142. Malcolm Chalmers and William Walker, "The United Kingdom, Nuclear Weapons, and the Scottish Question," *The Nonproliferation Review* 9, no. 1 (2002).

¹² The Faslane Peace Camp is one of the longest running peace camps in the world. Similarly, protestors peacefully occupied the site of the proposed Torness Nuclear Power Station in 1979. Eschle, "Bairns Not Bombs: The Scottish Peace Movement and the British Nuclear State."

¹³ Brian Jamison, "Will They Blow Us A'Tae Hell? Strategies and Obstacles for the Disarmament Movement in Scotland," in *Scotland and the Cold War*, ed. Brian Jamison (Dumfermline: Cualann Press, 2003), p. 115; Christopher R Hill, "Nations of Peace: Nuclear Disarmament and the Making of National Identity in Scotland and Wales," *Twentieth Century British History* 27, no. 1 (2015).

In analysing how Cold War meanings become attached to objects, this thesis also asks in what ways different people and places have influenced the interpretation of authenticity ascribed to these objects and how the value assigned to these Cold War objects has changed over the lifetime of the object from real use to becoming a museum artefact. Throughout, I seek to show that authenticity and value are not fixed properties of an object. Instead, I emphasise how the interactions between people and objects have influenced the ways in which authenticity and value have been ascribed to them at different times.

Objectives

Thus, I aim to unpack selected parts of a museum collection to 'problematise collections as material and social assemblages through an interrogation of how they developed, the impacts they have had over time and the roles they continue to play in the contemporary world.'¹⁴ By journeying through different kinds of Cold War material culture and bringing together a range of objects from key Cold War themes, I offer elements of explanation of how far the National Museums Scotland collection is representative of the Scottish Cold War experience.

Methodology

To answer these questions and achieve these objectives, this thesis will use an object biography approach. This approach allows me to summarise the life of an object from creation through its use life to becoming a museum object. I also utilise the benefits of object 'itineraries' by acknowledging the traces of places which circulate through objects and the notion that objects have no real beginning or end as their lives are ever evolving.¹⁵ In this way, the objects under examination in this thesis may currently be valued for their non-Cold War purposes, yet they have the potential to represent a multitude of stories and connections including those related to the Cold War. Objects

¹⁴ Sarah Byrne et al., "Networks, Agents and Objects: Frameworks for Unpacking Museum Collections," in *Unpacking the Collection*, ed. Sarah Byrne et al. (Santa Fe: Springer, 2011), p. 4.

¹⁵ Rosemary A. Joyce and Susan D. Gillespie, *Things in Motion: Object Itineraries in Anthropological Practice* (Santa Fe: School for Advanced Research Press, 2015), p. 3.

are interpreted in a multitude of ways depending on independent people making alternative assumptions about the objects at different times.

Understanding the biography of a museum object is important in recognising the different relationships that occur between people and things.¹⁶ The range of people involved in an object's life changes when it enters the museum as it becomes subject to observation from curators, researchers, and visitors who each ascribe their own personal meanings and connections to the object. The influence of the curator is an important part in the life of the museum object, as they have the power to accept or reject a donation and to decide which objects go on public display or remain in storage, ultimately altering the biography of the objects.

As much as people influence objects, objects can also influence people. Objects have the ability to exert agency in a variety of ways, such as through reminiscence, transferring skills, and by being present in complicated cultural frameworks.¹⁷ Agency is the capacity to act, meaning this can be applied to machines, signs and collective social groups, as well as to people.¹⁸ Within the museum environment, objects are still active in forming new social relationships between people, curators, and communities who mutually influence the object's biography as much as the object to some extent influences the biographies of humans.¹⁹ By taking a biographical approach, my thesis seeks to understand how the meaning of objects change over time in different contexts, highlighting the possibility of objects having 'multiple lives, both simultaneously and consecutively.'²⁰ With this in mind, my methods incorporate object biographies with oral testimonies from people connected with the selected objects at different points in its life.

¹⁶ Kate Hill, *Museums and Biographies: Stories, Objects, Identities*, Museums & Biographies, (Suffolk: Boydell & Brewer, 2013), p. 3.

¹⁷ Karen Schamberger, Martha Sear, Kirsten Wehner, and Jennifer Wilson, "Living in a Material World: Object Biography and Transnational Lives," in *Transnational Ties: Australian Lives in the World* ed. Penny Russell Desley Deacon and Angela Woollacot (Canberra: ANU E Press, 2008), p. 295.

¹⁸ Janet Hoskins, "Agency, Biography and Objects," in *Handbook of Material Culture*, ed. Chris Tilley et al. (London: Sage, 2006). p. 74.

¹⁹ Byrne et al., "Networks, Agents and Objects: Frameworks for Unpacking Museum Collections," p. 4.

²⁰ Sally M. Foster and Neil G. W. Curtis, "The Thing About Replicas: Why Historic Replicas Matter," *European Journal of Archaeology* 19, no. 1 (2016): p. 129.

By doing this I am able to highlight how the authenticity of the objects alters over time and can allude to how 'Cold War' meanings may or may not have become attached by different people. Taking inspiration from Siân Jones, I define authenticity as a culturally constructed quality of an object which is dependent on who is viewing the object and in what context.²¹ Similarly, the value of an object changes over time as it is influenced by the actors present in its life at different points. Value is subjective as Georg Simmel suggests: 'value is never a "quality" of the objects, but a judgement upon them which remains inherent in the subject', meaning what one person may deem valuable, others may not.²² I kept these definitions in mind while considering the objects under examination and the responses from the oral testimonies.

Research Process

I deliberately chose objects which had not received a significant amount of attention from the museum in the past. I wanted to demonstrate that, although some objects were acquired for other reasons such as for their contribution to Scottish industry or simply their fascinating designs, they can still have Cold War meanings attached to them depending on the viewer. By taking a biographical approach to these objects I gleaned new information and drew attention to their Cold War connections. This involved examining the physical qualities, the function, purpose, and creation of the object to understand its birth and life, then exploring the context in which these objects were donated to the museum. In addition to this object analysis, I consulted archival and historical material to create a biographical timeline and to understand how these objects had interacted with different people and places over time.

In an effort to link the objects with key actors, I chose to incorporate oral testimonies into my research. For each chapter I began by selecting objects to examine based on background reading, online searches and informal conversations with museum staff. I then considered the various actors who may have influenced the biography of the object overtime. Following this, I contacted the curator responsible for the object or objects to discuss their own knowledge of the artefact, potential interviewees, and also

²¹ Siân Jones, "Negotiating Authentic Objects and Authentic Selves: Beyond the Deconstruction of Authenticity," *Journal of Material Culture* 15, no. 2 (2010): p. 182.

²² Georg Simmel, *The Philosophy of Money*, trans. Tom Bottomore and David Frisby, vol. 236 (London: Routledge, 1978).

to ask if they were willing to be interviewed. In most cases, the donor was the most obvious contact. However, some donors were untraceable, or difficult to identify as historic records were sparse. In the digital records of the objects, occasionally the donor is listed with their contact details. I liaised with the curators responsible for the objects and worked with them to establish a connection with the donors. In all cases the donors were willing to be interviewed. From this point, I considered the wider theme I was studying and found participants through relevant heritage groups and their networks as well as through online forums and social media groups.²³ By interviewing donors or heritage enthusiasts, they not only recall the history of the topic but also offer their own interpretation of the past influenced by their heritage interests.²⁴

It was important to gather original oral testimonies from people who had direct connections to these objects prior to their museum lives to understand how they felt about them and to shed light on how and why these objects entered the museum. I consulted curators and museum staff who could describe the museum life of the objects but also highlight their own feelings or bias which may have influenced the object's biography. These participants assisted in sharing any correspondence that eventually led to the acquisition of an object, information on categorisation and provided key images of the objects both historical and those from previous exhibitions. Not all interviewees necessarily had a direct link to the object under examination but did have first-hand experiences and extensive knowledge of the topic.

These interviews were semi-structured which allowed for meaningful conversation and space for participants to expand on their experiences and opinions. Following Uwe Flick's suggestions on how to approach the semi-structured interview, I ensured I was actively listening to show participants that I was paying attention to their answers, reflecting on what they were saying and encouraging participants to expand on their answers where appropriate.²⁵ I was particularly inspired by Elizabeth Tonkin's approach to interviews whereby she used photographs and objects as prompts to

²³ For example, I became a member of the Royal Observer Corps Association (24 Group, Edinburgh) and posed questions in aviation forums and social media groups.

²⁴ Robert Perks and Alistair Thomson, *The Oral History Reader* (London: Routledge, 1998), p. xi.

²⁵ Uwe Flick, *Doing Interview Research: The Essential How to Guide* (Los Angeles: SAGE, 2022), p. 181. See also William C Adams, "Conducting Semi-Structured Interviews," in *Handbook of Practical Program Evaluation*, ed. Kathryn E. Newcomer, Harry P. Hatry, and Joseph S. Wholey (New Jersey: Wiley, 2015), p. 493.

stimulate recall among interviewees as 'the capacity of memory to be so unlocked is curious and complex' referring to the benefit of using props to awaken long forgotten memories.²⁶ This method meant that during my interviews the objects worked to distract the interviewee from the formalities of the interview and put them at ease by discussing topics and objects they were very familiar with. I could also ask additional questions based on their memories or feelings upon seeing the objects.

As a female researcher in my mid-twenties while researching and gathering oral testimonies, I found that there were a couple of instances during interviews where I felt the dynamic between myself and older male interviewees produced a slight, but productive tension. In some cases, there was a competitiveness in knowledge sharing where interviewees tested how much I knew about the subject in order to demonstrate the extent of their own knowledge. Following Michael Schwalbe and Michelle Wolkomir's advice on interviewing men, they suggest to 'challenge the subject to take charge as an expert', which I utilised by encouraged interviewees to expand on their answers and linked questions specifically to their experiences.²⁷ For example, one male former Royal Observer Corps member began to describe the function of each object I intended to talk about upon sitting down at the interview table. I did not perceive this as condescending, rather I understood that he was being enthusiastic about sharing his knowledge of the objects. This desire to share his experiences enhanced my understanding of the objects as he intertwined his explanations with personal stories of using these objects in practise.

Due to the Covid-19 pandemic, I adapted my approach towards using a mixture of methods by instead referring interviewees to photographs or descriptions of objects under examination. Originally, I began by interviewing participants in person then transitioned to virtual interviews using Microsoft Teams or telephone. I deployed the same approach to the interviews by preparing broad questions and allowing for additional questions based on the interviewee's responses. However, without being in the same room as the interviewee, the physical element of the interview was lost as it

²⁶ Elizabeth Tonkin, *Narrating Our Pasts: The Social Construction of Oral History* (Cambridge: Cambridge University Press, 1992), p. 94.

²⁷ Michael L Schwalbe and Michelle Wolkomir, "Interviewing Men," in *Handbook of Interview Research: Context and Method*, ed. Jaber F Gubrium and James A Holstein (Thousand Oaks: Sage Publications, 2001), p. 207.

was more difficult to read body language and social cues. The dynamic of the interview was also different as there was a less natural flow in conversation which reduced the chances of unprompted interactions. Furthermore, I was unable to use physical objects as prompts for further conversation or visit people in their own environments such as their homes or workplaces. Due to the order in which I approached this research, I have only applied the method of interviewing people in person and with the objects to the Royal Observer Corps and Campaign for Nuclear Disarmament chapters.

In total I interviewed ten people and utilised pre-existing interviews conducted by others which also captured relevant testimonies.²⁸ In some cases, I have had lengthy email correspondence with people who offered important information, but I felt did not warrant a full interview. These correspondences were usually regarding specific questions, for clarifications or to share relevant sources including images and websites. All interviewees and email correspondents have been given pseudonyms to conceal their identity as far as possible throughout this thesis.

In terms of existing Cold War oral history research, I have been inspired by the approaches of Jessica Douthwaite and Kate Brown in capturing the emotional and social impact of the Cold War on civilians. Douthwaite's work examined the civilian experience of the Cold War by focusing on the emotional response of those who grew up in post-war Britain and particularly those involved with civil defence measures and, in contrast, anti-nuclear campaigning.²⁹ Brown's work in gathering testimonies from people in opposing nuclear weapon production sites in Richland, USA and Ozerk, USSR aimed to illuminate the shared experiences of the people behind these nuclear operations which were responsible to contributing to the global Cold War.³⁰ Both projects emphasised the importance of the context of the interviews and their roles as interviewees in determining the outcome of the interviews.

²⁸ I consulted Dianne Child's 2009 interview with Kate Barnet to make comparisons with my 2019 interview with Barnet. I also consulted interviews of former Dounreay staff conducted by John Dunn from 2011.

²⁹ Jessica Douthwaite, "Voices of the Cold War in Britain, 1945-1962" (PhD University of Strathclyde, 2018).

³⁰ Kate Brown, *Plutopia: Nuclear Families, Atomic Cities, and the Great Soviet and American Plutonium Disasters* (Oxford: Oxford University Press, 2013).

Often, details gathered from oral testimonies are absent in official or archival documents, such as minor details, personal memories, emotions, and opinions.³¹ These additional details add new layers of authenticity to objects and can highlight how much value people attach to material culture. In some cases, technical objects or handmade artefacts are best understood when the original creator or owner is present to explain why certain things were made and in what context, how they work and what these objects mean to them.³²

Primary Sources

In addition to my interviews, archival sources are key in providing contextual evidence surrounding the objects to illuminate how the object's biography has developed over time. These sources complement my methods as relevant documents corresponding to an object add new layers of authenticity and can highlight the connections between the object, people, and places over time. Although not always available, NMS endeavours to retain relevant material connected to the objects in an individual object file. This includes historical sources such as correspondence between the donor and the museum, the acquisition documentation, transfer documents and occasionally hazards and conservation certification. Other documents include evidence of previous display such as object labels, photographs and museum guides or leaflets. These are valuable in establishing the condition of the objects over time and how they transitioned from active to museum lives. In some of the object clusters I examine, there are ephemeral and paper documents within the collection such as leaflets, postcards, posters, pamphlets, and organisational paperwork.

National and local newspaper articles offer contemporary viewpoints on events, giving an insight into the contexts in which these objects were created or used and, in some cases, show the object itself in photographs. Similarly, company and organisational newspapers and newsletters are also useful in highlighting the issues or stories they were occupied with throughout the Cold War period. For example, the National Library of Scotland (NLS) holds a collection of the Ferranti company newspaper *Ferranti News*

³¹ Valerie Raleigh Yow, *Recording Oral History: A Guide for the Humanities and Social Sciences* (Lanham: Rowman & Littlefield, 2014), p. 10.

³² Raphael Samuel quoted in Yow, *Recording Oral History: A Guide for the Humanities and Social Sciences*, p. 14.

(1972 – 1987) and the journals of the Campaign to Resist the Atomic Menace (SCRAM). These contemporary sources complement the information gathered through object analysis and oral testimonies. Where archival material gives factual and objective evidence about these objects, oral testimonies highlight personal experiences of material culture as interviewees share stories from their memories and allude to the meaning of the objects to them.³³

As this thesis captures oral testimonies from a range of people with varying connections to the Cold War, it is important to consider how they derive their own Cold War meanings based on their personal experiences and beliefs. Where some acknowledge their involvement or association with a key Cold War theme such as civil defence or anti-nuclear campaigning, others are less convinced and do not recognise their contribution to the wider Cold War. In more recent years there has been an expansion in the literature on the everyday impact of the Cold War, which I bore in mind when analysing the responses of my interviewees. For example, Jonathan Hogg's research draws attention to nuclear culture which was a 'persistent backdrop to everyday life, appearing more visible around times of crisis, but always there as a brooding corner of British culture.'³⁴ Where older generations saw the emerging Cold War as something which could be overcome or survived in similar ways as in the Second World War, younger generations were increasingly aware of the realities of a nuclear attack. Civil defence measures and anti-nuclear protest brought the dangers of the Cold War to the fore, and with it the growth of 'atomic anxiety', despite some choosing to focus on the 'nothingness' rather than imagining the reality of a catastrophic nuclear attack.³⁵ Jon Agar uses a 'three-wave' model to analyse the 1960s which shows the influence of the Cold War on everyday life by considering institutional history, the emergence of social movements and the self-consciousness of people living through these turbulent times.³⁶ During this period, scientists and experts in nuclear research increasingly came into the public spot light where they

³³ Lynn Abrams, *Oral History Theory* (London: Routledge, 2016), p. 82.

³⁴ Jonathan Hogg, *British Nuclear Culture: Official and Unofficial Narratives in the Long 20th Century* (London: Bloomsbury Academic, 2016), p. 4.

³⁵ Matthew Grant, "The Imaginative Landscape of Nuclear War in Britain, 1945–65," in *Understanding the Imaginary War*, ed. Matthew Grant and Benjamin Ziemann (Manchester: Manchester University Press, 2016), p. 112.

³⁶ Jon Agar, "What Happened in the Sixties?," *The British Journal for the History of Science* 41, no. 4 (2008): p. 567-68.

were open to criticism and targeted in protests; some scientists also figured as counter-experts, sharing their concerns about nuclear energy.³⁷

There have been several studies which consider the 'unofficial' and localised responses to nuclear culture and the Cold War.³⁸ Claire Langhamer used the contemporary accounts from Mass Observation to analyse the emotional politics of the atom bomb from ordinary people. She discovered that people often wrote in detail about their feelings, reflecting on where they were and how they heard the news of the atomic bombs dropped on Hiroshima and Nagasaki. This in turn informed their emotional reactions to the future of Britain with the potential to be attacked with nuclear weapons.³⁹ Similarly, Adrian Bingham has explored the significant role of newspapers in shaping how the British public learned of and interpreted the impact of nuclear weapons and technology and what this meant for Britain's position on a global scale.⁴⁰ The popular press fed anxieties surrounding nuclear energy with images of mushroom clouds at weapons tests and stories of spies trading information which ultimately helped shape attitudes both for and against the construction of British nuclear weapons.⁴¹ Some of the participants of this research were exposed to these media accounts and they undoubtedly contributed to forming their own definitions of the Cold War today.

In some cases, the views of museum staff I interviewed were also impacted by their own experiences of growing up during the Cold War period. This in turn may have influenced how they ascribe objects with Cold War meanings. Gathering oral testimonies from museum staff was also an opportunity to understand their perception of why these objects entered the collection and how they interpret them. I deliberately chose to only interview those with direct connections to the objects or main Cold War theme rather than including visitor perspectives. Although the visitors' perspectives on these Cold War objects would have been advantageous, all of the objects in this research apart from the Ferranti Meteor are in long term storage, meaning these are

³⁷ Agar, "What Happened in the Sixties?," p. 584.

³⁸ Hogg, *British Nuclear Culture: Official and Unofficial Narratives in the Long 20th Century*.

³⁹ Claire Langhamer, "Mass Observing the Atom Bomb: The Emotional Politics of August 1945," *Contemporary British History* 33, no. 2 (2019): p. 8.

⁴⁰ Adrian Bingham, "'The Monster'? The British Popular Press and Nuclear Culture, 1945–Early 1960s," *The British Journal for the History of Science* 45, no. 4 (2012): p. 609-10.

⁴¹ Bingham, "'The Monster'? The British Popular Press and Nuclear Culture, 1945–Early 1960s," p. 623.

currently unavailable to be viewed by visitors and due to Covid-19 surveying visitors was not possible. However, I did examine the visitor comments and reviews of the National Museum of Flight (NMoF) on Trip Advisor to gauge if the Meteor featured in their reviews.

Literature Review

Through this approach, my thesis brings together - and thus develops further – three key strands of research: museology of conflict (and the Cold War in particular), the history of Cold War materiality and material culture, as well as heritage perspectives on ‘the social life of things’ and research on authenticity and value.

Cold War Museology and Memory

Cold War museology is a relatively recent field of research. Samuel Alberti and Holger Nehring’s study of Cold War exhibitions in Europe highlights the different ways this topic has been interpreted in comparison with other nations on the periphery of the conflict.⁴² These museums have only briefly attempted to combine ‘military artefacts with a wider social and political discourse’ and none have been dedicated to the Scottish experience of the Cold War.⁴³

Alberti and Nehring’s research has demonstrated how exhibiting the Cold War is particularly challenging as it is unclear what kind of material culture is representative of this far-reaching period.⁴⁴ Jay Winter argues that war museums are ‘sites of contestation and interrogation’ where the victims of war should be commemorated in a way which does not fetishize or glorify war.⁴⁵ However, as the Cold War did not turn into an active war in Europe, it is unclear who are the victims of the conflict and how they should be commemorated. The differences in experiences of the period makes

⁴² Alberti and Nehring, "The Cold War in European Museums – Filling the Empty Battlefield."

⁴³ Wayne Cocroft, "Protect and Survive: Preserving and Presenting the Built Cold War Heritage," in *The Cold War: Historiography, Memory and Representation*, ed. Konrad H. Jarausch, Christian F. Ostermann, and Andreas Etges (Berlin: De Gruyter, 2017), p. 226.

⁴⁴ Alberti and Nehring, "The Cold War in European Museums – Filling the Empty Battlefield," p. 182.

⁴⁵ Jay Winter, "Museums and the Representation of War," in *Does War Belong in Museums?*, ed. Wolfgang Muchitsch (Transcript Verlag, 2013), p. 37.

displaying and interpreting Cold War material culture in museums difficult in comparison to other conflicts where timelines and objects are more obviously connected to the conflict such as the First and Second World Wars. The Imperial War Museum (IWM) was one of the first museums dedicated to the study of war and a place which 'celebrates the uncelebratable.'⁴⁶ Sue Malvern describes the creation of IWM after the First World War was to commemorate 'the war to end all wars' containing examples of weaponry, souvenirs, memorabilia, and a large art collection.⁴⁷ IWM has continued to collect and exhibit the material culture of conflict until present day, showing how conflict has developed and been memorialised over time. For IWM there is an issue with the memories associated with the objects they have on display as they harbour both political and ethical implications.

Recent scholarship on war museums and memory highlight how different museums have approached exhibiting conflict from agonistic and cosmopolitan perspectives. But these have so far not engaged with the Cold War. Stefan Berger and Wulf Kansteiner argue that: 'agonistic memory strives to capture the complexity of past conflicts and the diversity of conflicting opinions and feelings about said conflicts in an effort to promote a sense of human solidarity within and beyond the nation state and end the hegemony of neoliberalism.'⁴⁸ War museums are key places where agonistic memory and counter-narratives can be displayed to 'negotiate divisive memories of the past, both at the national and international levels.'⁴⁹ In this way, the complicated relationships between actors involved in conflict are not reduced to binary perpetrator versus victim narratives but take into account the social and political environment in which the conflict originated.⁵⁰ In contrast, cosmopolitan narratives in museums focus on the suffering of innocent victims, to show the human suffering of war. This applies to the approach taken by the United States Holocaust Memorial Museum where rather than glorifying war or trivialising the event, the museum exhibits human stories and corresponding personal items to allow visitors to begin to understand to some extent

⁴⁶ Sue Malvern, "War, Memory and Museums: Art and Artefact in the Imperial War Museum," *History Workshop Journal* 49, no. 1 (2000): p. 178.

⁴⁷ Malvern, "War, Memory and Museums: Art and Artefact in the Imperial War Museum," p. 180.

⁴⁸ Stefan Berger and Wulf Kansteiner, *Agonistic Memory and the Legacy of 20th Century Wars in Europe* (Cham: Palgrave Macmillan, 2021), p. 3.

⁴⁹ Anna Cento Bull et al., "War Museums as Agonistic Spaces: Possibilities, Opportunities and Constraints," *International Journal of Heritage Studies* 25, no. 6 (2019): p. 612.

⁵⁰ Cento Bull et al., "War Museums as Agonistic Spaces: Possibilities, Opportunities and Constraints," p. 614.

the experiences of Holocaust victims.⁵¹ These displays of ephemeral objects are deliberate to counter the proliferation of defensive weaponry and machinery more commonly seen in war museums. Museums have utilised a variety of methods in an attempt to interpret the collective memory of conflict through visual and interactive displays.

Memory Studies scholarship is key in understanding how my participants have established their own interpretations and memories surrounding the Cold War. It is especially indebted to more recent approaches to memory research, which regards collective or social memory as something that is actively created and constantly contested rather than something that develops in the form of distinctive ideas. Maurice Halbwachs assumed that collective memories are not only constructed by individual recollections, but individuals remember through engaging with others within social groups.⁵² Jay Winter and Emmanuel Sivan expanded on the 'socially framed' memory Halbwachs proposed, suggesting: 'when people come together to remember, they enter a domain beyond that of individual memory.'⁵³ However, more recent research has emphasised how Halbwachs' theory 'ignores conflicting memories, and tends to suggest that those memories that do not accord with the group gradually fade from memory', meaning that not all individual memories are treated equally.⁵⁴ People share their memories in a variety of ways, for example through memoirs, films, and speaking publicly. This view is shared by Alon Confino who argues: 'a given memory is subsumed within a culture that is constituted by common practises and representations', giving the example of national memory which is created by differing memories yet through common denominators creates an imagined community.⁵⁵

This thesis also builds on agonistic memory's multi-perspectival approach as I attempt to consider the 'social circumstances, context and agency' of the people I interview as

⁵¹ Robert M. Ehrenreich and Jane Klinger, *War in Context: Let the Artifacts Speak* (Transcript Verlag, 2014), p. 154.

⁵² Maurice Halbwachs, *On Collective Memory* (Chicago: University of Chicago Press, 1992), p. 40. Anna Green, "Individual Remembering and 'Collective Memory': Theoretical Presuppositions and Contemporary Debates," *Oral History* 32, no. 2 (2004): p. 38.

⁵³ Jay Winter and Emmanuel Sivan, *War and Remembrance in the Twentieth Century*, Studies in the Social and Cultural History of Modern Warfare, (Cambridge: Cambridge University Press, 1999), p. 6.

⁵⁴ Green, "Individual Remembering and 'Collective Memory': Theoretical Presuppositions and Contemporary Debates," p. 38.

⁵⁵ Alon Confino, "Collective Memory and Cultural History: Problems of Method," *The American Historical Review* 102, no. 5 (1997): p. 1399-400.

well as applying this to the objects under examination.⁵⁶ Additionally, I have interviewed and corresponded with a range of people who have varying connections to the Cold War and the objects, meaning I had the opportunity to analyse a variety of experiences, emotions, and memories of the period.⁵⁷

My research shares parallels with Sarah Marshall's research on the British cultural memory of the Cold War. Marshall uses Cold War television documentaries, press reactions and more recent museum exhibitions to consider how the Cold War has been imagined in recent years.⁵⁸ One commonality in our research is the challenge in defining the conflict, 'either as a conflict, context or as a period as a whole', as this vagueness also made assigning Cold War meanings to objects more difficult and clearly subjective.⁵⁹ Like Douthwaite, Marshall highlights the memories of the Second World War and fears for an unclear future influenced the cultural memory of the Cold War during and after the period.⁶⁰ Often those reflecting on the Cold War focus on specific 'hot points' such as the Cuban Missile Crisis or the fall of the Berlin Wall to aid in helping to define this period, something my interviewees also reflected upon.⁶¹ These variations in how the Cold War is remembered makes displaying this conflict in museums challenging. Museums are increasingly viewed as 'forums for memory communities' and places where eyewitness memories are incorporated into displays to offer engaging personal accounts, an 'ethically responsible way of approaching the past.'⁶² Therefore, my approach in bringing people and objects closer together may be pertinent in producing a more rounded display in future.

There has been a museological shift in how the Cold War is being interpreted in British museums. There has been a slow process of moving away from exhibiting only military history and strategy towards including more histories of everyday lives of civilians. For some traditional military museums such as the Imperial War Museum⁶³ and the RAF

⁵⁶ Anna Cento Bull and Hans Lauge Hansen, "On Agonistic Memory," *Memory Studies* 9, no. 4 (2016): p. 400.

⁵⁷ Bull and Hansen, "On Agonistic Memory," p. 399.

⁵⁸ Sarah Marshall, "The Cultural Memory of Britain's Cold War" (PhD University of Essex, 2021), p. 50.

⁵⁹ Marshall, "The Cultural Memory of Britain's Cold War," p. 50.

⁶⁰ Marshall, "The Cultural Memory of Britain's Cold War," p. 51.

⁶¹ Marshall, "The Cultural Memory of Britain's Cold War," p. 51.

⁶² Silke Arnold-de-Simine, *Mediating Memory in the Museum: Trauma, Empathy, Nostalgia* (New York: Springer, 2013), p. 12.

⁶³ Imperial War Museum, iwm.org.uk, <https://www.iwm.org.uk/>, Accessed 18 March 2022.

Museum Cosford⁶⁴, their attempts to introduce a civilian narrative are overshadowed by the wide range of military vehicles, aircraft, and weapons on display. Sarah Marshall's examination of Cold War exhibitions demonstrates how the varying approaches to exhibiting the Cold War produces different types of narratives, atmospheres, and memories of the period, which ultimately is evident of 'the challenge of how to remember the Cold War.'⁶⁵ In recent years the National Archives and the Victoria and Albert Museum have created exhibitions which do give a fuller picture of the British experience and cultural memory of the Cold War by highlighting the influence the conflict had on art and design as well as what the reality of a nuclear attack may look like.⁶⁶ The National Archives' 2019 exhibition *Protect and Survive: Britain's Cold War Revealed* brought visitors an insight into the British Government's plans to maintain control of the nation through civil defence and war gaming to imagine potential scenarios. This exhibition utilised official documents, leaflets, and pamphlets as well as popular culture items to show how the Cold War impacted on the daily lives of civilians.⁶⁷ Visitors could interact with various elements by listening to oral testimonies and film clips, as well as adding their own Cold War memories to a dedicated wall nearest to the exit. However, as Alberti and Nehring discuss, the exhibition neglected to place Britain in the context of the global Cold War or to consider the 'political and social relevance of these scenarios or [...] experiences.'⁶⁸ Despite these shortcomings, this exhibition is emblematic of the move away from purely military focused displays around the Cold War towards a broader view of the lived experience of the conflict, previously absent in museums.⁶⁹

Following this trend, this thesis deliberately focusses on a range of objects rather than only those with military connections to the Cold War. By doing this, I demonstrate the diversity of narratives available as well as how useful material culture studies are in interpreting the Cold War in new and more inclusive ways. Furthermore, I have

⁶⁴ RAF Museum Cosford, rafmuseum.org.uk, <https://www.rafmuseum.org.uk/cosford/things-to-see-and-to-see/cold-war/>, Accessed 18 March 2022.

⁶⁵ Marshall, "The Cultural Memory of Britain's Cold War," p. 76.

⁶⁶ The National Archives, 'Britain's Cold War Revealed', nationalarchives.gov.uk, <https://www.nationalarchives.gov.uk/cold-war/> and V&A, 'Cold War Modern', vam.ac.uk, <http://www.vam.ac.uk/page/c/cold-war/>, Accessed 18 March 2022.

⁶⁷ The National Archives, 'Britain's Cold War Revealed', nationalarchives.gov.uk, <https://www.nationalarchives.gov.uk/cold-war/>, Accessed 13 November 2022. I also visited this exhibition August 2019 with the Imperial War Museum's Cold War Subject Special Network group.

⁶⁸ Alberti and Nehring, "The Cold War in European Museums – Filling the Empty Battlefield," p. 189.

⁶⁹ Marshall, "The Cultural Memory of Britain's Cold War," p. 80.

discovered Cold War related objects within the collection which were previously overlooked but could be utilised for display in future Cold War exhibitions.

Cold War Materiality

Cold War materiality is not limited to small artefacts found in museum display cases, but also the large military installations scattered across the country. The research field surrounding Cold War materiality is geared towards the Cold War built environment and landscape on one hand, and the influence of Cold War design on the other. This thesis aims to bring together the missing cohesion of these topics through focusing on movable material culture.

There has been a wealth of research that considers the built environment of Britain's Cold War role in terms of the numerous abandoned military installations that have left behind an enduring legacy.⁷⁰ These once highly secretive sites are now being discovered, explored, and publicly acknowledged. John Schofield and Roger Thomas have extensively researched the remains of Cold War sites across England as part of English Heritage's Monument Protection Programme, which focuses mainly on military related sites such as air bases, nuclear monitoring bunkers and civil defence installations.⁷¹ Their study was the first to comprehensively classify the Cold War built environment as Cold War heritage in a response to the lack of clarity on the locations, chronology and types of military sites present in England.⁷² This study surveyed each identified site and provided a framework to determine their national significance, helping to clarify the existence of Cold War infrastructure in England and to inspire

⁷⁰ J. Schofield, *Monuments of War: The Evaluation, Recording and Management of Twentieth Century Military Sites* (London: English Heritage, 1998); Wayne Cocroft and Roger JC Thomas, *Cold War: Building for Nuclear Confrontation 1946-1989* (Swindon: English Heritage, 2004); Luke Bennett, "Bunkerology: A Case Study in the Theory and Practice of Urban Exploration," *Environment Planning* 29, no. 3 (2011); Graham Fairclough, "The Cold War in Context: Archaeological Explorations of Private, Public and Political Complexity," in *A Fearsome Heritage: Diverse Legacies of the Cold War*, ed. John Schofield and Wayne Cocroft (Walnut Creek: Routledge, 2007); Caitlin DeSilvey, *Curated Decay: Heritage Beyond Saving* (Minnesota: University of Minnesota Press, 2017).

⁷¹ Cocroft and Thomas, *Cold War: Building for Nuclear Confrontation 1946-1989*; Schofield, *Monuments of War: The Evaluation, Recording and Management of Twentieth Century Military Sites*.

⁷² John Schofield, Wayne Cocroft, and Marina Dobronovskaya, "Cold War: A Transnational Approach to a Global Heritage," *Post-Medieval Archaeology* 55, no. 1 (2021): p. 41.

other nations to consider their Cold War built environment in this way.⁷³ Devon DeCelles conducted a similar survey of Scottish Cold War sites in 2009 to offer suggestions of relevant Cold War monuments to schedule.⁷⁴

However, these reports do not include civilian sites such as the peace camps at Greenham Common and Faslane which were created in direct opposition to these military sites.⁷⁵ Furthermore, those creating these reports come from the perspective of heritage as classification as opposed to an analysis of how the heritage is interpreted. Therefore, they somewhat take 'Cold War' for granted by generating a list of characteristics. Prior to these official reports, in the 1980s authors and journalists such as Malcolm Spaven and Duncan Campbell wrote extensively to reveal the locations of Cold War related installations across the country and particularly Scotland.⁷⁶

Research on UK heritage sites sits alongside that in other European countries. Scandinavian research has played a pioneering role here. Its distinctive feature has been to focus less on classification and more on the way in which historical experiences and memories have given meaning to heritage sites. For example, research conducted into Swedish Cold War military installations encouraged recognising the everyday realities and the human experience of the Cold War 'from below' in addition to the history of the built environment.⁷⁷ Rosanna Farbøl develops this idea of cultural memory coming from the 'bottom up' as well as 'top down' for the case of Denmark.⁷⁸ Many Danish Cold War installations were destined to be demolished by their Ministry of Defence, but escaped destruction with the help of several local communities who worked to ensure these were preserved and the efforts

⁷³ Schofield, Cocroft, and Dobronovskaya, "Cold War: A Transnational Approach to a Global Heritage," p. 41.

⁷⁴ Devon DeCelles, *Cold War Thematic Survey* (Edinburgh: Historic Scotland, 2009).

⁷⁵ Veronica Fiorato, "Greenham Common: The Conservation and Management of a Cold War Archetype," in *A Fearsome Heritage: Diverse Legacies of the Cold War*, ed. John Schofield and Wayne Cocroft (Walnut Creek: Routledge, 2007); Yvonne Marshall, Sasha Roseneil, and Kayt Armstrong, "Situating the Greenham Archaeology: An Autoethnography of a Feminist Project," *Public Archaeology* 8, no. 2-3 (2009).

⁷⁶ Spaven, *Fortress Scotland: A Guide to the Military Presence*; Duncan Campbell, *War Plan U.K* (London: Paladin, 1983).

⁷⁷ Tony Axelsson et al., "Command Centre Bjorn: The Conflict Heritage of a Swedish Cold War Military Installation," *Journal of Conflict Archaeology* 13, no. 1 (2018): p. 14.

⁷⁸ Rosanna Farbøl, "Commemoration of a Cold War: The Politics of History and Heritage at Cold War Memory Sites in Denmark," *Cold War History* 15, no. 4 (2015): p. 473-4.

of Danish civilians remembered.⁷⁹ Many of these enthusiasts choose to restore these installations to celebrate and recognise the achievements of the many scientists, military personnel and civilians who played a part in protecting peace and preventing war during this period.⁸⁰

Despite the wealth of information documenting and categorising the British and Scottish Cold War built environment, there is little research linking these locations to the surviving movable objects connected to them. Much of the material culture preserved from these locations became museum objects or feature in heritage settings. This dislocation from their original environments to the museum does affect how different people ascribe these objects with authenticity.

The preservation of the materiality of war 'provides reference points or landmarks to the totalitarian nature of war in space and myth', but these points are to some extent unclear when examining the Cold War.⁸¹ There are two strands of material politics which are interconnected, this being, 'the politics of material culture and the material culture of politics.'⁸² The various international exhibitions and the famous Kitchen Debate⁸³ can be seen as prime examples of the 'material culture of politics' as commodities were charged with connotations of Capitalist or Communist ideals which inevitably shaped the perceptions of the audience and clients. This means that everyday interactions with these products by the general public could be seen as political acts, whether or not they are aware of them.⁸⁴ Frank Trentmann suggests that objects act as 'political symbols, vehicles of community [and are] ingredients of the public sphere', all of which could be signs to identify Cold War objects.⁸⁵ This also

⁷⁹ Farbøl, "Commemoration of a Cold War: The Politics of History and Heritage at Cold War Memory Sites in Denmark," p. 482. See also: Inge Hermann, "Cold War Heritage (and) Tourism: Exploring Heritage Processes Within Cold War Sites in Britain" (PhD University of Bedfordshire, 2012).

⁸⁰ Ian Strange and Ed Walley, "Cold War Heritage and the Conservation of Military Remains in Yorkshire," *International Journal of Heritage Studies* 13, no. 2 (2007): p. 159.

⁸¹ John Schofield, "Monuments and the Memories of War: Motivations for Preserving Military Sites in England," in *Matériel Culture: The Archaeology of Twentieth-Century Conflict*, ed. Colleen Beck, William Gray Johnson, and John Schofield (London: Routledge, 2003), p. 144.

⁸² Martin Daunton and Matthew Hilton, *The Politics of Consumption: Material Culture and Citizenship in Europe and America* (London: Bloomsbury Publishing, 2001). p. 13

⁸³ See: Ruth Oldenziel and Karin Zachmann, *Cold War Kitchen: Americanization, Technology and European Users* (Massachusetts: MIT Press, 2009).

⁸⁴ Daunton and Hilton, *The Politics of Consumption: Material Culture and Citizenship in Europe and America*, p. 13.

⁸⁵ Frank Trentmann, "Materiality in the Future of History: Things, Practices, and Politics," *Journal of British Studies* 48, no. 2 (2009): p. 299.

implies that 'Cold War' objects are potentially politically charged and may lead to difficulties when displaying them in museums.

In Germany, a country divided by the Cold War, material culture has become a significant part of the German Democratic Republic's legacy and has played a significant role in presenting the German-German difference of this period, with citizens using objects to preserve memories of their former lives.⁸⁶ This is particularly the case for East Germans who, through feelings of *Ostalgie* or nostalgia for the East, surged to preserve everyday Eastern items which quickly disappeared as the country unified.⁸⁷

Only few scholars have recognised the richness of the material culture that came from these places as important in representing the impact of the Cold War. There have been several studies of individual aspects of Cold War history which have brought elements of Cold War material culture to light. From a military perspective, Steven Leech explored former Cold War radar installations in Britain to understand what practises and relationships have developed around these sites and particularly what meanings and values have been assigned to these places and their related material culture.⁸⁸ Leech's research highlights the complexity of mediating Cold War heritage as shown by the range of responses he gathered from various people, including heritage professionals, enthusiasts and visitors who engaged with these sites.

In recognition of non-military aspects of the Cold War, historians such as Jane Pavitt, David Crowley, Susan Reid, and Paul Betts have focussed on the influence of the conflict on art and design.⁸⁹ Each focus on a defined domain such as fashion, posters,

⁸⁶ Paul Betts, "The Twilight of the Idols: East German Memory and Material Culture," *The Journal of Modern History* 72, no. 3 (2000): p. 739; Martin Blum, "Remaking the East German Past: Ostalgie, Identity, and Material Culture," *Journal of Popular Culture* 34, no. 3 (2000): p. 231; Paul Betts, *The Authority of Everyday Objects: A Cultural History of West German Industrial Design*, vol. 34 (California: University of California Press, 2004).

⁸⁷ Daphne Berdahl, "'(N) Ostalgie' for the Present: Memory, Longing, and East German Things," *Ethnos* 64, no. 2 (1999). In terms of East German material culture in museums see Charity Scribner, "Tender Rejection: The German Democratic Republic Goes to the Museum," *European Journal of English Studies* 4, no. 2 (2000).

⁸⁸ Steven Leech, "Echoes from the Recent Past: An Archaeological Ethnography of Historic Cold War Radar Sites in the U.K" (PhD University of Manchester, 2017).

⁸⁹ David Crowley and Jane Pavitt, *Cold War Modern: Design 1945-1970* (London: V&A Publishing, 2008); David Crowley, *Posters of the Cold War* (London: V&A Publishing, 2008); Jane Pavitt, *Fear and Fashion in the Cold War* (London: V&A Publishing, 2008); Susan Reid and David Crowley, *Style*

international exhibitions, and wider product design as demonstrated in Pavitt and Crowley's work on the V&A exhibition *Cold War Modern*. Taras Young's research into British civil defence publications including pamphlets, leaflets, and posters, brings together official and civilian responses to the Cold War and threat of nuclear weapons through print culture. Young acknowledges the illusive nature of Cold War material culture, describing: 'Like the radar stations and airfields and bunkers, these artefacts were there if you knew where to look, or how to see them.'⁹⁰ Jonathan Hogg's work picks up on these 'official and unofficial narratives' of the British Cold War experience from government and official perspectives- as seen in civil defence publications- and has gathered stories from people who experienced the Cold War first hand in their everyday lives.⁹¹

Where other studies of Cold War material culture, like those mentioned, have focused on specific domains such as the built environment, military collections and art and design, this original work highlights the nexus between the Cold War and materiality by bringing different pathways and journeys together.

Object Biographies

Historical and heritage research on the Cold War has only rarely made use of object biographical approaches, although these have been well established in heritage scholarship more generally. The cultural biography of an object suggests considering the birth, life and to some extent death of an object to gather a fuller picture of the history and the networks the object has curated and been involved in. Arjun Appadurai and Igor Kopytoff brought the concept of cultural biography to the fore in Appadurai's *The Social Life of Things*. Akin to a human biography, the aim is to go beyond the surface of the person or the object to understand the circumstances which brought them to their current position. Igor Kopytoff expanded on Appadurai's ideas and explored the 'social life' of objects, encouraging researchers to ask the same questions of objects as they would a person. He argues that the 'biographies of things can make salient what might otherwise remain obscure', emphasising that the study of objects

and Socialism: Modernity and Material Culture in Post-War Eastern Europe (Oxford: Berg, 2000); Betts, *The Authority of Everyday Objects: A Cultural History of West German Industrial Design*, 34.

⁹⁰ Taras Young, *Nuclear War in the U.K* (London: Four Corners, 2019), p. 7.

⁹¹ Hogg, *British Nuclear Culture: Official and Unofficial Narratives in the Long 20th Century*.

offers researchers a view of the longer-term history of an object.⁹² It is important that researchers remember when they encounter objects that its current state may not accurately represent its former state, whether through wear, alteration, or loss.⁹³

For Appadurai and Kopytoff there comes a point where an object's life comes to an end, and it is questioned for its usefulness when it enters a museum. However, there are several authors who challenge this view. In her examination of the biography of Napoleon's hat in German museums, Mary-Elizabeth Andrews makes the point that the meanings ascribed to highly valued or prized objects do not remain constant as they have the 'ability to stand in for multiple readings of past events' suggesting that objects can re-tell stories through various ideological and cultural frameworks.⁹⁴ This demonstrates that when an object enters the museum, its life does not become static. It enters a new phase or 'age' in its biography. Chris Gosden and Chantal Knowles highlight that 'objects are always in a state of becoming, and this is not just when produced and used in their original context, but once collected and housed in the museum.'⁹⁵ This emphasises how in the museum environment the object is not restrained but opened to new audiences and can continue to be appreciated as it would in other settings. An object's life does not end upon entering a museum, as Samuel Alberti suggests it is unwise to assume that 'their meanings are frozen once they join a collection' as museums are not static mausoleums 'but a dynamic, mutable entity where specimens were added and preserved, discarded, and destroyed.'⁹⁶

Another strand of research, especially that influenced by Actor-Network Theory (ANT) and Michel Foucault, have turned the perspective around and asked how objects have influenced people. Bruno Latour, John Law and Michel Callon developed the Actor-Network Theory which is a method of analysis which treats, 'everything in the social

⁹² Igor Kopytoff, "The Cultural Biography of Things: Commoditization as Process," in *The Social Life of Things: Commodities in Cultural Perspective*, ed. Arjun Appadurai (Cambridge: Cambridge University Press, 1988), p. 67.

⁹³ Thomas J Schlereth, "Material Culture and Cultural Research," in *Material Culture: A Research Guide*, ed. Kenneth L. Ames and Thomas J Schlereth (Kansas: University of Kansas Press, 1985), p. 9.

⁹⁴ Mary-Elizabeth Andrews, "'Totally Irreplaceable Objects': Tracing Value and Meaning in Collections Across Time," in *Assessment of Significance Interpretation- Implication- Reinterpretation*, ed. Regine Falkenburg and Thomas Jander (Berlin: Deutsches Historisches Museum, 2018), p. 64.

⁹⁵ Chris Gosden and Chantal Knowles, *Collecting Colonialism: Material culture and Colonial Change* (Abingdon: Routledge, 2001), p. 4.

⁹⁶ Samuel J. M. M. Alberti, "Objects and the Museum," *Isis* 96, no. 4 (2005): p. 257.

and natural worlds as a continuously generated effect of the webs of relations within which they are located', whereby it considers not only people and objects but also other relevant factors which could affect the whole network.⁹⁷ Patrick Joyce and Tony Bennett, for example, have explored the power of materiality, recognising the 'distinctive forms of agency...on the part of material forces' and questions how materials exercise power without having power.⁹⁸ Furthermore, Stephen Harold Riggins highlights: 'objects are a cause, a medium and a consequence of social relationships' and argues that artefacts can only really be viewed in connection with humans and are a way of keeping forgotten societies alive.⁹⁹

Authenticity and Value

Object biographical approaches involve engaging and building up the strand of research that has focused on authenticity and value. Exploring an object's biography means exploring the times when various people, contexts or environments shaped the past, present and future of an object. These connections to people and place are key in understanding how various meanings and layers of authenticity are ascribed to objects. Recent heritage research, inspired by findings from sociology and social anthropology, has emphasised how authenticity is not a stable and static quality that is ascribed to an object. This research has been interested in exploring how authenticity is made, remade and unmade in the relationships between objects and people and how that relationship is negotiated in the networks of relationships between objects, people, and places.¹⁰⁰

This approach means considering the actors and environments involved in an object's life over time. In this context, Annette Weiner has proposed that objects are 'inalienable possessions', which carry with them associations of their former owners

⁹⁷ John Law, "Actor Network Theory and Material Semiotics," in *The New Blackwell Companion to Social Theory*, ed. Bryan Turner (Chichester: Wiley-Blackwell, 2009), p. 141.

⁹⁸ Tony Bennett and Patrick Joyce, *Material Powers: Cultural Studies, History and the Material Turn*. (London: Routledge, 2010). p. 4.

⁹⁹ Stephen Harold Riggins, *The Socialness of Things: Essays on the Socio-Semiotics of Objects* (Berlin: Mouton de Gruyter, 1994), P. 1-2.

¹⁰⁰ Jones, "Negotiating Authentic Objects and Authentic Selves: Beyond the Deconstruction of Authenticity," p. 183.

even if they are exchanged or sold overtime.¹⁰¹ Siân Jones takes this idea further, suggesting the 'aura' of an object is influenced by all of the people and places that interact with the object, not only the owners.¹⁰² Tracing connections between objects, people and places adds intangible qualities to the objects that can be 'experienced as genuine, deep and truthful.'¹⁰³ This means that the perception of authenticity differs between those viewing the object, as what a curator deems authentic and valuable may not be to a visitor, which in turn effects the way a visitor engages with the object.¹⁰⁴

Research on authenticity has emphasised the ways in which people have perceived objects as authentic and relates to the value they ascribe to them. Value has different dimensions: the value of its use; the value specific people, especially their owners, ascribe to them; the creators or users of an object in comparison to museum professionals who lack personal connections or physical experience in using the object as intended. Value also refers to the 'social value' of material culture and alludes to the broader value of the object to society in terms of its communal value.¹⁰⁵ Social value also relates to people's sense of identity, belonging and memories that they attribute to the object.

Structure of the Argument

This thesis considers how the Cold War has been materialised in National Museums Scotland from a macro level, via a meso level to a micro level.¹⁰⁶ Each chapter

¹⁰¹ Annette B. Weiner, *Inalienable Possessions: The Paradox of Keeping-While Giving* (California: University of California Press, 1992).

¹⁰² Jones, "Negotiating Authentic Objects and Authentic Selves: Beyond the Deconstruction of Authenticity," p. 190.

¹⁰³ Siân Jones, "Unlocking Essences and Exploring Networks: Experiencing Authenticity in Heritage Education Settings," in *Sensitive Pasts: Questioning Heritage in Education. Making Sense of History*, ed. Carla Van Boxtel, Maria Grever, and Stephan Klein (Oxford: Berghahn Books, 2016), p. 131-32.

¹⁰⁴ Sheila Watson, "Why Do Emotions Matter in Museums and Heritage Sites?," in *Sensitive Pasts: Questioning Heritage in Education*, ed. Carla Van Boxtel, Maria Grever, and Stephan Klein (New York: Berghahn Books, 2016), p. 79-80.

¹⁰⁵ Siân Jones and Steven Leech, "Valuing the Historic Environment: A Critical Review of Existing Approaches to Social Value," *AHRC Cultural Value Report* (2015).

¹⁰⁶ This approach is inspired by Sasha Roseneil's approach to her study of the emergence of social movements. She suggests: 'social movement research should integrate analysis of macro-, meso-, and micro-level social processes, focusing both on the enabling and constraining aspects of social structures, and on individual and collective human agency in challenging and transforming them.' Sasha Roseneil, "Feminist Political Action: The Case of the Greenham Common Women's Peace Camp" (PhD London School of Economics, 1994), p. 35-36.

showcases an object or cluster of objects connected to a major theme of Cold War history and examines their object biography to highlight the points at which the Cold War becomes apparent at different times of their lives. These items are all connected to Scotland in some way, either in their creation, ownership, or operation in Scotland and all come from National Museums Scotland collections.¹⁰⁷ Each chapter will focus on how objects gain Cold War meanings and value at various stages of their lives. Using an object biography approach, I will use a range of primary sources coupled with oral testimonies to demonstrate the points at which 'Cold War' meanings become apparent in these object's lives.

On the macro level of the Cold War, the first chapter examines the military connections to the Armstrong-Whitworth Meteor aircraft. The Meteor began life as a trials aircraft for the Ministry of Supply, testing key pieces of radar equipment and acted as a 'chase aircraft' for Lightning and Canberra aircraft. As the Meteor transferred to the private electronics and engineering company Ferranti Limited, the Cold War connections to the aircraft continued as Ferranti became a world leader in avionics and the recipient of high-level defence contracts. Ferranti owned multiple production and test sites in Scotland and was a leading company in the Scottish technological industry throughout the Cold War period. There are much more obviously 'Cold War' examples of similar technologies within NMS collections such as the Vulcan bomber or the Blue Streak and Polaris missiles. However, I chose the Ferranti Meteor to demonstrate that Cold War technology has filtered into a wide range of aircraft and to highlight that this element of the Meteor's life has been so far unrecognised. This chapter explores how the meaning of the Meteor changes over time as it leaves its use-life to become a museum object on display at the National Museum of Flight. From an advanced piece of military technology capable of high airspeeds to becoming a stationary museum object, the Meteor is open to interpretation from museum staff, researchers, and museum visitors. However, it is unclear if these viewers regard the Meteor as a Cold War object or not.

¹⁰⁷ Michael Taylor, "What is in a 'National' Museum? The Challenges of Collecting Policies at the National Museum of Scotland," in *Museums and the Future of Collecting*, ed. Simon Knell (Aldershot: Ashgate, 1999), p. 121-2.

Chapter two takes the decommissioned Dounreay Fast Reactor (DFR) control room as a case study of the material legacy of civilian uses of nuclear energy and Cold War science and technology. The Dounreay Experimental Reactor Establishment (DERE) on the north coast of Scotland developed fast breeder reactor technology to produce electricity for civilian consumption. During the Cold War, the British Government encouraged the production of civilian nuclear energy to convince the public of the benefits of nuclear power stations rather than their perceived danger. In the absence of a hot war, nations competed on a scientific and technological level to develop the most advanced equipment and processes. The Dounreay Fast Reactor was part of these advanced scientific projects as the DFR was an experimental fast breeder reactor which aimed to produce more fuel than it began with by converting Uranium-238 into Plutonium-239. As an artefact the DFR control room held by NMS is unique in not only its journey to becoming a museum object but in the pivotal role it played in fast breeder technology. This chapter examines the DFR control room as it moves from being responsible for monitoring a nuclear reactor to being made redundant and decaying. In recognition of the emergence of nuclear heritage, Dounreay decided to preserve the DFR control room and other objects from the site by donating them to museums. The Cold War meanings ascribed to the DFR control room vary between the actors who have been involved with the object over its lifetime. NMS holds various items connected to Dounreay that are on display and in storage. However, their connections to the Cold War remain absent.

The third chapter examines the contents of a Royal Observer Corps underground monitoring post which was used in preparation for and to monitor a nuclear attack. As a uniformed civilian organisation, the ROC sits between a military response to a nuclear attack and an emergency service tasked with warning local people of an incoming attack. The underground monitoring posts scattered around the country were built for Observers to house and operate specialist equipment to monitor and report nuclear fallout. They also had to cater for the human needs of the Observers during a period of unrest. The objects used in these posts are representative of the preparedness and civil defence measures created to increase the chances of survival during an attack. The active lives of these objects were ironically used during a period of inactivity. Fortunately, these objects were not required in the scenarios in which they were designed. Since the ROC stand-down in 1991, there has been a surge in efforts

to preserve these objects and to restore monitoring posts as Cold War heritage sites. As movable objects, the contents of posts now appear in museums and private collections. The National Museum of Flight holds almost the full contents of an ROC post, donated from the Edinburgh Group Head Quarters shortly after stand-down. This chapter compares the objects held in museum storage and those in underground monitoring posts which have been restored by ex-Observers and enthusiasts. The approach to displaying, collecting, and restoring ROC material culture differs between institutional museum practices at NMS in comparison to amateur restorers and their in-situ heritage practices. Furthermore, I examine how the 'Cold War' meanings and values that are ascribed to these objects differ between museum professionals and those former Observers who know these objects intimately.

The Campaign for Nuclear Disarmament emerged in the late 1950s partly in response to such mobilisation and to protest against the British ownership and testing of nuclear weapons. The fourth chapter of this thesis explores the biographies of three objects selected from the collection of Scottish CND campaigner Kate Barnet; these include CND logo stickers, a leaflet for her pram stall and a rattle bottle used on the Peace March Scotland 1982. Although this collection is full of leaflets, post cards and posters that were commercially produced and widely distributed, I selected these particular objects as each represent a specific moment or period of Barnet's campaigning and because they are emblematic of the personal and hand-made nature of the collection. Through these objects I explore the creation of 'disobedient' protest objects and their uses as material evidence of social movements.¹⁰⁸ The visual symbolism and creativity of these objects connect them directly to contemporary issues from the Cold War period and act as tangible examples of resistance to government policies on nuclear weapons. As these 'disobedient' objects enter the museum they are to some extent tamed as they become viewed less as protest objects and more as objects of art.

The final chapter of this thesis examines a collection of Soviet and Space Race souvenirs to represent the Cold War in the British home. The Space Race sparked by the USSR's launch of Sputnik in 1957 brought fascination and fear into the homes of

¹⁰⁸ Catherine Flood and Gavin Grindon, *Disobedient Objects* (London: V&A Publishing, 2014).

civilians around the world. This chapter focusses on a selection of Space Race themed *znachki* badges and souvenirs which were popular to collect in the USSR during the Cold War and have since become popular to collect around the world. These badges are rich in Soviet and Space Race symbolism and show Soviet pride for their achievements in space technology. This collection was donated to NMS by Callum Russell who purchased these souvenirs to rekindle his childhood fascination with space. The biography of these badges transition from being commodities to becoming museum artefacts. This chapter explores at what points Cold War meanings become apparent in the lives of these souvenirs and examines the meanings different actors ascribe to them over time.

Contribution to Research

This original research demonstrates the benefits of applying an object biography approach to Cold War heritage movable objects. Using this approach, I have generated a wealth of empirical material in relation to the National Museums Scotland collection. I have shown how Cold War meanings attached to objects are influenced by the people and places associated with the object throughout its life, from creation to the museum environment. This approach could be taken to examine the extent Cold War authenticity and values have been ascribed to other objects within NMS or in other museums. Furthermore, this research brings attention to the material legacy of the Cold War in Scotland from a global to local level.

Chapter 1: Military Muscle – The Ferranti Meteor Aircraft

The British scientific and technological community were significantly impacted by the influence of the Cold War as the increasing focus on building up weapons caches and developing technology to create advanced and accurate weaponry brought Cold War issues to the forefront. Companies like Ferranti Ltd produced a wide range of avionic equipment for military purposes, yet their Cold War connections remain unclear and unacknowledged. Many examples of advanced weaponry and technology are present in museum collections. However, they are rarely recognised for their importance in key Cold War ‘campaigns’ for scientific superiority, which were as key as any hot war during this period.¹

Airpower in particular symbolised ‘technological mastery, money, and influence’ as it was a crucial component of global defence policies for the West.² Furthermore, the aviation industry had the capacity to produce both military and civilian outputs, meaning aviation intertwined business and politics. In Britain during the mid-1950s, the aviation industry boomed, as the British Government and private companies provided significant expenditure to encourage new developments. By 1959, the aviation industry employed 16% of qualified scientists and engineers working in manufacturing research and development.³ As aircraft became increasingly advanced and expensive to design, major firms sub-contracted work to other companies who were specialists, especially in the electronics field to companies such as English Electric and Ferranti.⁴ These lucrative contracts brought significant business to Scotland in particular and were important in pushing the development of technology to become even more advanced.⁵ As a result, Scotland became a prime location for industry, supplying and creating specialist equipment for Cold War related military weapons and vehicles.

¹ Robert Bud and Philip Gummett, eds., *Cold War, Hot Science: Applied Research in Britain's Defence Laboratories, 1945-1990* (Amsterdam: Harwood Academic Publishers 1999), p. 25.

² Jeffrey A Engel, *Cold War at 30,000 Feet: The Anglo-American Fight for Aviation Supremacy* (Massachusetts: Harvard University Press, 2009), p. 12.

³ David Edgerton, *England and the Aeroplane: An Essay on a Militant and Technological Nation* (Basingstoke: Macmillan Publishers Ltd, 1991), p. 91-92.

⁴ Edgerton, *England and the Aeroplane: An Essay on a Militant and Technological Nation*, p. 95-96.

⁵ *Ferranti: 50 Years in Scotland*, (Edinburgh: GEC Marconi Avionics Limited, 1993), p. 13.

Museums have given little attention to scientific and technologically advanced equipment and products created in Scotland for Cold War purposes, despite many museums having a wide range of relevant objects within their collections. Businesses such as Ferranti Ltd, Hewlett-Packard and IBM had a large presence in Scotland and were responsible for researching, developing, and manufacturing components which appeared in military facilities and were fitted to specialist defensive vehicles and aircraft.⁶ The Edinburgh-based company Ferranti Ltd donated a large selection of objects to National Museums Scotland over a number of years. These donations included radar sets and avionics equipment as well as the Ferranti Meteor aircraft. These advanced pieces of technological equipment are representative of the international Cold War competition, where nations aimed to be the most technologically advanced. However, the Ferranti collection has not been examined in this light, despite representing Cold War era technology and military connections. Although each of these items were not used on a front line or in action, they are still valuable as Cold War objects as without their involvement in testing and development, the final products used in weapons and defences would not exist.



Fig. 1.1: G-ARCX Meteor (left) at Ferranti Flying Unit, Turnhouse, ©National Museums Scotland.

This chapter will focus on the Armstrong-Whitworth Meteor, donated by Ferranti Ltd to NMS in 1973 after the aircraft became redundant (Fig. 1.1). I will take this aircraft as a case study of the material legacy of Scottish Cold War era technological industries. Following the object biography of the Meteor held at the National Museum of Flight (NMoF), I will highlight the life journey of the aircraft from original

⁶ Royle, *Facing the Bear: Scotland and the Cold War*, p. 182. Spaven, *Fortress Scotland: A Guide to the Military Presence*, p. 4.

production, through to its use-life and to eventually becoming a museum object to demonstrate the points at which the Cold War becomes a part of its life. I will also explore how the meaning of the Ferranti Meteor changes over time, particularly in terms of the actors and environments it has been influenced by and what this means for the value and authenticity people ascribe to the aircraft. I will begin by demonstrating how Ferranti became to be a key player in research and development during this period and how the company used museum donations to preserve the heritage and achievements of Ferranti.

Ferranti Limited

Ferranti Limited came to be one of the most renowned companies producing avionics, electronics, and computing during the Cold War. During the Second World War, the company produced a range of devices such as thermionic valves, avionics, and naval equipment at its factory in Hollinwood, Oldham and established the Crewe Toll factory in Edinburgh to produce gyro-gun scopes in 1943.⁷ The Edinburgh factory remained open after the Second World War and eventually become the second largest industrial employer in Edinburgh. Throughout the 1950s, the Edinburgh branch of Ferranti expanded and became a part of a collaborative scheme with the Ministry of Supply and the Scottish Council to increase electronics research in Scotland.⁸ Ferranti was responsible for the development of a number of notable pieces of avionics including AI-23 radar used in the Lightning, Blue Parrot strike radar, Inertial Navigation and Attack System (INAS) for the Harrier and Phantom jets as well as terrain-following radar for the ill-fated TSR-2 and Concorde.⁹ As leaders in the field of onboard radar and inertial guidance systems, 'most of the jet-age aircraft supplied to the RAF were equipped with Ferranti avionics.'¹⁰

Ferranti engineers tested and improved new equipment on board the aircraft they were destined for. Initially, the Ministry of Supply loaned Ferranti several aircraft, such as a Dakota and a Sea Fury, until the Ferranti Flying Unit was established in

⁷ Science Museum Group, 'Ferranti Ltd', [collection.sciencemuseumgroup.org.uk](https://collection.sciencemuseumgroup.org.uk/people/ap1285/ferranti-ltd), <https://collection.sciencemuseumgroup.org.uk/people/ap1285/ferranti-ltd>, Accessed: 16 August 2020.

⁸ *Ferranti: 50 Years in Scotland*, p. 13.

⁹ *Ferranti in Scotland*, (Edinburgh: Ferranti, 1974), p. 27 and p. 31.

¹⁰ Royle, *Facing the Bear: Scotland and the Cold War*, p. 184.

1952 at Turnhouse (Edinburgh Airport), with an accompanying Trials and Installations Department created at Crewe Toll.¹¹ In 1956, a dedicated Ferranti hangar opened at Turnhouse with permanent pilots and engineering support for trials provided by relevant departments such as Navigation, Electro-Optics or Radar with these engineers flying as Flight Test Engineers or Observers.¹² Over its lifetime, the Ferranti Flying Unit used a fleet of thirty-four aircraft including several Gloster Meteors, English Electric Canberras and a Blackburn Buccaneer.¹³ All these planes were loaned from the Ministry of Defence, apart from the Armstrong-Whitworth Meteor G-ARCX which Ferranti owned. Before exploring the biography of the Ferranti Meteor at NMS, it is worth exploring the presence of other Ferranti material in museums across Britain.

Despite multiple company mergers and amalgamations, there has always been an effort by Ferranti to preserve key inventions for posterity. Traditionally donating expensive and significant objects or collections to a museum legitimises the significance of the donor and offers them a level of prestige. This attention to preservation could be seen as a valid way for the company to enhance their public relations profile and to positively contribute to society through industrial heritage. Despite a lack of existing literature regarding the motivations of technology companies donating materials to museums, the presence of significant scientific objects and financial sponsorship from these companies to museums demonstrates how they clearly see the benefits of being associated with museums.¹⁴ Samuel Alberti suggests some reasons why companies might donate valuable objects to museums including ‘a genuine wish to do good, to preserve something interesting for posterity, to educate or entertain present and future museum audiences’ but also for legacy building purposes or, on a practical note, to clear space in their own properties.¹⁵

¹¹ Keith McCloskey, *Edinburgh Airport: A History* (Stroud: Tempus, 2006), p. 163.

¹² Email correspondence between Sarah Harper and Alastair Bennett, 27 July 2020.

¹³ McCloskey, *Edinburgh Airport: A History*, p. 159.

¹⁴ Some museums receive corporate financial support. With regard to object donations or loans curators normally take editorial control and are not influenced by the sponsor. However, curators may have conversations with companies in relation to specific objects which might subsequently later lead to financial support. Email correspondence between Sarah Harper and Aileen Stone, Head of Corporate Relationships at a large UK museum, 28 October 2022.

¹⁵ Samuel J. M. M. Alberti, *Curious Devices and Mighty Machines: Exploring Science Museums* (London: Reaktion, 2022), p. 54.

Ferranti has donated a range of objects to British museums such as aircraft and vehicles as well as radar sets, avionics prototypes and technical drawings. The Science and Industry Museum in Manchester holds the largest collection of Ferranti objects and documentation, acquired by the museum in 1995.¹⁶ The Glasgow Museum of Transport received the donation of a Stonefield truck modified by Ferranti to demonstrate PADS (Position and Azimuth Determining System) and inertial survey equipment.¹⁷ This was gifted as it had fulfilled its purpose and was no longer required, with Ferranti justifying the donation by saying: 'it was felt that the presentation to the museum would be of value as part of the industrial heritage of Scotland', this same sentiment may have been felt when donating the Meteor to NMS.¹⁸

Ferranti products are particularly visible in aviation museums as their equipment featured in most RAF aircraft throughout the Cold War period. The North East Land, Sea and Air Museum has a direct link to the Ferranti Flying Unit as it holds the recovered fuselage of the WD790 Meteor which assisted in the AI-23 radar development trials at Turnhouse in 1958.¹⁹ Similarly, Dumfries and Galloway Aviation Museum acquired its English-Electric Lightning from a plinth that had been displayed on outside Ferranti's South Gyle factory.²⁰

Each of these museums and archives have received Ferranti objects in different ways, but for Ferranti all of these donations are with the intention to preserve their heritage and ensure their legacy of technological innovation during the Cold War period is represented. Leonardo – the current successor of Ferranti describes the achievements of the company on their website over time. During the 1946 to 1987 period, it highlights: 'electronic warfare capability gathers pace, with close collaboration with the Armed Forces, a relationship that continues to this day', but

¹⁶ Email correspondence between Sarah Harper and Jane Hinch, Science and Industry Museum Archives Manager, 30 July 2020.

¹⁷ Glasgow Museums, 'Truck/ Stonefield P3000 4x4 Truck, 1979', [collections.glasgowmuseums.com, http://collections.glasgowmuseums.com/mwebcgi/mweb?request=record;id=32176;type=101](http://collections.glasgowmuseums.com/mwebcgi/mweb?request=record;id=32176;type=101), Accessed: 19 August 2020.

¹⁸ *Ferranti: 50 Years in Scotland*, p. 60. Unfortunately, there is no written evidence explaining why Ferranti Limited chose to donate objects to NMS or other museums.

¹⁹ Email correspondence between Sarah Harper and Daniel Chalk, Chairman of the North East Land, Sea and Air Museum, 29 July 2020.

²⁰ Dumfries and Galloway Aviation Museum, 'English Electric Lightning F53', [dumfriesaviationmuseum.com, http://www.dumfriesaviationmuseum.com/lightning/](http://www.dumfriesaviationmuseum.com/lightning/), Accessed: 19 August 2020.

does not specifically use the term 'Cold War' to describe this period.²¹ This somewhat distances Ferranti and Leonardo from war but highlights their achievements in contributing to the field of electronics during this period.

The preservation of Ferranti's heritage has continued throughout several company mergers, as there has been a continuation of donations to NMS.²² Ferranti heritage was important to their company identity as when it became absorbed into other organisations, they wanted to ensure their company history was not forgotten. This is comparable to regimental heritage as even when regiments are merged or renamed, it is still important to preserve the heritage of the former and present regiments both separately and together as these amalgamations are key in the new regiments' biography. This is seen in the Museum of the Royal Scots (The Royal Regiment) and the Royal Regiment of Scotland as these regiments have merged over time.²³

The relationship between Ferranti and the National Museum of Flight began with the donation of the Armstrong Whitworth Meteor in 1973 and continues to the present day. The Ferranti collection at NMS is comprised of advanced aviation technology such as gyroscopes, radar sets such as the AI24, a Thermal Imaging Airborne Laser Designator (TIALD) pod and an Atlas computer. Euan Green, the Assistant Curator of Transport, described the importance of maintaining a connection with the company: 'it's a relationship I was keen to nurture because there is ... certain things I'd like to acquire now but we can't because they're top secret', implying that these 'things' could potentially be donated in future if a healthy relationship is maintained between the museum and Leonardo.²⁴ Euan's collections strategy is in line with NMS' Collections Development Strategy where staff are encouraged to cultivate 'relationships with individuals or organisations leading to gifts', emphasising the value not only in the potential acquisitions but also the gifting relationship itself.²⁵

²¹ Leonardo, 'The Era of the Jet Engine', uk.leonardocompany.com,

<https://uk.leonardocompany.com/en/about-us/heritage>, Accessed: 23 February 2022.

²² Mark Smith, *Innovation And Endeavor 75 Years Of Leonardo Heritage In Edinburgh* (Edinburgh: 3-56 Media Ltd, 2018), p. 132.

²³ Edinburgh Castle, 'Regimental Museums', edinburghcastle.scot,

<https://www.edinburghcastle.scot/see-and-do/highlights/regimental-museums>, Accessed: 16 February 2022.

²⁴ Euan Green, interviewed by Sarah Harper, 30 July 2020.

²⁵ National Museums Scotland, 'Collections Development Strategy, 2017-2022', nms.ac.uk, <https://www.nms.ac.uk/media/1154769/collections-development-strategy-2017-2022-pdf-version.pdf>, Accessed: 14 April 2022.

These relationships help to demonstrate how the authenticity of these objects is negotiated through these networks of relationships and shows how objects continue to carry associations with their former owners every time they are exchanged between people.²⁶

Euan's statement also highlights the influence of the curator and their personal motivations in acquiring particular objects relevant to their interests. This relationship is mutually beneficial as the museum can continue telling the story of aviation with the bonus of specific technology produced in Edinburgh, and Leonardo are gaining positive publicity and contributing to the aviation heritage community. The Meteor aircraft is the largest object Ferranti donated to the museum. The Ferranti Meteor harbours different meanings for the multiple actors who came into its life over time. However, it is unclear if these people ascribe Cold War meanings to the aircraft.

Life of the Ferranti Meteor

The Gloster Aircraft Company began prototyping the twin engine Meteor in 1942 and created several successful variants, some of which were used by the RAF from 1944.²⁷ Armstrong-Whitworth, based in the Midlands, produced 1050 Meteors including several night fighter variations (NF.11, 12, 13 and 14).²⁸ The Meteor's elongated nose was utilised to carry advanced radar, with Hispano cannons under the wings. These aircraft were especially made in response to the threats posed by the Soviet Union and satellite states who were rapidly re-equipping their air forces with jets after the Second World War.²⁹

The Meteor (constructor's number AW2163) built by Armstrong-Whitworth Aircraft Ltd as WM261 was completed on 18 March 1953 in Coventry as a NF.11. The constructor's number attributed to the Meteor is unique, meaning that it differentiates

²⁶ Annette B. Weiner, "Cultural Difference and the Density of Objects," *American Ethnologist* 21, no. 2 (1994): p. 394.

²⁷ BAE Systems, 'Gloster Meteor', baesystems.com, <https://www.baesystems.com/en-uk/heritage/gloster-meteor>, Accessed: 17 August 2020.

²⁸ BAE Systems, 'Gloster Meteor', baesystems.com, <https://www.baesystems.com/en-uk/heritage/gloster-meteor>, Accessed: 17 August 2020.

²⁹ Royal Air Force Museum, 'Armstrong Whitworth Meteor NF14', rafmuseum.org.uk, <https://www.rafmuseum.org.uk/research/collections/armstrong-whitworth-meteor-nf14/>, Accessed: 17 August 2020.

this Meteor from other Meteors produced at the same time. This aircraft was originally produced in the second batch of Armstrong-Whitworth's last NF.11 contract from the Ministry of Supply, but it was retained for the trials of a new clear-view, sliding canopy to replace a heavy, side-hinging canopy fitted on all other two-seat Meteors, which converted this to a NF.14 version.³⁰

This Meteor carried out eleven tests in the blower tunnel at Boscombe Down and two in the air to experiment with this version of the canopy.³¹ On one of the air trials, 'at 135 knots the hood rose to a vertical position soon after release before swinging up and over the fin. At 220 knots it was whipped violently from its mounting, disintegrating in a matter of 0.32 seconds.'³² After this incident, the front half of the hood was strengthened. This account highlights how important this specific Meteor was for the development of other Meteors and other aircraft using this type of canopy.

The WM261 was the first NF.14 ever flown, piloted by Flt Lt W. H. Else on 23 October 1953.³³ Being the first ever NF.14 flown makes this Meteor even more distinctive and adds another layer of authenticity for aviation enthusiasts who value these specific and unique details. Unlike other Meteors, this aircraft had all service equipment removed and there was no radar equipment inside to allow the Ministry of Supply to insert their own equipment for test purposes.³⁴ Visually, the Meteor was adorned with the RAF roundel on the tail and 'adopted the wartime scheme of Medium Sea Grey overall with a disruptive camouflage pattern of Dark Green on the upper surfaces' with the nose cone painted black on top and grey underneath.³⁵

The Ministry of Supply (later Ministry of Defence) selected this Meteor for airborne equipment test flying, where it regularly acted as a 'chase aircraft' on Lightning and Canberra test programmes at BAC Warton.³⁶ This aircraft was regularly used for taking air to air photography of other aircraft and was used in equipment trials, for

³⁰ Barry Jones, *Gloster Meteor* (Marlborough: Crowood, 1998), p. 161.

³¹ Edward Shacklady, *The Gloster Meteor. [With Illustrations.]* (London: Macdonald & Co., 1962), p. 102.

³² Shacklady, *The Gloster Meteor. [With Illustrations.]*, p. 102.

³³ Chaz Bowyer, *Gloster Meteor* (London: Ian Allan, 1985), p. 63.

³⁴ Richard A. Franks, *The Gloster/A.W. Meteor: A Detailed Guide to Britain's First Jet Fighter* (Bedford: Valiant Wings Publishing Ltd, 2019), p. 120.

³⁵ Franks, *The Gloster/A.W. Meteor: A Detailed Guide to Britain's First Jet Fighter*, p. 120.

³⁶ *Ferranti News*, 'To Fame- and to Fortune', October 1973, p. 11, National Library of Scotland, DJ.I.417.

example, in the Blue Jay (later known as Firestreak) air to air heat seeking missile trials in October 1958.³⁷ This is the point at which the Cold War is most closely associated with the Meteor as it is directly involved in developing weaponry technology, which would have been utilised in a time of active combat.

In December 1959, the RAF and the Ministry of Supply released the Meteor and put it up for sale.³⁸ The Ministry of Supply transferred the WM261 Meteor from BAC Warton to Ferranti in September 1960, where it began its role as part of the Ferranti Flying Unit's fleet of aircraft in Edinburgh (Fig. 1.2). The Meteor was used to test the AIRPASS II radar proposed for export to Switzerland.³⁹ This trials period of the Meteor was short-lived as Ferranti needed a high-speed company communications aircraft to replace their Dakota TS423.⁴⁰ As a result, the Ferranti Meteor was registered on the Civil Aviation Authority register as G-ARCX⁴¹, and was at one time the only civilian-registered Meteor in Britain.⁴² Being a civilian registered aircraft offered the added advantage of being available for private-venture equipment trials, giving Ferranti an additional revenue stream from the Meteor.⁴³ This is a key stage in the Meteor's life as it has both military and civilian experiences. Although the military elements are not connected directly to active conflict, arguably being a test guinea pig for technologies which were designed for combat purposes does give the Meteor military connotations. Furthermore, this same argument can be made for the other pieces of Ferranti equipment donated to the museum, as each prototype and finished product were developed with the aim of providing military aircraft with the most advanced and accurate technology to ensure they could efficiently neutralise an enemy threat. Similarly, this contributes to the argument that the Cold War was not as peaceful as it might have seemed and highlights the extent of efforts behind the scenes to prepare for a hot war.

³⁷ Document from Trevor Stone, compiled from Aircraft Movement forms 78 and Ministry of Supply Air Fleet AF.60 records, now held by the RAF Museum, 6 September 2018.

³⁸ Document from Trevor Stone, compiled from Aircraft Movement forms 78 and Ministry of Supply Air Fleet AF.60 records, now held by the RAF Museum, 6 September 2018.

³⁹ *Ferranti News*, 'To Fame- and to Fortune', October 1973, p. 11, National Library of Scotland, DJ.I.417.

⁴⁰ Jones, *Gloster Meteor*, p. 162.

⁴¹ UK Register of Civil Aircraft, 'G-ARCX', [caa.co.uk, https://cwsprduksumbraco.blob.core.windows.net/g-info/HistoricalLedger/G-ARCX.pdf](https://cwsprduksumbraco.blob.core.windows.net/g-info/HistoricalLedger/G-ARCX.pdf), Accessed: 17 August 2020.

⁴² *Ferranti: 50 Years in Scotland*, p. 40.

⁴³ Jones, *Gloster Meteor*, p. 162.

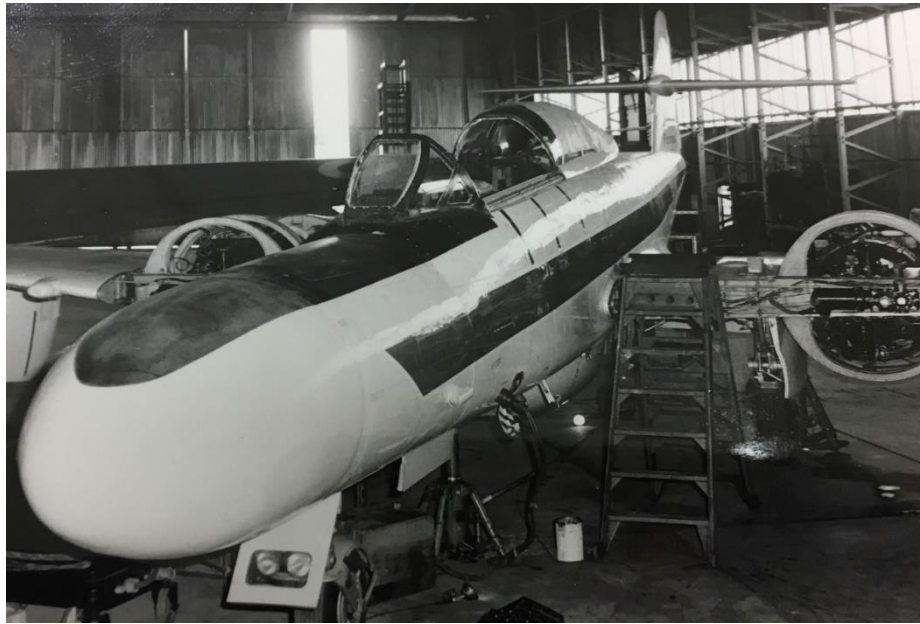


Fig. 1.2: G-ARCX Meteor in a hangar at Turnhouse. ©National Museums Scotland.

By the mid-1960s, due to economic constraints and the reduction of the Ferranti Flying Unit to just two pilots, the G-ARCX was rarely used. The Meteor mainly flew as the company 'hack' or taxi shuttling Ferranti staff at high speed between test sites at BAC Warton and RAE West Freugh.⁴⁴ John Pascoe-Watson, a former Ferranti test pilot, recalled the drive for the acquisition of the Meteor was for the pilots to have an aircraft on which they could maintain flying currency.⁴⁵ As it was expensive to fly a trials aircraft outwith scheduled tests, there was no other aircraft for pilots to practise exercises such as stalling or engine failure.

The Meteor was a key aircraft in Ferranti's fleet which stood out from the other Meteors and had an element of individuality that the other aircraft did not have. The G-ARCX was painted in white with a red stripe from nose to tail. There is evidence that its crews chose the nicknames 'Toothpaste Aeroplane'⁴⁶ or 'Mentadent' due to the resemblance to the toothpaste brand.⁴⁷ These details are important in the biography of the Meteor as they highlight how people have interacted with the Meteor at different points of its life and the kind of relationships it had. These pilots

⁴⁴ *Ferranti News*, 'To Fame- and to Fortune', October 1973, p. 11, National Library of Scotland, DJ.I.417.

⁴⁵ John Pascoe-Watson, *Laughter-Silvered Wings* (London: Newsstand, 2009). p.216

⁴⁶ *Ferranti News*, 'To Fame- and to Fortune', October 1973, p. 11, National Library of Scotland, DJ.I.417.

⁴⁷ McCloskey, *Edinburgh Airport: A History*, p. 169.

and engineers treated the aircraft colloquially and had given it a nickname. Former test pilot Alastair Bennett, however, only recalls hearing the Meteor referred to as 'Garcks', emulating the sound of the civilian register number G-ARCX.⁴⁸ These colloquial meanings are rare to find as they are unofficial and adopted names among those who worked closely with the Meteor. This contrasts with the museum staff and visitors who would not be aware of these names and instead have a more formal view of the aircraft.

The various names and numbers assigned to the Meteor exemplify how the aircraft has multiple meanings depending on who is viewing it and in what environment. For example, as those responsible for the existence of the Meteor, the workers at Armstrong-Whitworth would feel a sense of achievement in completing the Ministry of Supply's contract and witnessing the aircraft successfully flying. Furthermore, these Armstrong-Whitworth employees and the engineers and pilots who subsequently worked with the Meteor at various points in their lives would also feel a personal connection to the aircraft. Having worked so closely with the aircraft, the engineers and pilots who worked on the Meteor will have the most intimate knowledge of the technology used in the aircraft as well as having memories of the Meteor prior to its current pristine museum condition.

The Meteor began its active life as an experimental aircraft on an RAF airfield where engineers and pilots viewed it as a piece of equipment to test their theories and new hardware. Through the connection to the Ministry of Supply and the RAF the Meteor is assigned the serial number WM261, transforming this Meteor into part of a large fleet of other Meteors destined for military service in various capacities. The Meteor could also have been utilised for further military activity and introduced to front line service. This is also the point at which the politics of the Cold War became discretely incorporated into the object via defence contracts issued by the government to build these advanced aircraft. These contracts were proposed on the basis of there being a need to ensure Britain was prepared in the event of a war and had access to the most advanced technologies available. There was an awareness among Ferranti employees that their work was innovative and making significant technological strides, and that it was ultimately for Cold War purposes. Ferranti employees such

⁴⁸ Flyer Forum, 'Ferranti Flying Unit – Turnhouse', forums.flyer.co.uk, <https://forums.flyer.co.uk/viewtopic.php?t=116196>, Accessed: 23 August 2020.

as Alastair Bennett did recognise the Cold War connections, commenting: ‘all these things are undoubtedly Cold War objects as that is the reason they were created’ and companies like Ferranti were there to fulfil ‘the need to continuously update them to keep up in the race.’⁴⁹ This confirms the inextricable links between Ferranti products and the Cold War.

The transfer to a civilian role removed the Meteor from being directly a part of Cold War defences, as it became more of a witness to new developments at Ferranti rather than being actively involved in them. At this point the Meteor is known as G-ARCX or its other colloquial nicknames from pilots flying the aircraft. The civilian life at Ferranti for the Meteor was undramatic and saw the aircraft transition from a Cold War jet to a low-key existence, until the opportunity to become a museum object arose.

After several years of minimal use, the Meteor’s last flight was on 22 June 1968, as part of the Edinburgh Airshow, where the aircraft performed to an enthusiastic crowd of 35,000 spectators.⁵⁰ Ferranti’s Chief Test Pilot, Len Houston, and Chief Engineer, Tom McIlwraith piloted the Meteor’s final flight for 10 minutes with aerobatic movements restricted by insurance conditions.⁵¹ After this final appearance, the Meteor remained in storage with a mere 364 hours flown. This new, uncertain phase of the aircraft’s life saw it removed from regular involvement with the Ferranti Flying Unit pilots and staff and left it with an indeterminate future. Ferranti placed the redundant Meteor up for sale as it was no longer required.⁵²

Active to Artefact

Due to the inactivity and redundancy of the Meteor to the Ferranti Flying Unit, the G-ARCX remained in storage as no suitable buyers were found. As a consequence, Ferranti reconsidered the fate of the aircraft and decided to donate it to the Royal Scottish Museum (now National Museums Scotland).⁵³ A telephone message

⁴⁹ Email correspondence between Sarah Harper and Alastair Bennett, 27 July 2020.

⁵⁰ *Ferranti News*, ‘To Fame- and to Fortune’, October 1973, p. 11, National Library of Scotland, DJ.I.417.

⁵¹ John Pascoe-Watson, draft Ferranti Flying Unit History manuscript, found at National Museum of Flight.

⁵² Michael I. Draper, *Shadows: Airlift and Airwar in Biafra and Nigeria, 1967-1970* (Aldershot: Hikoki, 1999), p. 236.

⁵³ *Ferranti: 50 Years in Scotland*, p. 40.

scribbled on a scrap piece of paper dated 5 November 1971, found among the 'Meteor G-ARCX' folder at the National Museum of Flight reads: 'Mr Tom D Mcllwraith, Prototype Meteor 14. Ferranti Turnhouse, 334 3324. First Civil Meteor.'⁵⁴

This piece of paper and its brief message potentially documents the first correspondence between Ferranti and the Royal Scottish Museum (RSM) regarding the donation of the Meteor. This message was for Don Storer, Assistant Keeper of Technology, who later liaised with Tom Mcllwraith, Ferranti's Chief Engineer, to arrange the transfer of the Meteor to the museum. Mcllwraith had personal attachment to this aircraft, as he regularly flew the Meteor and piloted its final flight.

The range of documents related to the establishment of the National Museum of Flight highlights the relationship between Mcllwraith and Storer. Storer was a founding member of the Aviation Preservation Society Scotland (APSS) which helped to establish the Museum of Flight.⁵⁵ Prior to the new aviation museum officially opening in July 1975, Storer conducted tours for specially invited guests and groups including the Ferranti Aerospace Club and the Ferranti Foreman's Association.⁵⁶ Mcllwraith and Storer were on friendly terms as Mcllwraith's name appears on a list of visitors expected to visit the site on 1 December 1973, where invitees saw the newly acquired Meteor on display. Correspondence between Storer and Mcllwraith continued between the initial phone call in November 1971 and April 1973 when Storer received a letter from Mcllwraith which noted: 'Further to our recent discussion of the [gift of the] above aircraft to your Museum of Flight we have now received the approval from MoD Directorate of Sales Supply.'⁵⁷ This letter stated this donation was on the conditional basis that the aircraft would no longer fly and any future sale or transfer must receive approval from the Ministry of Defence.⁵⁸

The caveat that any transfer of the Meteor required MoD approval is key to the biography of the G-ARCX Meteor as this saved the aircraft from becoming an arms-carrying aircraft destined for war-torn Biafra. Proxy wars like the Nigerian Civil War

⁵⁴ Note dated 5 November 1971, 'G-ARCX Meteor', Building 25 Office, National Museum of Flight.

⁵⁵ As part of the rebranding of National Museums Scotland in 2006, the name of the Museum of Flight was changed to the National Museum of Flight to provide consistent branding across the organisation.

⁵⁶ Attendance lists for visits to the Museum of Flight, 1974.

⁵⁷ Letter to Don Storer from T.D Mcllwraith, 20 April 1973, 'G-ARCX Meteor', Building 25 Office, National Museum of Flight.

⁵⁸ Letter to Don Storer from T.D Mcllwraith, 20 April 1973, 'G-ARCX Meteor', Building 25 Office, National Museum of Flight.

broke out in several parts of Africa as African nations began to separate from their European colonisers.⁵⁹ Eastern and Western nations offered financial and military support to fighting nations with the intention to influence them towards supporting Capitalist or Communist regimes and was a means for competing nations to play out battles away from their home nations.⁶⁰

Prior to the arrangement between Ferranti and the museum, on 18 September 1969, Anthony Paris of P.B Export Sales Ltd contacted Ferranti to negotiate a price for the G-ARCX.⁶¹ Ferranti offered Paris the aircraft for £3500 plus £1,500 for the modifications that Ferranti had made and £3000 for the large number of spare parts available. Anthony Paris accepted this deal. However, due to the MoD's suspicions regarding Paris' purchases of two other Meteor aircraft – G-ASLW and G-AXNE - and their breaches in their temporary export permits, the sale of the G-ARCX was refused.⁶²

The fate of the G-ASLW and the G-AXNE alludes to the potential future of the G-ARCX. The 'Meteor Job' began in 1969 with Tony Osborne, owner of the British Historic Aircraft Museum at Southend, purchasing the G-ASLW from Rolls Royce.⁶³ As a supporter of the Biafran people involved in the Nigerian civil war, Osborne, with the help of Anthony Paris, intended to fly arms to the region via the Biafran airbase in Lagos. He did this under the guise of the 'Enterprise Films' company which was part of a ruse to convince the British authorities it was to participate in a film about the Korean War. The two Meteor planes had all reference to the RAF removed and replaced with Enterprise Films written in large black writing on the side of the plane. This mission ended in vain as neither Meteor landed in Biafra; the G-ASLW crashed into the Atlantic Ocean and the British authorities halted the G-AXNE at Bissau.⁶⁴

Luckily for the G-ARCX Meteor, it avoided this controversial situation and instead found itself a new safe home in the National Museum of Flight. The museum agreed

⁵⁹ Jack Bennett, 'Shadow Wars: Cold War Foreign Policy in Africa', [retrospectjournal.com](https://retrospectjournal.com/2019/10/20/africas-shadow-wars/), <https://retrospectjournal.com/2019/10/20/africas-shadow-wars/>, Accessed: 13 April 2022.

⁶⁰ Lawrence James, 'Snuffed Out Democracies and Poisoned Toothpaste: How the Cold War Wreaked Havoc in Post-Colonial Africa', [historyextra.com](https://www.historyextra.com/period/20th-century/africa-cold-war-proxy-wars-decolonisation/), <https://www.historyextra.com/period/20th-century/africa-cold-war-proxy-wars-decolonisation/>, Accessed: 13 April 2022.

⁶¹ Draper, *Shadows: Airlift and Airwar in Biafra and Nigeria, 1967-1970*, p. 236.

⁶² Draper, *Shadows: Airlift and Airwar in Biafra and Nigeria, 1967-1970*, p. 236..

⁶³ Draper, *Shadows: Airlift and Airwar in Biafra and Nigeria, 1967-1970*, p. 232.

⁶⁴ Draper, *Shadows: Airlift and Airwar in Biafra and Nigeria, 1967-1970*, p. 235.

to the conditions of the transfer and Dr Alistair Thomson, the Keeper of Technology, recorded this new donation in the register of acquisitions.⁶⁵ The mutually agreed date of transfer was set for the 14 August 1973 at Turnhouse. Hugh McLeod-Bain, Ferranti's publicity executive, shared a draft press release with Storer on 2 August 1973 which detailed the biography of the plane with the final sentence stating: 'The aircraft only flew a total of 364 hours 15 minutes during its career, and is therefore in a very good state of preservation.'⁶⁶

To mark the occasion of the donation, Donald McCallum, Ferranti's General Manager, invited a selected party of officials from Edinburgh Airport, Ferranti senior staff and senior museum staff to the Ferranti Flying Unit base at Turnhouse to witness the official handover of the Meteor. The BBC and STV news filmed and reported on the official handover between Donald McCallum and the museum director, Norman Tebble, reaching local and national news coverage. The images show Mr McCallum and Mr Tebble shaking hands and passing over the Meteor's logbook, signifying the end of its flying life with Ferranti.

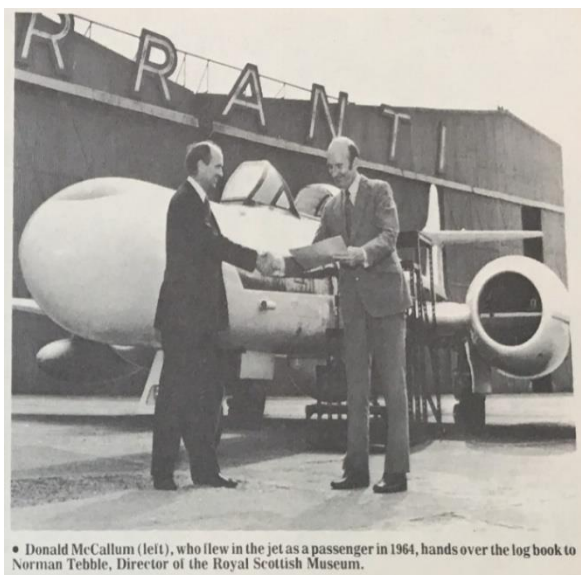


Fig. 1.3 and Fig. 1.4: G-ARCX handover ceremony from Ferranti to the Royal Scottish Museum 14 August 1973. *Ferranti News*, October 1973, p. 11 and article from the *Scotsman*, 15 August 1973.

⁶⁵ Letter from Dr Alistair Thomson to Ferranti, 30 May 1973, 'G-ARCX Meteor', Building 25 Office, National Museum of Flight.

⁶⁶ Letter from Hugh McLeod-Bain to Don Storer, 2 August 1973, 'G-ARCX Meteor', Building 25 Office, National Museum of Flight.

Despite Don Storer and Tom McIlwraith's efforts in organising the donation, it was the company and museum directors who were filmed and photographed donating and accepting the aircraft. This emphasises the point that hidden individuals like Tom McIlwraith and curators also significantly influence the lives of objects. As Samuel Alberti describes, 'objects collected people on the way' to the museum, thereby museum objects represent 'not only things in their material form, but also the legacy of their acquisition route, and of the people involved.'⁶⁷ The decision to select senior Ferranti and museum staff to lead the handover ceremony demonstrates the attention to the status of these men and the potential to generate increased media publicity with them as the main focus with the aircraft.

Gifting the logbook at the same time as the aircraft is a symbolic way of passing on the history of the aircraft to the museum as this clearly marks the transition from an active object to becoming a museum artefact. The large crowd and multiple staged publicity photographs (Fig. 1.3 and 1.4) demonstrate how important it was to Ferranti and the museum to document this exciting moment. This event was a symbolic performance to publicise the positive relationship between Ferranti and the wider community in Edinburgh through the museum, a public institution. This is a key part in the biography of the aircraft as it visually shows the instance of exchange and the beginning of a new chapter.⁶⁸ After the handover ceremony, a selection of invited guests were invited to attend a lunch party at Barnton Hotel to celebrate the occasion.⁶⁹

The handover ceremony and the lunch party highlight the significance of the donation for Ferranti and the beginning of a giving relationship between the company and the museum. Furthermore, very few object donations come with such fanfare. It was clearly important for Ferranti to organise an official handover and invite the press to witness the occasion and report on it. Until this point the Meteor had been in storage for several years and had become less important to the company. This ceremony adds to the idea of the Meteor becoming special and significant as it enters the museum collection.

⁶⁷ Samuel J. M. M. Alberti, *Nature and Culture: Objects, Disciplines and the Manchester Museum* (Manchester: Manchester University Press, 2009), p. 92.

⁶⁸ The Scotsman, 15 August 1973 and Glasgow Herald, 15 August 1973.

⁶⁹ Letter from Donald McCallum to Dr Alistair Thomson, 2 August 1973, 'G-ARCX Meteor', Building 25 Office, National Museum of Flight.

As a large object and unable to fly into East Fortune, Don Storer organised the logistics of transporting the Meteor from Turnhouse to East Fortune. The museum retains copies of the quotes offered by Pickfords Heavy Haulage Ltd who agreed to transport the aircraft, with the wings detached and transported separately, for £319.⁷⁰ The landowner of the runways at East Fortune, Mr Stuart, allowed some fences obstructing the route to be temporarily removed on the morning of 2 October 1973 ready for the Meteor's arrival.⁷¹ Coincidentally, Storer organised a meeting to establish the APSS on 6 October 1973 to encourage fellow aviation enthusiasts to join and help him establish the museum.⁷² The very recent arrival of the Meteor may have been helpful in attracting additional members to the newly formed APSS.

Given the lack of a suitable buyer and the timely creation of the Museum of Flight, this arrangement was a convenient transaction. The Meteor had been in storage since its final flight in June 1968 and was no longer an active part of the Ferranti fleet, meaning it was slowly losing value in its inactive state. Don Storer began organising the Museum of Flight in 1971 after the donation of a Supermarine Spitfire and required appropriate storage space.⁷³ This led to active searches for aircraft to add to the collection. These two scenarios meant the Meteor's donation was mutually beneficial. Furthermore, for Ferranti by donating the aircraft to the museum they can be seen to be giving something back to the community and maintaining a good reputation.⁷⁴ Joanna Szczepanski's research surrounding donor motivations suggests legacy building, prestige and creating tangible connections to museums as prime motives and something Ferranti also desired with their donation of the Meteor, knowing it would be displayed to thousands of visitors seeing their branded aircraft.⁷⁵

In the gifting relationship between Ferranti and the museum, Ferranti did not expect to receive a gift in return. However, as Marcel Mauss and Christopher Gregory

⁷⁰ Invoice from Pickford's Heavy Haulage Ltd to the Royal Scottish Museum, 9th October 1973, 'G-ARCX Meteor', Building 25 Office, National Museum of Flight.

⁷¹ Letter from Don Storer to Mr Stuart, 18 September 1973, 'G-ARCX Meteor', Building 25 Office, National Museum of Flight.

⁷² Letter from John E.D Touche, 24 September 1973, accepting Don Storer's invitation to the first APSS meeting, '1973-1975' file, Building 25 Office, National Museum of Flight.

⁷³ National Museums Scotland, 'About Us: History', nms.ac.uk, <https://www.nms.ac.uk/about-us/our-organisation/history/>, Accessed: 15 April 2022.

⁷⁴ Euan Green, interviewed by Sarah Harper, 30 July 2020.

⁷⁵ Joanna Szczepanski, "Understanding Donor Motivations," *Museum Management and Curatorship* 32, no. 3 (2017): p. 277.

propose, the giver holds a level of superiority over the receiver who feels a level of indebtedness to the giver, meaning the museum feels obligated to publicly show gratitude to Ferranti.⁷⁶ In this situation, by organising a public handover ceremony, the permanent Ferranti branding on the plane and the gift of the aircraft free of charge, the company is in some ways maintaining a hold over the aircraft. Annette Weiner suggests that objects are imbued with inalienable identities of their owners as the values of the owners move with the object, which is clearly at play in the transfer of the Meteor.⁷⁷ The Meteor does, to some extent, still possess the values of its owners as the aircraft will always have a visible connection to Ferranti as long as it retains its Ferranti branding, and its story is told in relation to its life at the company. Furthermore, as the first object donated by Ferranti Edinburgh, the Meteor is representative of the beginning of the gifting relationship between the two organisations.

Tom McIlwraith was key in establishing the gifting relationship between the museum and Ferranti. He not only organised the Meteor donation but was responsible for maintaining this relationship with later donations on behalf of Ferranti as well as offering personal donations. The social value of these objects is clearly important to McIlwraith as he has attached his own feelings of identity and belonging to them as a long-term Ferranti staff member and as someone who had personally interacted with these objects. McIlwraith's role in the Meteor donation as well as his own personal donations adds valuable authenticity to the objects as they are directly connected to him and his experiences at Ferranti. The 1974 accession register refers to a donation of a parachute and dinghy used in Ferranti Meteors as 'presented by Ferranti Ltd (per Mr Tom McIlwraith)' and other donations were made in 1978.⁷⁸ In 1994, McIlwraith donated his personal flying suit and helmet used in Ferranti Meteors. The former Assistant Curator of Transport recalled that McIlwraith 'insisted on a rather big presentation and brought along a large gathering of Ferranti personnel' and the presenter 'gave a very long-winded address to his chosen audience!'⁷⁹ McIlwraith's insistence on a hand-over ceremony for his personal collection of items is an attempt to replicate on a smaller scale the Meteor's

⁷⁶ Nicholas Thomas, *Entangled Objects: Exchange, Material Culture, and Colonialism in the Pacific* (Cambridge, Massachusetts: Harvard University Press, 1991), p.14.

⁷⁷ Weiner, *Inalienable Possessions: The Paradox of Keeping-While Giving*, p. 6.

⁷⁸ Royal Scottish Museum Accessions Register 1974, National Museums Scotland.

⁷⁹ Email correspondence between Sarah Harper and Carl Henry, 30 November 2020.

handover ceremony. Very few donated objects are handed over with such an affair, meaning McIlwraith was further legitimising his status as a significant museum donor.

Although his motivations for these donations are unknown, his commitment to organising the donation of an aircraft as well as continuing to donate items until the 1990s, highlights his desire for them to be preserved in recognition of their heritage value and for his own prestige. McIlwraith's involvement in Meteor's biography is pivotal. Without his initial correspondence with the museum, the Meteor may have been scrapped or led a different life. The relationships and networks surrounding objects, like those with McIlwraith and Ferranti, are key in adding to the provenance, aura, and layers of authenticity an object has.⁸⁰ These connections to people enrich the story of the object as they connect this museum object to its former active life. The Meteor and the other Ferranti objects donated by McIlwraith are representative of the social and heritage values he ascribed to these objects as things which should be preserved and shared.

The correspondence and arrangement documents highlight the range of people the Meteor encountered even in this transitional period. Luckily for the Meteor, during its redundancy phase at Ferranti, Tom McIlwraith recognised its potential as an artefact and an asset to Don Storer's new museum. The donation to the museum sees the Meteor passed on to a totally different set of individuals who do not value the aircraft in the same way as the engineers and pilots before. Rather, they value the Meteor as a historic object which needs to be cared for to ensure its condition remains stable so visitors can appreciate it for being a piece of advanced Cold War era technology.

The transition from being an example of active technology to becoming a museum object is worth enquiry. From the examples Ferranti donated to museums around the country, most were donated for their merits as technical objects and their pioneering systems and technology. This shows that these objects, including the Meteor are tied up with a range of meanings. As the Meteor entered the museum, a new group of people, ranging from curatorial and museum professionals to

⁸⁰ Siân Jones, "Experiencing Authenticity at Heritage Sites: Some Implications for Heritage Management and Conservation," *Conservation Management of Archaeological Sites* 11, no. 2 (2009): p. 137.

aviation enthusiasts, who are excited to see an unusual variant of the Meteor aircraft, each ascribe different meanings to the Meteor.

Meteor's Museum Life

By being accepted into the Museum of Flight's collection, the Meteor was given a new lease of life and is now being preserved and displayed for posterity. By becoming a museum artefact, the aircraft is now viewed in a different light to when it was essentially a piece of equipment for a company to continue their research. As a result, the aircraft is subjected to the 'museum effect' whereby it will no longer continue to function as originally intended and becomes more valuable for its physical appearance and condition.⁸¹ This means that the Meteor will now be viewed in the context of the museum, a place which enables the construction of new cultural meanings.⁸² As objects like the Meteor become stationary, separated from their previous capacities, they become viewed as art objects as viewers are attracted to the visual appearance.⁸³ This is particularly important in the case of the Meteor as it stands out from other aircraft due to its white and red appearance in contrast to darkly painted military aircraft beside it.

The change in environment for the Meteor also altered how it is viewed by the people interacting with it. By being transferred to the Museum of Flight, the Meteor has been removed from its natural environment of an active airfield to another airfield, but one which is a designated heritage site. This is somewhat ironic as even the airfield on which these inactive aircraft sit, is also inactive. In this new environment as a heritage object, the Meteor is assessed not in terms of its previous technological achievements but its qualities as a well-preserved object. Aviation Heritage UK (AHUK) confirm the significance of the Meteor as an artefact by awarding it a high rating by their standards. Formally the British Aircraft Preservation Council, the AHUK is the national body for the preservation of aviation related items.⁸⁴ This

⁸¹ Svetlana Alpers, "The Museum as a Way of Seeing," in *Exhibiting Cultures: The Poetics and Politics of Museum Display*, ed. Steven D Lavine and Ivan Karp (Washington: Smithsonian Institution Press, 1991).

⁸² Valerie Casey, "The Museum Effect: Gazing from Object to Performance in the Contemporary Cultural-History Museum," *Archives & Museum Informatics* 2 (2003): p. 7.

⁸³ Alpers, "The Museum as a Way of Seeing," p. 32.

⁸⁴ Aviation Heritage UK, <https://aviationheritageuk.org>, Accessed: 11 November 2020.

voluntary organisation assesses aircraft based on standard criteria and awards points under nine headings, six of which are based on 'heritage value' and three on 'collections care.'⁸⁵ The G-ARCX Meteor has a heritage value of 5 and in the 'Benchmark' category, this means it is an aircraft which has scored 'the highest number of points by virtue of their significance, rarity, condition, current level of care and quality of conservation.'⁸⁶ The significance of an aircraft is assigned based on its positioning on a world or national level as well as its technical and social significance to highlight the aircraft's application of key technologies or connections to an important person or organisation.⁸⁷ This designation shows the appreciation given to the G-ARCX as a unique example of a Meteor aircraft and for its involvement in research and development; it also takes into account its museum life and recognises the efforts made to maintain and conserve the aircraft for heritage purposes. Further credit for the condition of the G-ARCX came from Barry Jones, author of *Gloster Meteor* who described the aircraft as: 'possibly one of the freshest Meteors that exists.'⁸⁸

The high rating assigned to the Meteor is a result of the careful treatment of the aircraft since its arrival at the museum. The museum is the adoptive owner of the Meteor, responsible for ensuring its current condition is maintained for the benefit of the public. The aircraft becomes subject to several processes upon entering the museum, such as accessioning, documentation, conservation and displaying, all of which contribute to the changing meaning of the aircraft. When any object enters a museum collection it is assigned a unique accession number which connects the object to the museum for the rest of its life until it is deaccessioned or disposed. The Meteor was accessioned with the number T.1973.88 meaning it was acquired by the museum's Department of Technology (T) in 1973 and was the eighty-eighth object collected that year. This accession number is added to the several other number markings the Meteor has been assigned throughout its life. To those who will interact with the Meteor at the museum, the accession number is the most

⁸⁵ Aviation Heritage UK, 'National Aviation Heritage Register, aviationheritageuk.org, <https://aviationheritageuk.org/register-catagories>, Accessed: 11 November 2020.

⁸⁶ Aviation Heritage UK, 'National Aviation Heritage Register, aviationheritageuk.org, <https://aviationheritageuk.org/register-catagories>, Accessed: 11 November 2020.

⁸⁷ Aviation Heritage UK, 'National Aviation Heritage Register, aviationheritageuk.org, <https://aviationheritageuk.org/register-catagories>, Accessed: 11 November 2020.

⁸⁸ Jones, *Gloster Meteor*, p. 162.

important as this marks the object's place in the collection and creates a link to any associated information such as object files or digital records.⁸⁹

Information from the original paper accession registers were inputted into the Adlib collections management system as part of the museum's efforts to digitise these records in the early 2000s.⁹⁰ Despite the aircraft's involvement in Cold War activities, it has not been categorised in this way, rather it is in the large category of 'Aeronautics, Aeroplanes.'⁹¹ This is because prior to this research there was no dedicated 'Cold War' category and also that until now the aircraft was not viewed in light of its Cold War connections. The brief description describes: 'Gloster Meteor, a twin-engined jet monoplane, built by Armstrong Whitworth in 1953.'⁹² Although this description is accurate, it separates the aircraft from the rest of its biography and does not mention its connections to Ferranti, despite this branding obviously painted on its wing.

The aircraft is documented on the Adlib database but also has a dedicated object file which contains various documents related to the Meteor. Not all museum objects have a dedicated object file as not all curators saw the importance in retaining these documents, but most now preserve letters and email trails for new acquisitions. There are several letters of correspondence between Ferranti and the museum, papers describing the technical details of the aircraft, inspection and servicing certificates and photographs of the Meteor at Turnhouse. These additional documents are key in providing a fuller picture of the Meteor's biography.⁹³ Other archival documents at the National Museum of Flight also help to document the Meteor's museum life such as the photographic annuals collated by former staff members showing the Meteor on display in different ways since the opening of the museum in 1975.

⁸⁹ Collections Trust, 'Re-Numbering Your Collection – Why it Might not be Worth While', collectionstrust.org.uk, <https://collectionstrust.org.uk/resource/re-numbering/#:~:text=An%20accession%20number%20is%20only,a%20running%20sequence%20of%20numbers>, Accessed 13 April 2022.

⁹⁰ NMS began using Adlib in early 2003. The museum had begun digitising databases in the early 1990s on the MINISIS system, but it is unclear whether the Meteor would have been recorded on this early database. Email correspondence between Euan Green and Angus Kneale, 8 January 2021.

⁹¹ T.1973.88 – Armstrong-Whitworth Meteor, National Museums Scotland.

⁹² T.1973.88 – Armstrong-Whitworth Meteor, National Museums Scotland.

⁹³ 'G-ARCX Meteor', Building 25 office, National Museum of Flight.

The museum utilises a range of protocols to ensure the Meteor's condition remains stable, so each museum visitor sees the aircraft in the best condition possible and in the same way as it looked when it entered the collection almost fifty years ago. Clear documentation, regular condition reporting and conservation is essential in maintaining the Meteor's excellent condition. The Meteor is under the care of Tom Burrows, the Aircraft and Technology Conservator based at the National Museum of Flight. Although there are no dedicated condition checks on the whole airframe, the Meteor has been treated to remediate some asbestos found in various parts and it is marked as a hazard due to the radioactive dials found in the cockpit.⁹⁴ These hazards checks are important as any remedial or interventive conservation work to remove hazardous material would become part of the aircraft's biography as a point when the originality of the aircraft is compromised. This is comparable to the stone conservation work at Linlithgow Palace, where Historic Scotland staff made detailed reports on the condition of the stone angels and documented the impact of previous conservation on their current condition. This informed their work to consolidate the stone and aided in slowing future decay. Siân Jones and Thomas Yarrow found that these conservators downplayed their important role in influencing the ongoing biography of these stones, particularly as conservators aimed to make their adaptations as discreet as possible to avoid distracting visitors from the object itself.⁹⁵

The Meteor is also included in a regular programme of tyre inflating and is annually cleaned by the conservation team. Conservation is a key part of the museum life of an object as it demonstrates the museum's commitment to preservation. By caring for objects in this way, it means the public benefits from seeing the objects displayed in the best possible condition.

⁹⁴ Email correspondence between Sarah Harper and Tom Burrows, 30 November 2020.

⁹⁵ Siân Jones and Thomas Yarrow, *The Object of Conservation: An Ethnography of Conservation Practice* (London: Routledge, 2022), p. 129.



Fig. 1.5. Ferranti Meteor G-ARCX at National Museum of Flight. ©Grant Newman

Since arriving at East Fortune in 1973 the Meteor has always been on display to the public in various locations and positions around the site (Fig. 1.5). Originally, the museum consisted of just one hangar where all the aircraft were on display together. This is important to the biography of the Meteor as continually being on display means it has always been viewed in relation to the aircraft surrounding it and rarely independently. The displays surrounding the Meteor include examples of Second World War aircraft like the Spitfire and rocketry such as the Blue Streak and Black Knight alongside high-powered jets. The various layout plans from 1975 show the different possibilities for positioning the Meteor among the other aircraft. The locations of the aircraft were based on how the aircraft could logistically and thematically fit together in the hangar. Figure 1.6 shows the design which was chosen as the first configuration of the Museum of Flight, where the Meteor was featured next to the Sea Venom.

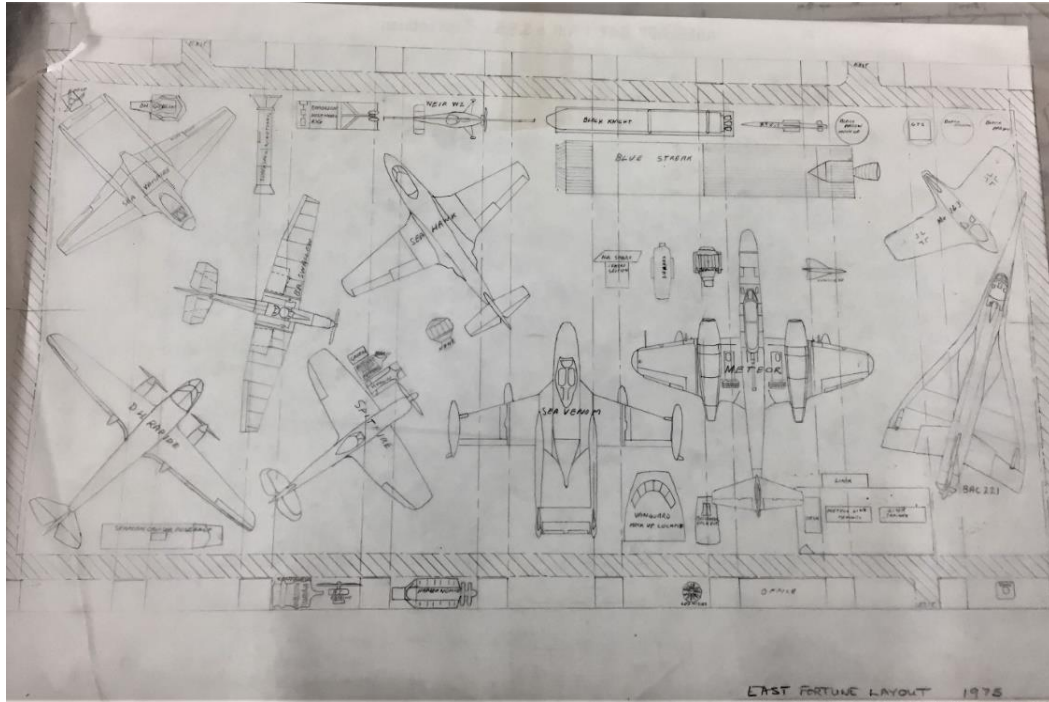


Fig. 1.6: Layout of the Museum of Flight in 1975. ©Sarah Harper.

As the aviation collection grew, the Museum of Flight expanded and acquired more space in other large hangars on site. For most of the Meteor's museum life it remained in Hangar One, where other examples of military aircraft such as the Lightning were displayed. In Hangar One, the Meteor was displayed with an information lectern beside it and a set of steps for visitors to climb to view inside the cockpit. Apart from being wheeled outside for photography and special events, the Meteor only moved from Hangar One in 2016 into the newly developed Hangar Two which became the military hangar. Due to the new location, there are no longer any steps to view inside the cockpit and the static lectern is replaced with an electronic screen where visitors can view further information about the aircraft.

With all these moves the Meteor became less prominent as an exhibit as other more high-profile objects like the Concorde and the Vulcan receive more attention from visitors. In terms of Cold War enthusiasts, they are likely to pay more attention to the Vulcan as it saw active combat and was an iconic Cold War era aircraft. The Ferranti Meteor's Cold War connections are discreet and require a deeper explanation to convey the importance of science and technology development as much as military intervention in the Cold War story.

The removal of the steps to view inside the Meteor's cockpit and the inability to walk all around the plane for safety purposes, mean visitor interactions with the Meteor have decreased as it is nestled in the corner of a hangar surrounded by other interesting exhibits (Fig. 1.7). This is in contrast to the Meteor's earlier life at the museum where it was one of the star exhibits of the new museum. This shows how the value of the Meteor as a key object has decreased over time in favour of more widely recognisable aircraft. However, aviation enthusiasts or those with knowledge of the Meteor can still appreciate the aircraft in the same way.



Fig. 1.7: The G-ARCX Meteor currently on display at the National Museum of Flight, 2020. ©Sarah Harper

The current information label attached to the Ferranti Meteor describes the aircraft firstly as the RAF's first jet fighter, then goes on to describe its use to test radar equipment and as a company taxi, then finishes with a list of technical facts such as speed and range.⁹⁶ The label offers both concise information to give a short overview of the aircraft's life, with additional technical information on the electronic screen for those seeking further information. Euan Green, the curator of this exhibition, describes several ways in which the Meteor could be interpreted:

'it can have all these other meanings over and above what the object itself actually is and that's often how meanings of objects change when they come into a museum because they can be used to tell the story of the object itself but very

⁹⁶ National Museums Scotland, 'Armstrong Whitworth Meteor', [nms.ac.uk](https://www.nms.ac.uk), <https://www.nms.ac.uk/national-museum-of-flight/things-to-see-and-do/explore-the-hangars/military-aircraft/meteor/>, Accessed: 20 August 2020.

often used to represent other things, likes of the Meteor we'd tell a little bit of it as a Ferranti object but it is there to represent Meteors generally and in even more wider terms to represent the first generation of military jet aircraft.⁹⁷

Euan highlights the importance of recognising the meanings of objects are not limited to purely what the object is or its function but to how different people see them and how it is related to personal experience. This is the case for all objects under examination in this thesis as they can all be taken on their face value for their functions, but it is the additional layers of authenticity and values attached to them by different people that makes them examples of Cold War objects.

Euan's testimony is in line with the label he wrote for the Meteor as he describes the Meteor's qualities as a Ferranti object, a Meteor variant, and its merits as an early jet aircraft. This shows how directly Euan's interpretation of the Meteor is transferred to the museum visitor and how important museum staff are in how objects are viewed by visitors. In Euan's interpretation, the Meteor's qualities as a 'Cold War' object are not recognised despite him agreeing that the Meteor could be viewed as a 'Cold War' object.⁹⁸ His conception of Cold War is based mainly around military and technological activity - he suggests that, although the Meteor was not involved in operational combat, its connections to a company which manufactured and developed military equipment justifies this connection. The fact that he was a teenager during the late Cold War and his interest in military aviation may have also influenced his reflections on this period. His decision to prioritise a non-Cold War biography is interesting as this hangar is dedicated to military aviation yet the Meteor's link to a major conflict is absent. However, in comparison to other aircraft in the military hangar, there are more overtly military Cold War era aircraft available to interpret in this way such as the English Electric Lightning or the Hawker Siddeley Harrier. Any one of these elements Euan mentioned could be brought into further focus depending on the type of exhibition the Meteor was involved in. For example, the Meteor could be representative of the presence of scientific and technological industries in Scotland during the Cold War period or the impact of Ferranti on Edinburgh.

⁹⁷ Euan Green, interviewed by Sarah Harper, 30 July 2020.

⁹⁸ Euan Green, interviewed by Sarah Harper, 30 July 2020.

Displayed at the museum, the meaning and significance of the Meteor became open to a wider audience including visitors, museum curators and ex-Ferranti staff witnessing the aircraft now as an artefact rather than an active aircraft. Displays dedicated to very advanced technologies can often alienate some visitors, while sparking fond memories or fascination in others. As one ex-Ferranti employee comments: 'I actually like visiting museums like East Fortune that have these aircraft on display and as it is normal not to have access to the inside of the aircraft then internal equipment that is being displayed separately is a plus - but having said that, I know some people that will walk past the equipment displays.'⁹⁹ Similarly, Tim Simpson, Chairman of the Museum of Communication mentioned the divided reaction to the AI-23 radar set with some visitors having very little knowledge of radar and its operation, in comparison to former RAF or Ferranti staff who have direct experience with the equipment which is 'much rarer and much more rewarding for us,' Tim remarked.¹⁰⁰

In these cases, the ex-Ferranti worker or those familiar with this advanced technology value the preservation of these objects in museums as tangible examples of their careers and with pride for the achievements of their former workplace. Visitors with personal connections and memories of these objects in their active lives are often keen to share their anecdotal experiences or additional information that is absent in the museum labels. At the National Museum of Flight, any visitors offering information often share this with the guides who, if the visitor is willing, take the visitors details for Euan Green to follow up on.¹⁰¹ These interactions add new dimensions to the biography of the objects as they highlight how important people and networks are in influencing the lives of objects and the influence of the objects on the lives of people. These interactions generate additional information that can be added to the object's life story and offer points for further investigation. Portland Art Museum has harnessed these additional visitor stories by installing a dedicated film booth for visitors to record short films of themselves describing their favourite objects and further detail about them.¹⁰²

⁹⁹ Email correspondence between Sarah Harper and Alastair Bennett, 27 July 2020.

¹⁰⁰ Email correspondence between Sarah Harper and Tim Simpson, 23 July 2020.

¹⁰¹ Email correspondence between Sarah Harper and Euan Green, 23 February 2022.

¹⁰² Nina Simon, 'How Do You Capture Compelling Visitor Stories? Interview with Christina Olsen', *museumtwo.blogspot.com*, <http://museumtwo.blogspot.com/2011/05/how-do-you-capture-compelling-visitor.html>, Accessed: 14 April 2022.

Visitors have interacted with the Meteor by seeing it on open display or in the past have had the opportunity to sit inside the cockpit on special 'Open Cockpit Days' or via a viewing platform to see inside.¹⁰³ Due to health and safety restrictions, visitors are no longer permitted inside the cockpit and the viewing platform has been removed, replaced with a central platform for visitors to see a panoramic view of all the aircraft in the military hangar. This physical separation between the aircraft and the visitor furthers the idea that the Meteor has been influenced by the 'museum effect' as the aircraft becomes increasingly protected and reified as the visitor can only view the object from a distance.¹⁰⁴ This distance decreases the engagement with the Meteor as visitors are only afforded a limited view and are exposed to several other aircraft within the same hangar. The position within the hangar also alludes to the value given to the Meteor in comparison to the other aircraft as it is positioned in the corner with aircraft like the Spitfire given a special elevated plinth to make it a key feature.

As well as those physically visiting the museum to see the Meteor, there is also an online community of aviation enthusiasts and modellers who have also highlighted the unique life of the Ferranti Meteor. Despite not having seen the aircraft in person, one online aircraft modeller recreated the Ferranti Meteor, creating custom decals to mimic the 'Mentadent' red stripe, commenting: 'my main modelling interest is British jets and the huge variety of versions and colour schemes of the Meteor have kept me busy for years! I first saw a photo of G-ARCX about 40 years ago and always wanted to make a model of it due to its unique colour scheme' (Fig. 1.8).¹⁰⁵ He values the Meteor for its uniqueness in comparison to other Meteor aircraft as he challenged himself to creatively replicate this unusual version. The value of replicas has been championed by Sally Foster and Siân Jones with their practical advice to museums in *New Futures for Replicas* which suggests: 'replicas extend our understanding of the relationships between people, places, and things.'¹⁰⁶

¹⁰³ Email correspondence between Sarah Harper and Carl Henry, 30 November 2020.

¹⁰⁴ Casey, "The Museum Effect: Gazing from Object to Performance in the Contemporary Cultural-History Museum," p. 2.

¹⁰⁵ Email correspondence between Sarah Harper and Simon Farmer, 16 August 2020.

¹⁰⁶ Sally M. Foster and Siân Jones, *New Futures for Replicas: Principles and Guidance for Museums and Heritage* (Stirling: University of Stirling, 2020), p. 1.



Fig. 1.8: Ferranti Meteor G-ARCX model. ©Simon Farmer.

For this aircraft modeller, he has chosen to share his passions digitally with others on online forums where fellow enthusiasts work together to help each other confirm facts and clarify even minute details. Others in the Brit Modeller website, all males, replied with complimentary comments about the great efforts and shared their experiences of seeing the Meteor at East Fortune.¹⁰⁷ Aviation enthusiasm and model making attracts a more masculine audience stemming from the historical association with male heroic pilots at the controls of advanced technological machines and the gendering of military activities as masculine pursuits.¹⁰⁸

As well as the passion for the objects shown by visitors, Sharon Macdonald describes the affectionate relationship between curators and 'their' collections as 'object-love,' capturing the passion they have for the artefacts in their care and the immense knowledge they have of them.¹⁰⁹ This 'object-love' is also shared by visitors who, despite not having unrestricted access to the objects they are

¹⁰⁷ Brit Modeller, 'Ivory Meteor', [britmodeller.com](https://www.britmodeller.com), <https://www.britmodeller.com/forums/index.php?/topic/235041384-ivory-meteor/#comment-3097192>, Accessed: 14 April 2022. East Fortune is the place name where the National Museum of Flight is located in East Lothian, Scotland.

¹⁰⁸ Robert Hemmings, "Modernity's Object: The Airplane, Masculinity, and Empire," *Criticism* 57, no. 2 (2015): p. 301.

¹⁰⁹ Sharon Macdonald, *Behind the Scenes at the Science Museum* (Oxford: Berg Publishers, 2002), p. 65.

fascinated by, still admire them and research them, and in cases like this, create replicas of the objects to feel a connection to them.

In some cases, visitors repeat their visit to the museum purely to see the objects they are most interested in again. Each of these visitors attach their own meanings and memories to the aircraft based on their interests and their own biographies. Despite the passion from a minority of individuals, not all visitors feel the same about the Meteor. The Meteor does not appear in the visitor comments or TripAdvisor reviews, as the Meteor cannot compete with the more famous aircraft such as the Concorde or the Vulcan.¹¹⁰ These comments and reviews are important to the biography of an aircraft on display, as they can allude to its popularity at a specific moment in time.

The Meteor's museum life is not static. The aircraft has received the same treatment as all other objects and is ingrained in its museum life, having now lived longer as an artefact than an active aircraft. By becoming a museum object, the Meteor has avoided becoming dismantled and scrapped like many other Meteors. The museum has given the aircraft the opportunity to be displayed as an example of material culture which can be interpreted in a number of different ways. NMS did not actively collect Ferranti objects as examples of Cold War objects, rather they were accepted based on their qualities as pieces of technology and their connections to the electronics and avionics industry in Scotland. This means that until now, their role in the Cold War is somewhat overlooked. Furthermore, due to this oversight, there are many more objects within the NMS collection that could also be deemed 'Cold War' objects if considered in this context. For example, there are Cold War connections to the development of computing which could be explored using the SOLIDAC or Apricot computers within the collection, which were both made in Scotland.¹¹¹

¹¹⁰ I enquired to the Site Manager of the National Museum of Flight about any visitors' comments related to the Meteor but there were none. I also searched for 'Meteor' on the NMoF's TripAdvisor page and in two mentions the aircraft was listed in a list of some other key aircraft worth seeing that was not Concorde. Tripadvisor, 'National Museum of Flight', [tripadvisor.co.uk, https://www.tripadvisor.co.uk/Attraction_Review-g315944-d1876095-Reviews-National_Museum_of_Flight-North_Berwick_East_Lothian_Scotland.html](https://www.tripadvisor.co.uk/Attraction_Review-g315944-d1876095-Reviews-National_Museum_of_Flight-North_Berwick_East_Lothian_Scotland.html), Accessed: 13 April 2022.

¹¹¹ T.2011.34 – SOLIDAC computer made by Barr & Stroud and the University of Glasgow, and T.2011.32 – Apricot F2 computer made by Apricot Scotland Ltd.

Despite this, Cold War meanings are attached to the Meteor and other Ferranti objects as further research brings these connections to light. Accounts from those who worked for Ferranti demonstrate this recognition of their role in the wider Cold War story. However, there are aviation enthusiasts and amateur historians who are reluctant to acknowledge the Meteor as a Cold War object, but agree that it ‘performed a role related to the Cold War.’¹¹² Nevertheless they suggest other examples of Meteor aircrafts which saw service in RAF Squadrons as ‘very much more obvious examples of Cold War objects.’¹¹³ Prior to this research into the biography of the Meteor, there was little evidence at the museum which showed the Meteors involvement in important radar testing trials and assisting in aerial photography. The purpose of using aircraft like the Meteor was specifically to test avionics and new technology for military purposes. This focus on continuous development in new technologies, often funded by the government, is part of the Cold War preparedness mentality. The Ferranti objects donated to the museum are representative of this technological preparation.

Conclusion

Companies like Ferranti thrived throughout the Cold War period and benefitted enormously from government contracts to enable them to become pioneers and market leaders in avionics, electronics, and computing. From this perspective, the objects created as a result of these government contracts can be regarded as ‘Cold War’ objects, as without their existence as prototypes and experiments, the final products used in weaponry and vehicles would not exist. The Meteor was part of this story as it participated in experiments and later acted as a witness to further endeavours while in the Ferranti fleet.

At different intersections of the Meteor’s life, the plane held different meanings and values to those interacting with the aircraft as it transitioned from an active life to becoming an artefact. These meanings differed between the engineers, pilots, Ferranti staff, and later the museum professionals and visitors who engaged with it

¹¹² Email correspondence between Sarah Harper and Tony Rockford, amateur aviation historian, 28 October 2020.

¹¹³ Email correspondence between Sarah Harper and Tony Rockford, amateur aviation historian, 28 October 2020.

in its later life. Several of these actors involved in the early life of the Meteor did recognise how their efforts to create these objects or maintain them were part of Scotland's involvement in the Cold War from a technology standpoint. However, the Cold War meanings attached to the Meteor gain and lose potency as they progress through their lives.

As the Meteor became redundant at Ferranti, there were key actors such as Tom McIlwraith and Don Storer, who encouraged and facilitated its transition towards becoming an artefact. This new connection enabled a continuous gifting relationship between Ferranti and the museum. In some ways, the initial gift of the Meteor was responsible for attracting further gifting from Ferranti to the museum, driven by both individual and institutional relations.

The presence of Ferranti material culture in NMS and other British museums highlights their dedication to building their own legacy outwith the company to show how important and world-leading their technology was. Ferranti objects were not donated or acquired to be representative of the Cold War but were gifted to celebrate their technological achievements. This is arguably true of other parts of the museum collection which can only now be recognised as also being embedded with 'Cold War' influences.

This chapter demonstrates that the Meteor was not always a Cold War object as those who value the Meteor as a Cold War object are those who were closely connected to it during its active life. The relationship to the Cold War became less apparent as the Meteor entered the museum environment as not all museum staff or visitors made the connection between the two. It is unclear why this is the case, but it may be due to a combination of a lack of shared knowledge of the Cold War, the competition for attention from other Cold War era aircraft at the museum or how the Meteor has been interpreted in the past.

This lack of acknowledgement of the Cold War connections to objects within the National Museums Scotland collection is not restricted to the Ferranti collection. The range of objects donated by Dounreay Nuclear Power Station are also distanced from being interpreted with Cold War connotations, despite also being representative of the 'campaign' for scientific and technological dominance during this period.

Chapter 2: Powering the Cold War - The Dounreay Fast Reactor Control Room

‘At 10.20 a.m. the Sphere equipment had reached the limit of its usefulness, and it was obvious that another inch or so movement of the control units would make the reactor critical. The Control Room now became the centre of operations and attraction.’¹

This extract from *Haggis*, the Dounreay site magazine, captures the moment on the 14 November 1959 that the Dounreay Fast Reactor (DFR) control room became the epicentre of a new revolution in fast breeder nuclear technology. The development of nuclear power for both military and civilian uses was closely intertwined during the Cold War period.² British scientists, encouraged by the government, utilised nuclear energy not only to fuel weapons, but also as a fuel for civilian electricity production. The Ministry of Supply’s Atomic Energy Act (1946) aimed to promote and control the development of nuclear power. As a result, throughout the 1950s a number of nuclear power stations sprang up across the UK, with several in Scotland. Construction for the Dounreay Experimental Research Establishment (DERE) began in 1955 on the north coast of Scotland. The DERE would become a world leader for nuclear research in their fast breeder reactors.

Now that most of these nuclear power stations are in decommission, interest is turning to how these places are being commemorated and their value as heritage sites.³ However, few recognise their value as *Cold War* heritage sites. Material culture relating to nuclear power during the Cold War has also received limited attention. Several nuclear power stations have established initiatives to fund heritage projects related to their sites, particularly in collaboration with museums through object

¹ J.L Phillips, ‘The Final Twelve Hours’ in *Haggis*, vol III, no.1, January 1960, p. 17-18.

² Margaret Gowing and Lorna Arnold, *Independence and Deterrence: Britain and Atomic Energy, 1945-1952*, vol. 2, Policy Execution, (London: Macmillan, 1974), p. 262.

³ Cara Mulholland, Obuks A Ejohwomu, and Paul W Chan, "Spatial-Temporal Dynamics of Social Value: Lessons Learnt from Two U.K Nuclear Decommissioning Case Studies," *Journal of Cleaner Production* 237 (2019). J.B Gunn, "A Unique Journey in Preserving Nuclear Industrial Heritage," in *Defence Sites: Heritage and Future*, ed. C. Clark and C.A. Brebbia (Southampton: WIT Press, 2012).

donation. According to the Dounreay Heritage Strategy: 'Dounreay is full of objects.'⁴ The strategy recommends gathering a 'safe, comprehensive and high-quality collection of artefacts that can be used to commemorate and interpret Dounreay for the future.'⁵



Fig. 2.1: Items donated by Dounreay Site Restoration Limited including a dose rate meter (T.2011.213), a materials testing reactor element (T.2011.203) and a helium detector (T.2011.220) ©National Museums Scotland.

National Museums Scotland has strong connections to preserving the heritage of Dounreay as a member of the Dounreay Heritage Advisory Panel and holds a collection of objects from the site. The NMS collection includes objects such as the Dounreay Fast Reactor control room, safety and measuring equipment, non-radioactive fuel elements and control panels to tell the story of nuclear power production in Scotland and the legacy of Dounreay (Fig. 2.1). The 'Cold War' qualities of these objects relating to nuclear power have been somewhat overlooked by NMS and other museums in favour of interpretation in relation to their merits in electricity production. Although the advent of nuclear power came to fruition during the Cold War period, it is unclear why material culture related to nuclear power stations has not explicitly been regarded as examples of 'Cold War' material culture.

⁴ Dounreay Site Restoration Ltd, 'Dounreay Heritage Strategy: Delivering a Cultural Legacy Through Decommissioning', 2010, p. 38.

⁵ Dounreay Site Restoration Ltd, 'Dounreay Heritage Strategy', p. 70.

The Dounreay Fast Reactor control room is a useful case study to highlight the material legacy of civilian uses of nuclear energy and as an example of Cold War science and technology, but also in demonstrating the transition from being an active piece of equipment to becoming a heritage object (Fig. 2.2). Using the DFR control room as a case study, I will conduct a thorough object biography to highlight the points at which Cold War meanings may or may not have become attached by different actors in different environments. Furthermore, I will consider how these people and places influence the authenticity and values ascribed to the DFR control room over its lifetime. Following a biography of the DFR control room, I will highlight how nuclear heritage has been approached by Dounreay and how nuclear energy has been interpreted at NMS to understand if the Cold War is considered in these exhibitions. Firstly, I will provide context around the development of nuclear energy from military to civilian purposes and outline the creation of the Dounreay Experimental Research Establishment.



Fig. 2.2: Dounreay Fast Reactor Control Room in operation ©Nuclear Decommissioning Authority.

History of Nuclear Energy

The history of nuclear energy is inextricably linked to the history of nuclear weapons and warfare. The creation of nuclear weapons during the Second World War set the precedent for the remainder of the twentieth century. The discovery of nuclear fission of uranium during the Manhattan Project in 1939 quickly led to its use as a destructive power to fuel the atom bombs dropped on Hiroshima and Nagasaki in 1945, ultimately ending the Second World War.⁶ The British Government continued developing nuclear weapons independently after previous collaboration with the US was compromised by the discovery of atomic spies.⁷ There was no immediate plan of generating electricity from nuclear power, but 'this purpose was very much in mind as a goal for the years ahead.'⁸ Tony Hall suggests: 'the nuclear power industry in Britain was born of the bomb', as those who engineered British nuclear weapons were also involved in the planning of producing plutonium at civilian nuclear power stations.⁹

From 1952 the Government approved the first civil reactor programme to utilise nuclear energy for industrial power. It confidently defined this exploitation of nuclear energy as 'the most important step taken by man in the mastery of nature since the discovery of fire.'¹⁰ In 1954, the newly established United Kingdom Atomic Energy Authority (UKAEA) became responsible for research into both nuclear weapons and nuclear energy. This new organisation meant the British nuclear energy programme had its origins in weapons research and was self-serving in producing the required amounts of plutonium for nuclear weapons.¹¹ The UKAEA was also key in managing on-going research and development and encouraged collaborations and crossovers into the private sector.¹²

⁶ Tony Wooldridge and Stephen Druce, *Golden Egg or Poisoned Chalice? The Story of Nuclear Power in the U.K* (Leicester: Chartwell Press, 2019), p. 2.

⁷ Wooldridge and Druce, *Golden Egg or Poisoned Chalice? The Story of Nuclear Power in the U.K*, p. 2.

⁸ Margaret Gowing and Lorna Arnold, *Independence and Deterrence: Britain and Atomic Energy, 1945-1952*, vol. 1, Policy Making, (London: Macmillan, 1974), p. 161.

⁹ Tony Hall, *Nuclear Politics: The History of Nuclear Power in Britain* (Harmondsworth: Penguin Books, 1986), p. 9.

¹⁰ HMSO, *The Future Organisation of the United Kingdom Atomic Energy Project*, Command Paper 8986 (London, 1953). p. 4.

¹¹ SA Butler and R Bud, "United Kingdom Short Country Report," *History of Nuclear Energy and Society (HoNESt) Consortium Deliverable*, no. 3.6 (2017): p. 6.

¹² Tom Nicholas, "Technology, Innovation and Economic Growth in Britain Since 1870," in *The Cambridge Economic History of Modern Britain*, ed. Roderick Floud, Jane Humphries, and Paul Johnson (Cambridge: Cambridge University Press, 2014), p. 17.

The 1955 White Paper set out the British programme for the development of nuclear power, acknowledging both the military and civilian uses of nuclear energy. It pledged: 'the peaceful applications of nuclear energy now demand attention. Nuclear energy is the energy of the future.'¹³ This expansion of nuclear science remained closely linked with military applications, despite the promotion of positive outputs of nuclear power stations 'powering lives rather than destroying them.'¹⁴ Furthermore, the nuclear power programme served to increase Britain's international prestige through this display of scientific and technological prowess.¹⁵

The production of 'cheap power' made the erection of nuclear power stations more palatable to the British public and helped to maintain energy independence.¹⁶ However, even though Britain had generated more nuclear power than any other nation, the plans for the large scale nuclear programme did not come to fruition as coal and imported oil remained cheaper options.¹⁷ The British Government continued to advocate the advantages of civilian uses of nuclear energy to reassure the public by promising cheap electricity, the potential for atomic cars and medical uses of radiation.¹⁸ Despite this positive spin on nuclear energy, British citizens during the 1960s were increasingly aware of growing international tensions connected with nuclear weapons and the rise of the Campaign of Nuclear Disarmament which stressed the potential harm of nuclear energy.¹⁹ Although there was some resistance, the plans for a new experimental fast reactor based at Dounreay had already been outlined in the 1955 White Paper and was under construction.²⁰

¹³ HMSO, *A Programme of Nuclear Power*, (London, 1955), p. 1.

¹⁴ Linda Ross, "'Nuclear Fission and Social Fusion': The Impact of the Dounreay Experimental Research Establishment on Caithness, 1953-1966" (PhD University of the Highlands and Islands, 2019), p. 58.

¹⁵ Ian Welsh, *Mobilising Modernity: The Nuclear Moment* (London: Routledge, 2000), p. 54-55.

¹⁶ HMSO, *A Programme of Nuclear Power*, (London, 1955), p. 8.

¹⁷ David Edgerton, *The Rise and Fall of the British Nation: A Twentieth-Century History* (London: Penguin, 2018), p. 293.

¹⁸ Grant, "The Imaginative Landscape of Nuclear War in Britain, 1945-65," p. 96.

¹⁹ Holger Nehring, "Cold War, Apocalypse and Peaceful Atoms: Interpretations of Nuclear Energy in the British and West German Anti-Nuclear Weapons Movements, 1955-1964," *Historical Social Research* 29, no. 3 (2004); Sophie Forgan, "Atoms in Wonderland," *History and Technology* 19, no. 3 (2003).

²⁰ HMSO, *A Programme of Nuclear Power*, (London, 1955), p. 2.

Dounreay Experimental Reactor Establishment

The programme for nuclear power, outlined in 1955, confirmed a ‘full-scale experimental model of a “fast breeder” reactor capable of producing power’ was going to be sited at Dounreay.²¹ The plan suggested this fast breeder would be compared with the gas-cooled and liquid-cooled reactors built elsewhere, so that the most commercially suitable type would be utilised in the future for efficient electricity production.²²

In the late 1950s, fast breeder reactors were attractive to the British Government as they had the potential to produce more fuel for reactors than used to start the reaction by converting Uranium-238 into Plutonium-239. This was particularly attractive as uranium supplies were limited and there was the risk that imported uranium could be withheld for political reasons.²³ The British Government funded fast breeder reactors in an effort to secure energy sources, echoing similar developments in the USA and USSR.²⁴

Dounreay was chosen as the home of the first experimental fast breeder reactor in Britain, on the site of a former RAF airfield on the north-east coast of Scotland. This location was ideal: its remoteness and low population density meant the risks were reduced in the event of an accident in comparison to siting the power station elsewhere in Britain. Geographically on the coast there was an ample supply of water and stable bedrock suitable for hosting a nuclear power station.²⁵ Furthermore, as a former RAF station and government-owned land, the site could be used for development much quicker than if the land had to be purchased.²⁶

Local reactions to the news of this industrial project were wholly positive and signalled ‘future prosperity’ in an area in decline.²⁷ Journalist Fyfe Robertson reported in 1956 the excitement at Dounreay’s construction, commenting: ‘the adventurers of the new

²¹ HMSO, *A Programme of Nuclear Power*, (London, 1955), p. 2.

²² HMSO, *A Programme of Nuclear Power*, (London, 1955), p. 2.

²³ Wooldridge and Druce, *Golden Egg or Poisoned Chalice? The Story of Nuclear Power in the U.K.*, p. 213-14.

²⁴ Dounreay Heritage Strategy Dounreay Site Restoration Ltd, ‘Dounreay Heritage Strategy’, 2010, p. 35.

²⁵ Ross, “‘Nuclear Fission and Social Fusion’: The Impact of the Dounreay Experimental Research Establishment on Caithness, 1953-1966,” p. 61-62.

²⁶ Malcolm C. Grimston and William Nuttall, *The Siting of U.K Nuclear Power Installations* (Cambridge: University of Cambridge, 2013), p. 7.

²⁷ Ross, “‘Nuclear Fission and Social Fusion’: The Impact of the Dounreay Experimental Research Establishment on Caithness, 1953-1966,” p. 72.

Elizabethan Age are the nuclear physicists...[who] bring us...a thing more precious than gold- power, our industrial life-blood, the prerequisite of a new leap in living standards.²⁸

As fast breeder reactor technology was primitive, an experimental reactor was required to produce data and experience for future development of this type of reactor.²⁹ The Dounreay Fast Reactor produced data firstly as a demonstration of fast breeder technology, then proceeded as a materials irradiation facility, all while generating electricity.³⁰ As an experimental site pioneering technology, Dounreay certainly contributed to the Cold War competition between nations towards technological superiority as 'it was not about energy production, but developing an unknown technology.'³¹

Such a large-scale project made an impact not only on the locality but on the scientific community, proving theories and generating data. The relationship between Dounreay and the Atomic Weapons Research Establishment (AWRE) at Aldermaston strengthens the Cold War connections to Dounreay. Dounreay and Aldermaston exchanged fuels such as Plutonium and Uranium Oxide in support of experiments surrounding fast breeder reactors.³²

Maintaining high safety standards and control of the reactor required a technologically advanced control room from which the reactor could be remotely operated. The control room was vital in ensuring this experimental reactor functioned smoothly and guaranteed any errors could be dealt with or the reactor would be shut down. I will now consider the biography of the DFR control room to highlight its active life before eventually becoming a museum object. I will also consider the points at which Cold War meanings may have become attached.

²⁸ Christoph Laucht, "'Dawn—Or Dusk?'" Britain's Picture Post Confronts Nuclear Energy," in *The Nuclear Age in Popular Media* (New York: Springer, 2012), p. 137.

²⁹ HMSO, *A Programme of Nuclear Power*, (London, 1955), p. 18.

³⁰ Rowland F. Pocock, *Nuclear Power its Development in the United Kingdom*, ed. Engineers Institution of Nuclear (London: Unwin Brothers Ltd, 1977), p. 78.

³¹ Mulholland, Ejohwomu, and Chan, "Spatial-Temporal Dynamics of Social Value: Lessons Learnt from Two U.K Nuclear Decommissioning Case Studies," p. 6.

³² Fissile Materials, 'Plutonium and Aldermaston – An Historical Account', fissilematerials.org, <https://fissilematerials.org/library/mod00.pdf>, Accessed: 12 January 2022.

Dounreay Fast Reactor Control Room

This biography of the Dounreay Fast Reactor control room will consider the original construction of Dounreay, key technical components of the control room, and explore its use life. At each stage of the object biography, different actors become associated or involved in altering the biography of the control room. These people attach their own meanings and values on to the control room throughout its lifetime.

The construction of the Dounreay Experimental Reactor Establishment began in March 1955 with contractors from across Britain contributing their expertise (Fig. 2.3). Motherwell Bridge Engineering and Alexander Findlay and Co Ltd. were responsible for erecting the iconic Dounreay sphere containing the fast reactor core.³³ The project costing £28.5 million brought a workforce of almost 3000 people, with most coming from local areas.³⁴ As a fast breeder reactor without a moderator to slow down the neutrons, Dounreay engineers were challenged to ensure levels of reactivity did not increase too rapidly. Such sudden increases, they feared, would heighten the risk of explosion: 'the control system of the reactor had to be of a very high order.'³⁵ The creation of the DFR control room was essential in physically observing the reactor.



Fig. 2.3: Dounreay Sphere under construction ©Nuclear Decommissioning Authority.

³³ Caithness, 'Fast Reactor', Caithness.org, <http://www.caithness.org/fpb/dounreay/history/fastbreeder/>, Accessed: 23 February 2021.

³⁴ C. N. Hill, *An Atomic Empire: A Technical History of the Rise and Fall of the British Atomic Energy Programme* (London: Imperial College Press, 2013), p. 148.

³⁵ Fred Roberts, *Sixty Years of Nuclear History: Britain's Hidden Agenda* (Charlbury: Jon Carpenter, 1999), p. 91-92.

By definition, a control room is a space whose meaning depends on being 'part of a larger space in and on which it is designed to act.'³⁶ Furthermore, objects in a control room are dynamic and require continuous monitoring, whether remaining unchanged for long periods or displaying unpredictable rhythms which necessitate a human response.³⁷ The Dounreay Fast Reactor control room allowed trained operators to control the reactor from this space, which was deliberately separate from the reactor to provide an extra layer of safety in the event of an accident.

Using an assembly of instrumentation, monitoring equipment and control panels, the purpose of the control room is to relay real-time information to monitor the environmental conditions of the reactor, ensuring safe levels are maintained. Several experienced companies who specialised in different aspects of reactor maintenance and control, designed, and supplied each piece of apparatus for the DFR control room. Electrical instrumentation companies competed to have their equipment used in the new and exciting nuclear power stations.

Companies such as Honeywell-Brown Instruments, George Kent Ltd 'Masters of Instrumentation', Ekco Electronics Ltd and General Electric Co., were keen to show their products in advertisements naming which nuclear power stations they were used in.³⁸ The *Journal of the British Nuclear Energy Conference* dedicates sections in the beginning and end of the journal to advertisements from companies with interests in providing expertise for nuclear power stations.³⁹ Honeywell's advertisement uses an internal photograph of the DFR control room to show its equipment - the square monitors – in use (Fig. 2.4).⁴⁰

The image is neatly cropped into the iconic sphere shape in sync with the image of Dounreay's sphere tucked behind this internal photo. The inclusion of active people in the vicinity of the equipment confirms that these products function successfully and allow potential customers to imagine using these pieces of cutting-edge technology themselves. The man in a white coat offers connotations of science at work and acts

³⁶Valerie November and Laurence Creton-Cazanave, "Inquiry in Control Rooms: An Analysis Through the Lenses of Space, Time and Practice," in *International Conference on Information Systems for Crisis Response and Management* (Rio de Janeiro, Brazil: 2016), p. 2.

³⁷ November and Creton-Cazanave, "Inquiry in Control Rooms: An Analysis Through the Lenses of Space, Time and Practice," p. 3.

³⁸ *Journal of the British Nuclear Energy Conference*, Vol. 2, No.1, (January 1957).

³⁹ *Journal of the British Nuclear Energy Conference*, Vol. 2, No.1, (January 1957).

⁴⁰ *Journal of the British Nuclear Energy Conference*, Vol. 4, No.1, (January 1959), p. xxvi.

as a symbol of power and knowledge. Similarly, Norah Campbell highlights the use of technical details in marketing as a visual aesthetic, describing: 'scientific symbology has been integrated into popular culture as a visual device, and its inherent meaning is not as important as its presence as authority.'⁴¹ Companies like Honeywell and Ekco Electronics also used their expertise to contribute to military projects during the Cold War and had provided monitoring equipment for nuclear reactors producing fuel for weapons. Much like Ferranti, these companies are subtly contributing to the wider Cold War by advancing British power in science and technology.⁴²

xxvi ADVERTISEMENTS

Reliable Honeywell instruments stand guard against waste and danger . . . in the central control room at Dounreay and in the containment sphere where the reactor itself is housed.

£20,000,000 protected at Dounreay...

Honeywell is Instrumental

Honeywell
 *First in Control*

WRITE OR SEND THE COUPON TODAY for more information to Honeywell Controls Ltd, Ruislip Road East, Greenford, Middlesex. Telephone: Wuxlow 2333

Please send items ticked
 Brochure S.A.D.I. reviewing the entire range of Honeywell Industrial Instrumentation
 Specification Sheet 104 (Strip Chart Recorders)
 Specification Sheet 100 (Circular Chart Recorders)

NAME _____
 APPOINTMENT _____
 ADDRESS _____

Branches in the principal cities of the U.K. and throughout the world.

A massive investment of supreme national importance, the reactor station at Dounreay is monitored by Honeywell instruments in three vital ways:

Keeping the reactor safe ElectroniK Recorders monitor reactor variables — critical temperatures . . . neutron flux . . . thermal power. Honeywell Micro Switches close emergency shut-down circuits at danger point.

Keeping it cool Pressure and Flow Meters control sea water cooling . . . relate seabound heat flow to turbine demands . . . prevent water returning to the steam heater at too high a temperature.

Keeping it efficient ElectroniK Recorders receive signals from ion chambers within the breeder blanket . . . depict events at the reactor core . . . enable the nuclear reaction rate to be adjusted to current demands.

Fig.2.4: Honeywell advertisement, *Journal of the British Nuclear Energy Conference*, Vol 4. No.1, Jan 1959.

⁴¹ Norah Campbell, "The Technological Gaze in Advertising," *Irish Marketing Review* Vol.19, 1&2 (2007): p. 12.

⁴² David Edgerton, "The 'White Heat' Revisited: The British Government and Technology in the 1960s," *Twentieth Century British History* 7, no. 1 (1996): p. 53.

The DFR went critical on 14 November 1959, meaning the nuclear chain reactions had begun functioning successfully and were being monitored in the DFR control room. After the Second World War, there was a shift towards remote control 'starting with the fundamental transformation of inserting an instrument panel between the human and the object being operated, and gradually replacing mechanical parts with servomechanisms.'⁴³ Workers on twenty-four-hour shift rotas monitored readings from the fourteen panels and the control desk, which are divided into three categories: measurements, control and safety.⁴⁴ As A. B. Gillespie described: 'the instrumentation is necessary to ensure that no error of judgement on the operator's part, or the occurrence of a fault in some component, can bring about a situation which might result in the reactor getting out of control and damaging itself', highlighting the crucial nature of reactor instrumentation control.⁴⁵ Without the control room the reactor could not function safely, making it one of the most important pieces of equipment on site. It has the ability to shut down the reactor when required, via the emergency shut down button, usually referred to as the scram button.⁴⁶

People regarded Dounreay as a pioneering scientific project built to establish the feasibility of fast breeder reactors and to provide data and operating experience for designing a prototype reactor for full scale production in the future.⁴⁷ UKAEA Reactor Engineer H. J. Grout advocated Dounreay as of 'paramount importance to ensure that the industry is backed by adequate research facilities, including research reactors of the various types... and facilitates for the study and testing of reactor components under operating conditions.'⁴⁸ Former shift manager, David Sprague recalled the moment the DFR went live: 'the Head of the Atomic Energy Agency... was splashing around the champagne' to congratulate those responsible for achieving criticality.⁴⁹ This small ceremony emphasises how proud the scientists, engineers and Dounreay staff were of their achievement, which was confirmed by the instrumentation in the

⁴³ Deane Cormac, "The Control Room: A Media Archaeology," *Culture Machine* 16 (2015).

⁴⁴ A.B. Gillespie, 'The Control and Instrumentation of a Nuclear Reactor', *Journal of the British Nuclear Energy Conference*, Vol.1, No.2, (July 1956), p. 96.

⁴⁵ A.B. Gillespie, 'The Control and Instrumentation of a Nuclear Reactor', *Journal of the British Nuclear Energy Conference*, Vol.1, No.2, (July 1956), p. 96.

⁴⁶ This button shares its name with the acronym SCRAM of the Scottish Campaign to Resist the Atomic Menace who actively opposed nuclear power. SCRAM Energy Bulletin, No.1, 1977.

⁴⁷ Dounreay Site Restoration Ltd, 'Dounreay Heritage Strategy', p. 30.

⁴⁸ H.J Grout, 'The Use of Research Reactors in Nuclear Power Development', *Journal of the British Nuclear Energy Conference*, Vol.1, No.1, (January 1956), p.35.

⁴⁹ David Sprague interviewed by John Dunn, 14 December 2011, p. 7 of transcript.

control room. The DFR turning critical marked the beginning of a phase of experiments which contributed to the wider Cold War scientific research and development community. The senior staff members are more likely to recognise their contributions to Cold War science in comparison to everyday Dounreay workers as they communicated their findings with other key organisations such as the AWRE at Aldermaston.⁵⁰

The Dounreay workers, who spent hours monitoring and checking the dials and instruments in the control room, are the people who know this environment most intimately. These workers operated in tandem with another shift team who would respond to any issues raised in the control room and act on the data received by altering the reactor.⁵¹ Former Shift Manager Don Ryan recalled the logistics of running a shift: 'The control room was normally manned by myself or my principal foreman, together with two general workers, one at the control desk and one logging results, swapping over when shift went on. So, there'd be four of us there, maybe three if it was teatime.'⁵² Ryan's memory of the fluctuation between three- or four-members during break times highlight how this must have impacted on the responsibilities of those remaining in the control room while they were a member short. This recollection also emphasises the human experience of working in this environment, where stopping to make tea is considered and is a key part of a shift. Each member of this team had their own responsibilities and tasks to complete. However, due to the communal physical space, this cohabitation meant that the workers could share their experiences and knowledge of the tools they were working with and often anticipate problems or irregularities before the machines detected them.⁵³ Ryan's recollections make no reference to the Cold War when discussing his role or the environment of the DFR control room. This may be because he did not see how his role was connected to the wider research and development of the nuclear community. Equally he may not have been prompted to consider the Cold War in his interview with John Dunn.

Another DFR worker, David Sprague recalled an anecdote about the variety of tasks undertaken, describing: 'you went in one day and you never knew what you were going

⁵⁰ Fissile Materials, 'Plutonium and Aldermaston – An Historical Account', [fissilematerials.org, https://fissilematerials.org/library/mod00.pdf](https://fissilematerials.org/library/mod00.pdf), Accessed 12 January 2022.

⁵¹ John Dunn, interviewed by Sarah Harper, 1 February 2021.

⁵² Don Ryan, interviewed by John Dunn, 2 November 2011.

⁵³ November and Creton-Cazanave, "Inquiry in Control Rooms: An Analysis Through the Lenses of Space, Time and Practice," p. 5.

to face.⁵⁴ He mentioned receiving a call from the reactor manager prior to his shift to check in on his up-coming tasks, when the manager arrived in the morning for a progress report, Sprague said 'we're still exactly where I told you we were last night. He said, "Ah at least you haven't gone backwards."⁵⁵ This story highlights how interactions with the DFR control room could be intense and exciting such as when it went critical and during experiments, to the normal everyday shifts which demonstrated the importance of the reactor remaining steady to ensure reactor safety.

These relationships between the workers and the object enhance the cultural biography of the control room as people invested their time and careers to using the control room as a powerful tool to influence the function of a nuclear reactor.⁵⁶ Former DFR control room workers would respond differently to the public if this was to be displayed in a museum. Unlike those unfamiliar with Dounreay, former workers have tacit knowledge about how the control room functioned and intimately know its role in the wider site.

Furthermore, former workers are more supportive of nuclear power as they have more knowledge and personal connections than members of the public. Nuclear power stations often welcomed visits from key politicians, public figures, and Royalty to help showcase the benefits of nuclear energy and to encourage the public to attach positive meanings to nuclear power stations.

On 14 August 1961, Queen Elizabeth the Queen Mother visited Dounreay to inaugurate the work of the DFR after extensive modifications and to witness the successful function of the reactor.⁵⁷ The image in Figure 2.5 shows the Queen Mother seated at the DFR control room desk holding an image of the reactor core, perhaps as a visual aide to explain how the DFR functions. The staff surrounding the control desk, including DFR Project Manager K.J Henry to the right of the Queen Mother, are all wearing white coats which are symbolic of scientific innovation and discovery. Her commanding gesture beyond the camera is perhaps her way of directing attention to a part of the control room she would like to know more about, with the experts beside

⁵⁴ David Sprague, interviewed by John Dunn, 14 December 2011.

⁵⁵ David Sprague, interviewed by John Dunn, 14 December 2011.

⁵⁶ Sally M. Foster and Siân Jones, "The Untold Heritage Value and Significance of Replicas," *Conservation and Management of Archaeological Sites* 21, no. 1 (2019): p. 13.

⁵⁷ Walter Patterson, "Going Critical: An Unofficial History of British Nuclear," (London: Paladin, 1985), p. 98.

her willing to offer an explanation. The Aberdeen Evening Express reported on this visit, calling the event 'A Royal Surprise for Atom-Men', describing how the Queen Mother 'threw a switch in the control room and immediately increased the operating power of the reactor.'⁵⁸ This image (Fig. 2.5) was taken around the time she was permitted to 'throw' one of the control rooms switches which would generate movement and results on the corresponding equipment surrounding her. This was the Queen Mother's second visit to Dounreay, having previously toured the site in August 1957.



Fig. 2.5: Her Majesty the Queen Mother visiting the DFR Control Room in August 1961. ©Nuclear Decommissioning Authority

This is not the first time the Royals have been associated with nuclear power and promotion of new technology as Her Majesty the Queen officially opened Calder Hall on 17 October 1956.⁵⁹ This Royal Visit provided a wealth of publicity and the opportunity to display the site as a place of technological advancement and the future of energy production in Britain. Ian Welsh describes the Royal family as a prime source

⁵⁸ Aberdeen Evening Express, 'A Royal Surprise for Atom-Men', 17 August 1961, p.1.

⁵⁹ Peter Bunyard, *Nuclear Britain* (London: New English Library, 1981), p. 29-30.

of symbolic legitimisation, mobilised to show their support for the nuclear industry and encourage the imagery of 'exploration, imperial splendour and colonial rule.'⁶⁰ This feeds into the Cold War competition for superiority in scientific and technological developments but also harks back to Britain as a great industrial leader, despite in reality this not being the case.

The British Government were keen to promote nuclear power as the Suez Crisis in 1956 and petrol shortages, led to the decision to expand the nuclear programme as the supply of uranium from Canada seemed assured.⁶¹ This places Dounreay in the midst of the Cold War, as the site is part of the perceived race to technical superiority in which Britain remained behind superpowers, the USA and the USSR. As Walt Patterson suggests, Dounreay only marginally led the world in fast breeder reactors in the 1960s as the development of an American Enrico Fermi fast breeder reactor suffered a fuel meltdown making it fall behind.⁶²

The DFR provided new data and lessons for creating the next generation of reactor, the Prototype Fast Reactor (PFR), which eventually supplanted the role of the DFR. In February 1966, the construction of the PFR began at Dounreay, aiming to become a large commercial fast breeder reactor, following on from promising results from the DFR.⁶³ There was some friendly competition between those working on the DFR and PFR control rooms respectively. Don Ryan recalls the recruitment of workers to the PFR control room: 'initially there were a lot of people who felt PFR was the big kudos thing, you were a second-class citizen if you were asked to remain', however DFR bosses reassured remaining DFR workers implying some 'quality' had to be retained which smoothed some ruffled feathers.⁶⁴ The PFR connected to the national grid in 1975 and ran for a short time in parallel with the DFR.

Lord Christopher Hinton, who had supervised the design and construction of the DFR, shut down the reactor from the control room in a ceremony on 23 March 1977.⁶⁵ After eighteen years of active life, the DFR control room continued to be used to monitor the

⁶⁰ Welsh, *Mobilising Modernity: The Nuclear Moment*, p. 41-42.

⁶¹ Bunyard, *Nuclear Britain*, p. 30.

⁶² Patterson, "Going Critical: An Unofficial History of British Nuclear," p. 114.

⁶³ Hill, *An Atomic Empire: A Technical History of the Rise and Fall of the British Atomic Energy Programme*, p. 151.

⁶⁴ Don Ryan, interviewed by John Dunn, 2 November 2011.

⁶⁵ Wooldridge and Druce, *Golden Egg or Poisoned Chalice? The Story of Nuclear Power in the U.K.*, p. 215-16.

pressure, temperature, and coolant of the reactor for safety purposes. Eventually with advances in computing, these readings were transferred to computers and read digitally, making the control room instruments and panels redundant.⁶⁶ The meaning of the DFR control room slowly changed from being a focal point for managing the first fast breeder reactor to gradually became less important as it was replaced by the Prototype Fast Reactor.

This begins the final chapters of the DFR control room's use life and marks the beginning of a period of uncertainty and transition to the eventual decommission process. In 1998, the Government decided to terminate the development of fast breeder reactors, leading to the PFR's shutdown in 1994.⁶⁷ During the 1990s, the control room acted as the DFR incident control centre where temporary display boards were placed carefully one metre away from the panels 'so that the original features were not affected.'⁶⁸ The effort to protect the panels highlights the consideration given to the heritage of the control room and recognition of this as a part of history. From 2000, the Dounreay site turned their attention towards decommissioning and developed a programme of work to dismantle and remove radioactive material from the DFR.⁶⁹ At this point the DFR control room is at the beginning of the end of its use life as it is no longer valued for its original function and is in decommission but is recognised as a piece of redundant technology and worth preserving.

The DFR control room has held different meanings for those who have interacted with this room at various points of its existence: those who installed the instruments and those employed by Dounreay to monitor the reactor and eventually those dismantling the room for historic preservation. Although those workers in the control room were aware of their important role in the development of new technology, few would recognise this as contributing to the Cold War. Of the interview transcripts of former DFR control room workers shared by John Dunn, none mention the Cold War in any context as influencing their work. The lack of Cold War meanings ascribed to the control room by Dounreay workers is unsurprising: they saw their roles as primarily developing nuclear technology rather than nuclear weapons and therefore removed

⁶⁶ John Dunn, interviewed by Sarah Harper, 1 February 2021.

⁶⁷ Gunn, "A Unique Journey in Preserving Nuclear Industrial Heritage," p. 178.

⁶⁸ James Gunn, 'Removal of DFR Control Room Panels and Desk Final Condition Report', Dounreay Site Restoration Ltd, 2015, p. 15.

⁶⁹ John Dunn, interviewed by Sarah Harper, 1 February 2021.

from the military aspects of the Cold War. This perception was strengthened as the nuclear power stations came to be part of the surrounding local communities. Sean Johnstone's work on nuclear workers suggests that, 'atomic scientists' became more visible in communities specifically developed around nuclear power stations, their role was valorised as not working on dangerous nuclear weapons but on socially useful nuclear energy production.⁷⁰ As Dounreay has transitioned into a decommissioning phase, current and former staff members are now sharing their pride in their contribution to society through nuclear energy by preserving and commemorating elements the site. The next section will consider the decommissioning phase of the control room towards becoming a museum object and will highlight the role of key stakeholders in bringing this to fruition.

Transition Phase: Active Life to Decommissioning Phase

The decommissioning process of a nuclear power station aims to restore the occupied land as far as possible back to its original state. Decommissioning sites follow detailed plans to dismantle and remove contaminated material and publicise their predicted completion dates to make the public aware of the long-term legacy of the sites. Prompted by a meeting between the UKAEA and Historic Scotland in 2007, Dounreay's decommissioning plans included consideration for the heritage qualities of the built environment and the material culture associated with the site. Atkins Heritage produced a heritage strategy for Dounreay in 2008, with input from Historic Scotland and local and national heritage organisations to develop best practice approaches to historic conservation.⁷¹ Although the decommissioning process intends to remove everything from site, the life of the site can continue through objects as museum artefacts.

When questions were asked about what to do with the DFR control room, John Dunn, Dounreay Heritage Officer, said 'don't dump it, for goodness sake, we'll offer it to museums.'⁷² John's response to the idea of the control room being disposed of rather than preserved highlights his own attachment to the room and slight distress in his

⁷⁰ Sean Johnstone, "Segregated Specialists and Nuclear Culture," in *Nuclear Ethnographies*, ed. Sean Johnstone (Manchester: Manchester University Press, Forthcoming), p. 1.

⁷¹ Gunn, "A Unique Journey in Preserving Nuclear Industrial Heritage," p. 178.

⁷² John Dunn, interviewed by Sarah Harper, 1 February 2021.

need to find an alternative home for it. By suggesting donating the control room to a museum, John is offering a valid and viable solution to preserving the object and one which is mutually beneficial to a museum and enhances the reputation of Dounreay as community and heritage minded. Donating to museums acts as a way to prevent key pieces of technology and historically rich objects from being lost forever. Museums also provide appropriate conditions and in most cases access to conservation treatments if required, to improve the longevity of the object's life. With John's advice, the DFR control room began a careful decommissioning process to ensure the panels and desk could be safely transferred to a museum in the near future.

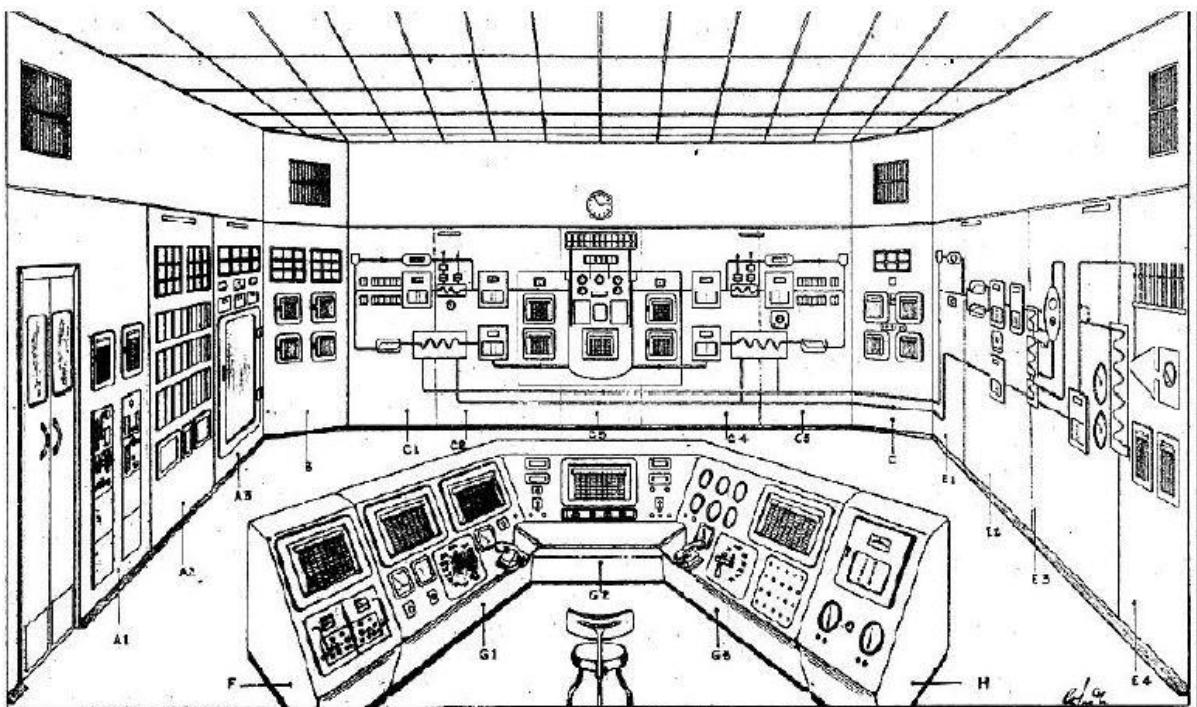


Fig. 2.6: This schematic drawing of the DFR control room gives a sense of the scale of this 14m by 10m space and the difficulties of storing or displaying it in future.

Transferring the DFR control room to a museum involved a long process of dismantling and checking of this large space. The DFR control room measures approximately 14m by 10m with all the panels and desk contained within this space.⁷³ This makes the control room borderline between an object and an example of a built environment (Fig.2.6). It is not easily portable and requires a large amount of reassembly. This brings into question the status of the DFR control room as an object or not. In Steven

⁷³ James Gunn, 'Removal of DFR Control Room Panels and Desk Final Condition Report', Dounreay Site Restoration Ltd, 2015, p. 7.

Leech's study of Neatishead, an assemblage of objects donated by the RAF was used to recreate a Cold War operations room curated as if RAF personnel had recently left. Although a visitor would assume this room was original to the site, it has actually evolved over a number of years as new material was acquired.⁷⁴



Fig. 2.7: DFR Control Room desk being dismantled in 2013, DFR Condition Report.

In its form as a built environment, the DFR control room contributed towards decision making involving the reactor during times of experimentation in line with Cold War research and development in nuclear technology.⁷⁵ However, as a dismantled object now separated in ISO containers, each panel and the control desk could potentially be viewed, displayed, or interpreted individually as redundant technology rather than as part of the original control room. Therefore, for former and current workers at Dounreay the control room loses some of its value as it is removed from its original environment where it is no longer physically part of the Dounreay site or connected to the reactor it once controlled.

One former engineer commented: 'Of course we lost the control room...I mean that would have been lovely to have kept the whole thing in the DFR', emphasising the

⁷⁴ Leech, "Echoes from the Recent Past: An Archaeological Ethnography of Historic Cold War Radar Sites in the U.K," p. 157.

⁷⁵ Don Ryan, interviewed by John Dunn, 2 December 2011.

disappointment in the future donation to a museum.⁷⁶ This situation is comparable to Sally Foster's study of monumental carved stones in which she suggests, 'visitors can only begin to appreciate the meaning of the sculpture if they can fully understand its context as part of the fabric of the site and landscape, both past and present.'⁷⁷ However, as the DFR control room encompasses almost the full contents of the original room, the museum has the ability to recreate the DFR control room very closely to how it originally was prior to the decommissioning process.



Fig. 2.8: DFR control desk showing wear and adaptations by workers. ©Gair Dunlop

The dismantling work on the DFR control room began in summer 2013, which involved relocating instrument readouts, moving the incident control centre, and beginning to carefully remove the panels and control desk into ISO containers (Fig. 2.7).⁷⁸ The removal of the desk from the centre of the room left behind a ghostly outline on the floor as a permanent reminder of what was once there. Similarly, the paper charts

⁷⁶ David Broughton, interviewed by John Dunn, 14 August 2014.

⁷⁷ Sally M. Foster, *Place, Space and Odyssey: Exploring the Future of Early Medieval Sculpture* (Rosemarkie: Groam House Museum, 2001), p. 2.

⁷⁸ James Gunn, 'Removal of DFR Control Room Panels and Desk Final Condition Report', Dounreay Site Restoration Ltd, 2015, p. 16.

remain frozen in time displaying their final readings at the time of shut down; another ghostly reminder of the functioning period of the control room's life.⁷⁹

The desk and panels show wear in concentrated places where paint is missing and there are scratches and marks on the surfaces. This patina is evidence of the human interaction with the control room from workers routinely pressing the same buttons and switches to control the reactor (Fig. 2.8). Unlike Grant McCracken's description of patina as serving 'as a visual proof of status' and giving objects symbolic significance, the patina of the control room is more about connecting the objects directly to people rather than improving status of the object.⁸⁰ In the Putnam Gallery at Harvard University, notes, cables, improvised signs and even a bolted-on pencil sharpener remain connected to the control panel of a Cyclotron particle accelerator, which directly links this piece of high-tech machinery to the humans who used it.⁸¹ Furthermore, Siân Jones suggests material wear and patina are important in forming authenticity as demonstrated by her research at the Nova Scotia Highland Village Museum where worn floorboards and bannisters were for visitors a sign of past life and connections to people who had previously inhabited the buildings in the past.⁸²

Although this dismantling process began before a suitable museum was found, there was confidence a recipient would be sourced. John Dunn describes the attractive qualities of the DFR control room to a museum: 'control rooms tended to be a bit like a James Bond film with valves and all that sort of dials...which is why they are highly prized in museums because now everything is computerized and screens and it's quite bland compared to what they were in the 50s and 60s.'⁸³ In this comment John connects the DFR control room with the popular culture of its era- the early James Bond films where scenes show similar looking infrastructure in the fictional nuclear-powered missile launcher control room.⁸⁴ Furthermore, John's comment alludes to the aesthetic values he attaches to the control room by suggesting that museum visitors

⁷⁹ Science Museum Group, Acquisition Proposal for the DFR Control Room (E2013.477), 17 August 2012, p. 1.

⁸⁰ Grant David McCracken, *Culture and Consumption: New Approaches to the Symbolic Character of Consumer Goods and Activities* (Bloomington: Indiana University Press, 1988), p. 32.

⁸¹ Alberti, *Curious Devices and Mighty Machines: Exploring Science Museums*.

⁸² Jones, "Experiencing Authenticity at Heritage Sites: Some Implications for Heritage Management and Conservation," p. 140.

⁸³ John Dunn, interviewed by Sarah Harper, 1 February 2021.

⁸⁴ For example, the first James Bond film *Dr. No* from 1962 featured scenes of a control room for a nuclear-powered missile launcher. 'James Bond Gadgets- Dr No Gadgets', 007James.com, https://www.007james.com/gadgets/dr_no.php, Accessed: 28 April 2022.

would also be drawn to the now old-fashioned analogue controls which visually and functionally differ from modern day equivalents.

Unlike some modern, digital control systems, this control room was mechanical with switches, levers and buttons and a visual view of the reactor painted on the wall linked to dials controlling that part of the reactor, which would make a great visual display in a museum (Fig. 2.9). This is comparable with the design and layout of other Cold War era British nuclear power stations, such as Calder Hall and Chapelcross which also featured simplified reactor layouts on the wall of the control rooms.⁸⁵



Fig. 2.9: Main DFR Control Room panel showing layout of reactor. DFR Condition Report

Dounreay and other nuclear sites like those mentioned are also subject to adhering to safety protocols when dismantling key parts of their sites. At this stage, the DFR control room is edging closer to becoming a museum object as it is preparing to move from a nuclear environment to a museum setting. Before an object is removed from a nuclear site, there are a number of practical procedures that need to take place. Even though the control room was not in a radioactive area, there is a choreography of decommissioning checks which are conducted to ensure objects can be safely removed. There are additional considerations to gathering nuclear objects as they need to be fully checked for radiological contamination or other dangerous

⁸⁵ For further information on Chapelcross Nuclear Power Station see Sarah Harper, *The Solway Military Coast: A Story of Conflict, Courage and Community* (Eastriggs: The Devil's Porridge Museum, 2018).

substances. This has stopped several items being gathered and donated to museums and is an additional limitation that nuclear objects have over other industrial material culture. John Dunn describes the importance of this examination, emphasising: 'we can't really donate stuff that is active or potentially radioactive, so we've got to make double sure to double check to make sure there is no activity and contamination involved.'⁸⁶

In late 2013, qualified surveyors and senior asbestos specialists checked the DFR control room for asbestos and Polychlorinated Biphenyls prior to the dismantling process beginning. They discovered and sampled some low-level asbestos in the cable sheathing behind the panels, in a few of the transformers and in other minor areas which were appropriately disposed of.⁸⁷ There is additional corresponding paperwork going alongside these checks to ensure there is a permanent record, archived and approved by the Dounreay Site Restoration Limited (DSRL) and the Nuclear Decommissioning Authority (NDA).⁸⁸ These safety reports were passed onto the museum along with detailed photographs and documents placed inside each crate which detailed the contents and their original use.⁸⁹ The careful decommissioning process of the DFR control room made the transition to becoming a museum object smoother as the recipient museum would be able to accept the control room with the knowledge it was safe and uncontaminated.

DFR Control Room Becomes Museum Object

In terms of the DFR control room's object biography, the transition from active life to becoming a heritage object was directly influenced by the decommissioning plans of the Dounreay site as a whole. In the forward planning for the site, preserving heritage objects emerged as a priority and subsequently led to the creation of John Dunn's role as heritage officer to make assessments about what could and should be preserved. In this way, John's passion for preservation and conveying the importance of

⁸⁶ John Dunn, interviewed by Sarah Harper, 1 February 2021.

⁸⁷ 'Asbestos Demolition Survey of DFR Control Room Control Panels and Associated Specified Areas (Zone F)', CSS Asbestos Laboratory, Dounreay Site Restoration Limited, 2013, p.5.

⁸⁸ John Dunn, interviewed by Sarah Harper, 1 February 2021.

⁸⁹ John Dunn, interviewed by Sarah Harper, 1 February 2021.

Dounreay heritage to Dounreay stakeholders ultimately ensured the DFR control room would become a museum object rather than being dismantled and destroyed.

After the Dounreay Fast Reactor control room had been dismantled and carefully packed into three ISO containers, it began its transition to becoming a museum object. The control room is beginning to feel the 'museum effect', where although this is a sturdy and robust piece of technology, it is treated more delicately than before to ensure its condition remains the same from when it was in situ at Dounreay.⁹⁰ At this stage, the control room was packed up without a home to go to.

John Dunn was responsible for finding a suitable recipient museum for the control room. The first potential home was Caithness Horizons⁹¹, a local museum based in Thurso's old town hall, which has strong connections to Dounreay as after the Dounreay visitor centre closed all of its objects were transferred to Caithness Horizons.⁹² However, due to the large size of the DFR control room this option was not available. After this offer, Caithness Horizons accepted the donation of the smaller scale control room from the Dounreay Materials Testing Reactor (DMTR) in December 2014.⁹³ John Dunn and other Dounreay staff worked closely with the museum to repaint and rewire the DMTR control desk so it would light up and helped with the interpretation.⁹⁴

After refusal from Caithness Horizons, John Dunn approached National Museums Scotland as there was already an established relationship between Dounreay and NMS: NMS has been part of the heritage advisory group working with Dounreay, offering advice mainly from staff in the Science and Technology department. The annual meeting reports from the Dounreay Heritage Advisory group highlight the research activities Dounreay have conducted or been involved in such as facilitating academic research and giving presentations about their heritage activities.⁹⁵ The

⁹⁰ Alpers, "The Museum as a Way of Seeing."

⁹¹ Caithness Horizons opened in 2008. The museum closed in February 2019 due to financial difficulties, until funding was granted in late 2019. However, due to disruption caused by the Covid-19 pandemic, the museum aims to reopen in late 2021 and will be renamed the North Coast Visitor Centre aiming to attract North Coast 500 tourists.

⁹² John Dunn, interviewed by Sarah Harper, 1 February 2021.

⁹³ BBC News, 'Dounreay Control Room Given to Thurso Museum', [bbc.co.uk, https://www.bbc.co.uk/news/uk-scotland-highlands-islands-30326670](https://www.bbc.co.uk/news/uk-scotland-highlands-islands-30326670), Accessed: 13 January 2022.

⁹⁴ John Dunn, interviewed by Sarah Harper, 1 February 2021.

⁹⁵ Dounreay, 'Dounreay Heritage Annual Report 2018 to 2019', [www.gov.uk, https://www.gov.uk/government/publications/the-work-being-carried-out-to-preserve-the-history-of-dounreay/dounreay-heritage-annual-report-2018-to-2019](https://www.gov.uk/government/publications/the-work-being-carried-out-to-preserve-the-history-of-dounreay/dounreay-heritage-annual-report-2018-to-2019), Accessed: 29 April 2022.

reports also list the objects gathered by Dounreay which are eligible for donation to both Caithness Horizons and NMS.⁹⁶ Although NMS was a realistic alternative to Caithness Horizons, due to space limitations they were unable to commit to acquiring the control room.

Upon hearing this predicament and having an interest in preserving nuclear material culture, the Science Museum Group (SMG), based in London, approached Dounreay with an offer to acquire the control room in 2014.⁹⁷ Although SMG offered a solution and an opportunity to preserve the DFR control room, there was a public outcry from locals, angered it was being transferred to England rather than remaining in Caithness or at least Scotland.

Local newspapers reported the public reaction to this donation expressing: 'It must stay! That is the rallying call from community representatives left outraged by the decision to move an iconic piece of Dounreay to England instead of it being preserved for posterity in Caithness'⁹⁸ and described the plan to move the control room to London as 'controversial.'⁹⁹ John Thurso, the Caithness MP, argued Caithness had been an accommodating host to Dounreay for over 60 years and should be involved in the decommissioning process and believed any artefacts should remain locally.¹⁰⁰ He reiterated: 'There has not been a single person in the community who even had an inkling this decision was in the offing.'¹⁰¹ Furthermore, local historian and former Dounreay employee Iain Sutherland disapproved of the arrangement, emphasising if the control room could not stay in Caithness it should go to NMS 'rather than go all the way to London.'¹⁰² This outcry, particularly from two stalwarts of the community, shows how much value they assign to Dounreay and its infrastructure and how upset they are when its removal is threatened. This upset is less about what the DFR control room is or its function, but about the history and impact on the Caithness area it represents.

⁹⁶ Dounreay, 'Dounreay Heritage Annual Report 2019 to 2020', [www.gov.uk, https://www.gov.uk/government/publications/the-work-being-carried-out-to-preserve-the-history-of-dounreay/dounreay-heritage-annual-report-2019-to-2020](https://www.gov.uk/government/publications/the-work-being-carried-out-to-preserve-the-history-of-dounreay/dounreay-heritage-annual-report-2019-to-2020), Accessed: 29 April 2022.

⁹⁷ Dounreay Stakeholders Group, 'Dounreay Heritage Implementation Plan', 2014, p. 3.

⁹⁸ *Caithness Courier*, 'Fury over London Museum Plan for Dounreay Icon', 19 February 2014.

⁹⁹ *John O' Groats Journal*, 'Reluctant Acceptance on Reactor Transfer South', 21 March 2014.

¹⁰⁰ *Caithness Courier*, 'Fury over London Museum Plan for Dounreay Icon', 19 February 2014.

¹⁰¹ *The Scotsman*, 'Dounreay's iconic reactor move to London', 19 February 2014.

¹⁰² *Caithness Courier*, 'DFR relic should stay in Caithness', 19 March 2014.

The Nuclear Decommissioning Authority (NDA) assured the community that the control room in London would act as a signpost for Caithness and highlight the area's contribution to the nuclear industry.¹⁰³ The reaction from the public demonstrates the strong attachment local people have to Dounreay and its heritage and the anguish at the possibility of losing this part of their national identity. Traditionally the Caithness area has been branded as being a self-reliant and a close-knit community which is limited by its geographical position and lack of natural resources.¹⁰⁴ There is clearly a Scottish connection made by Caithness locals to the Dounreay control room shown in their anguish about it leaving Scotland. This adds a Scottish dimension to the authenticity of the control room as those who have interacted with it most closely are likely to be Scottish and because of its long life situated in the very north of Scotland. The backlash around the control room moving out of Scotland emphasises the strong connection between the authenticity of an object and the environment in which it is viewed and how much the connection to its original environment is inherent within the object.

This situation is similar to that of the Hilton of Cadboll cross-slab where the upper half was removed from Scotland in 1921 and gifted by Captain Roderick Willoughby Macleod to the British Museum in London. However, after a campaign led by the Society of Antiquaries of Scotland petitioning and adding political pressure to the government, the British Museum agreed to return the cross-slab to Scotland via a transfer to the National Museum of Antiquities in Edinburgh, now National Museums Scotland.¹⁰⁵ Although the theme and contexts of these objects contrast, local versus national discourses are apparent in their biographies and demonstrate the continued debate on Scottish material appearing in English museums.

After the control room controversy, John Dunn began to report heritage activities to the Dounreay Stakeholder Group (DSG). The DSG were disappointed to only hear about the move of the control room in the press rather than from DSRL directly.¹⁰⁶ John admitted: 'that was a learning point...because the locals do like their local

¹⁰³ *Caithness Courier*, 'Fury over London Museum Plan for Dounreay Icon', 19 February 2014.

¹⁰⁴ Ross, "'Nuclear Fission and Social Fusion': The Impact of the Dounreay Experimental Research Establishment on Caithness, 1953-1966," p. 114.

¹⁰⁵ Heather James et al., *A Fragmented Masterpiece: Recovering the Biography of the Hilton of Cadboll Pictish Cross-Slab* (Edinburgh: Society of Antiquaries of Scotland, 2008), p. 238.

¹⁰⁶ John Dunn, interviewed by Sarah Harper, 1 February 2021.

heritage, even though it was nuclear heritage, and it is quite controversial.¹⁰⁷ The attachment of Caithness locals to Dounreay and related objects is telling as historically in Scotland nuclear power has been more controversial in comparison to the rest of Britain. From the late 1970s, there were public protests disputing the siting of waste facilities in the north-west of Scotland and the largest anti-nuclear protest and occupation occurred at the Torness construction site.¹⁰⁸ However, for the people of Caithness, the familiarity of Dounreay was engendered by the site being part of their everyday lives, which makes them perceive it as less of a threat.¹⁰⁹

A study of several English nuclear power stations, including Bradwell and Oldbury, found that local residents had made 'risk ordinary' by being so familiar with the nuclear site, but they did feel it caused them anxiety created by potential risks intermittently throughout their lives.¹¹⁰ The risks posed by Dounreay to public safety and the environment have not gone unnoticed, as Malcolm Chalmers highlights: 'the problems have arisen from the site's civil rather than its military activities, the latter having attracted surprising little comment in Scotland.'¹¹¹ Furthermore, this highlights the social value locals have attached to Dounreay, both the tangible in terms of employment, training and education opportunities but also the intangible such as the culture and sense of place they attach to Dounreay.¹¹²

The outcry from Caithness locals encouraged DSRL and heritage partnership organisations to reconsider the removal of the DFR control room from Scotland. The former keeper of the Science and Technology Department at NMS, Alex Hayward, consulted with SMG and NMS senior colleagues to establish a favourable solution. Alex Hayward had previously worked with Robert Bud, the then Head of Science and Medicine at SMG, which made it easier to formulate the first joint ownership agreement SMG had ever entered.

¹⁰⁷ John Dunn, interviewed by Sarah Harper, 1 February 2021.

¹⁰⁸ Butler and Bud, "United Kingdom Short Country Report," p. 8.

¹⁰⁹ Karen A Parkhill et al., "From the Familiar to the Extraordinary: Local Residents' Perceptions of Risk When Living with Nuclear Power in the U.K.," *Transactions of the Institute of British Geographers* 35, no. 1 (2010): p. 46.

¹¹⁰ Parkhill et al., "From the Familiar to the Extraordinary: Local Residents' Perceptions of Risk When Living with Nuclear Power in the U.K.," p. 46.

¹¹¹ Malcolm Chalmers, *Uncharted Waters: The U.K. Nuclear Weapons and the Scottish Question*, ed. William Walker (East Linton: Tuckwell Press, 2001), p. 136-37.

¹¹² Mulholland, Ejohwomu, and Chan, "Spatial-Temporal Dynamics of Social Value: Lessons Learnt from Two U.K Nuclear Decommissioning Case Studies," p. 2.

On 26 June 2014, NMS and SMG signed a joint agreement to share custody of the DFR control room. The principles of the agreement pledged the two museums would work together to preserve the control room for public benefit, recognise the association of the control room with the pioneering scientific enterprise of northern Scotland and each take responsibility for storing and displaying the control room as part of an agreed programme.¹¹³ With the paperwork signed, the DFR control room became subject to the realities of museum life and forward planning to make the SMG and NMS acquisition fair. Each museum agreed to store or display the control room on a five-yearly basis, with the recipient party responsible for organising transport from the other museum.¹¹⁴ SMG agreed to take the control room first from 2015 until 2020 to be stored at their collections stores in Wroughton, near Swindon.¹¹⁵ The publicity after the new plans for the control room was much more favourable than previously. The *John O' Groats Journal* described Dounreay's 'antiquated control room will be preserved for future generations in two museums in Scotland and England' and mentioned the transfer of the smaller Dounreay Materials Test Reactor control desk to Caithness Horizons.¹¹⁶

Unusually, the DFR control room was accessioned by both museums and if either museum displays the control room, they are responsible for condition checking, photographing, and cataloguing the control room panels once unpacked.¹¹⁷ The arrangement to acquire the DFR control room between two national museums is uncommon but not unprecedented. In 1994, the V&A and the National Galleries of Scotland jointly acquired *The Three Graces*, a marble statue depicting the daughters of Zeus.¹¹⁸ The position of the DFR control room and *The Three Graces* in two national collections offers them an element of prestige and the chance to be researched or displayed in different environments and contexts. SMG had included in the acquisition

¹¹³ Memorandum of Agreement between National Museums Scotland and Science Museum for Joint Acquisition of Control Room from Dounreay Fast Reactor, 2015, p. 1.

¹¹⁴ Memorandum of Agreement between National Museums Scotland and Science Museum for Joint Acquisition of Control Room from Dounreay Fast Reactor, 2015, p. 1.

¹¹⁵ Email between Jane Carmichael (former Director of Collections) to Fiona Stewart (Director of Estates and Facilities) and Heather Caven (Head of Collections Services) CC'd Alex Hayward (S&T Keeper), 15 June 2014.

¹¹⁶ *John O'Groats Journal*, 'Museums offer Dounreay Reactor a Place in History', 31 June 2015.

¹¹⁷ Memorandum of Agreement between National Museums Scotland and Science Museum for Joint Acquisition of Control Room from Dounreay Fast Reactor, 2015.

¹¹⁸ Art Fund, 'The Three Graces', artfund.org, <https://www.artfund.org/supporting-museums/art-weve-helped-buy/artwork/5413/the-three-graces>, Accessed: 13 January 2022.

proposal plans to display the DFR control room in a 2016 exhibition on nuclear power, but these plans changed.¹¹⁹

By this point the control room becomes immersed in regular museum protocols at both NMS and SMG, whereby it is viewed as an artefact rather than a functioning piece of technology. It has gone through proposed acquisition protocols for both museums and has been assigned two accession numbers: T.2015.19 for NMS and E2013.477 for SMG. Both proposals justify acquisition of the DFR control room by describing the technical qualities and achievements of Dounreay. The NMS acquisition proposal highlights the place of the control room in parallel with other Dounreay objects in the collection and on display as well as it being representative of the continuing debates around nuclear power in Scotland and the decommissioning of nuclear power stations.¹²⁰ The control room also gained a place in the Industry and Commerce collection overseen by the Technology section of the Science and Technology department at NMS. In contrast, at SMG it is included in a dedicated Nuclear Energy collection under the supervision of the curator of Infrastructure and Built Environment based in the Technology and Engineering team.¹²¹ The collection at SMG is clearly dedicated to purely nuclear energy with other objects such as turbine blades, fuel elements, reactor models and radiation meters also included in this collection. In comparison at NMS, the control room also shares a collection category with other nuclear related objects such as the Hunterston A control desk, fuel elements and safety equipment but also more broadly with objects from agriculture, communications, and mining. The descriptions from the collections management systems of NMS and SMG are both broad: the NMS record states 'Dounreay Fast Reactor (DFR) control room panels, operator desk and display cabinet, Dounreay Nuclear Power Plant, Caithness, Scotland, c. 1959 – 1977',¹²² while SMG similarly describes: 'Control room instrument panel from the Dounreay Fast Reactor (DFR), made by Honeywell and the UK Atomic Energy Authority, Thurso, Scotland, 1959.'¹²³

How the control room has been categorised and labelled in this museum context is interesting as it has been assigned its value as representing energy production. This

¹¹⁹ Science Museum Group, Acquisition Proposal submitted by Robert Bud, 17 August 2012, p. 2.

¹²⁰ National Museums Scotland, Proposed Acquisition written by Elizabeth Sinclair, 11 March 2021, p. 3. This form is an updated version compiled in light of the full transfer of title to NMS in 2021.

¹²¹ Email correspondence between Sarah Harper and Oscar Woodward, 4 January 2022.

¹²² Adlib record for T.2015.19, Dounreay Fast Reactor control room, National Museums Scotland.

¹²³ Email correspondence between Sarah Harper and Oscar Woodward, 4 January 2022.

means when searching for objects with Cold War connections, the control room would not appear, yet there is potential for it to be interpreted in this way. This is the case for many objects held by NMS and other institutions as objects which could be seen for having Cold War meanings but are not recognised. Curators and museum staff therefore have the power when cataloguing objects to do so with their view of the object in mind. Geoffrey Bowker and Susan Star describe classification as a system 'of boxes (metaphorical or literal) into which things can be put to do some kind of work – bureaucratic or knowledge production.'¹²⁴ Curators are tasked with cataloguing objects into usually predefined categories; however, individuals interpret the categories differently and could misunderstand them, meaning any kind of categorisation is not fool proof.¹²⁵ Nevertheless, the digital record can be amended in light of new information, this means that the designation of objects is only to some extent permanent. As a result, objects in the NMS collection can now be considered for having Cold War connections and have 'Cold War' added to the record as an additional descriptor or category.

Curators and museum staff working with the control room start to attach their own meanings and memories of working with the control room as an artefact. In terms of the Cold War meanings of the DFR control room, none of those connected with the object believed there were strong connections and instead saw significance in the control room for its technical merits. Elizabeth Sinclair, Curator of Technology at NMS, is responsible for the DFR control room within the Science and Technology Department. As a technology curator, her view towards the control room is more focused as an example of nuclear technology rather than a Cold War object but she acknowledges: 'although I do not think it is possible to escape the connections between nuclear energy technology and military applications.'¹²⁶ Furthermore, John Dunn who has personal experience both working at Dounreay while in operation and as a heritage champion for the site, agrees that he does not see the control room as a Cold War object but understands why other people might.¹²⁷ These opinions highlight how curators can be influenced by their own views which in turn makes inferences on how the control room is interpreted. John Dunn remarked he would like

¹²⁴ Geoffrey C. Bowker and Susan Leigh Star, *Sorting Things Out: Classification and its Consequences* (Cambridge, Massachusetts: The MIT Press, 1999), p. 10.

¹²⁵ Bowker and Star, *Sorting Things Out: Classification and its Consequences*, p. 13.

¹²⁶ Email correspondence between Elizabeth Sinclair and Sarah Harper, 10 January 2022.

¹²⁷ John Dunn, interviewed by Sarah Harper, 1 February 2021.

to see the DFR control room exhibited as a whole but understands this may not be possible due to the scale of the object.¹²⁸

At this point of the control room's biography, the future could be predicted with five-year periods at each museum. However, this plan became subject to change. According to the agreement, NMS were due to receive the control room in August 2020. However, due to the Covid-19 pandemic, SMG agreed to extend the agreement for a further year for transfer in 2021.¹²⁹ In a further turn of events, during logistical discussions about transferring the control room to NMS, SMG decided they would be willing to transfer full ownership to NMS.¹³⁰

The Curator of Infrastructure and the Built Environment at SMG, Oscar Woodward, produced a report with justifications for transferring the DFR control room to NMS permanently. Oscar suggested NMS was better placed as it would ensure the control room remained in Scotland, in a Scottish museum and as representative of the story of nuclear energy production and engineering in Scotland.¹³¹ Oscar further justifies this arrangement by mentioning that the control room will remain in a national collection meaning it would not lose this status. Incidentally, there is also the intention for SMG to acquire a control room from Calder Hall, the first nuclear power station in Britain which would represent Britain's nuclear energy history and also nuclear weapons fuel development.¹³² This transfer may have been more for space reasons and to rationalise the collection to ensure objects are preserved for the right reasons and they are not better suited elsewhere.

As NMS had already registered and accessioned the control room, it has been relatively straightforward to absorb it into the collection without further acquisition or justification processes. However, due to the scale of the control room in three large ISO containers it is too big to store at the National Museums Collections Centre (NMCC) at Granton and will be stored in commercial storage until display plans or future storage arrangements are made. The permanent return of the control room to Scotland would please those who originally opposed the move to England. All the

¹²⁸ John Dunn, interviewed by Sarah Harper, 1 February 2021.

¹²⁹ Meeting between NMS and SMG, 18 August 2020.

¹³⁰ Email correspondence between Jack Kirby (SMG) and Chanté St Clair Inglis (NMS), 8 February 2021.

¹³¹ Oscar Woodward, Dounreay Fast Reactor Control Room BOS Proposal, p. 2.

¹³² Oscar Woodward, Dounreay Fast Reactor Control Room Board of Survey Proposal, 2021, p. 3.

agreements and protocols described involving both museums highlight the ways the biography of the control room is altered during its early museum life, from originally not finding a suitable home, then the power of the Caithness community halting it being lost to London and being adopted by two national museums. Ultimately, the Caithness community achieved their goal of ensuring the control room remained in Scotland as it is now under full ownership of NMS. As a museum object, the DFR control room now takes on new meanings as a piece of material culture preserved in a national collection for the benefit of the public. This contrasts with its former life as an active piece of technology with the capability to control a nuclear reactor rather than valued for its aesthetic and historical values.

At this point of the DFR control room's biography, it has fully transferred into its new museum life where it will be valued for its history rather than its functionality. The biography of the Dounreay Fast Reactor control room emphasises how important different actors, who each attached their own meanings and agendas to the object, are in influencing the future of preserving nuclear and Cold War heritage. The meanings and attachments to the control room differ depending on the individual interacting with the object. There are the academics and cultural heritage research professionals with knowledge and skills relating to arts and humanities who see the control room as a valuable artefact and as a tool to use for interpreting different historical narratives. Nuclear engineers, scientists and policy makers who are experts on 'internal culture' see the meaning of the control room in the context of the nuclear industry and its merits as a piece of instrumentation. And finally, there are experts on the 'lived culture' of nuclear societies such as those living closely to Dounreay, members of opposition movements and people exposed to nuclear accidents.¹³³ All these people will have different opinions and perspectives of the DFR control room as an artefact and of its place within a Cold War narrative. There are points at which connections to the Cold War could be attached. However, none of those who interacted with the control room up to this point have recognised this connection, despite the object being a key example of nuclear culture. I will now consider Dounreay's approach to preserving heritage and particularly material culture more

¹³³ Eglė Rindzevičiūtė, *Nuclear Cultural Heritage: Position Statement.*, A.H.R.C Research Networking Project, (Kingston upon Thames: Kingston University, 2019), p. 5.

broadly and consider how nuclear material culture has previously been displayed in museums, with a focus on NMS.

Dounreay Heritage and Material Culture

Dounreay's heritage strategy is inspired by elements of nuclear culture research and acknowledges the site's role in contributing to Cold War era 'nuclear culture.'¹³⁴ Dounreay and particularly John Dunn have welcomed nuclear cultural researchers to assist in generating analysis of the impact of nuclear energy production in society and how these sites have engaged with heritage initiatives and programmes.¹³⁵ The strategy is in line with Christoph Laucht's broader definition of 'nuclear culture': Laucht encourages consideration of 'the sum of all experiences with regard to civilian and military uses of atomic energy, including such diverse layers as science and technology... society, culture, politics, identity, gender, race, ethnicity and class.'¹³⁶ The history of Dounreay could be considered from all of these perspectives. However, the scientific and technological achievements and the impact on Caithness society take precedence in the interpretation of Dounreay in many museums and publications. Nuclear facilities have different technologies, social impacts and hazards legacies which makes tailoring strategies for heritage preservation essential. These heritage plans aim to place each site in the context of the wider legacy of nuclear power in Britain.¹³⁷ Furthermore, by developing heritage strategies, nuclear sites are deflecting often negative associations with decommissioning, especially concerning nuclear waste, in order to highlight to future generations, the long-term benefits of these sites through heritage outputs.¹³⁸ Cornelius Holtorf and Anders Högberg highlight that both sides of the arguments for and against preserving the Dounreay sphere each use the

¹³⁴ Dounreay Site Restoration Ltd, 'Dounreay Heritage Strategy', p. 4.

¹³⁵ For example, Dr Egle Rindzevičiūtė is leading the 'Beyond Containment: The Making of Cultural Nuclear Heritage' project and Dr Linda Ross' thesis 'Nuclear Fission and Social Fusion': The Impact of the Dounreay Experimental Research Establishment on Caithness, 1953-1966', have both benefitted from academic collaboration with Dounreay.

¹³⁶ Jonathan Hogg and Christoph Laucht, "Introduction: British Nuclear Culture," *The British Journal for the History of Science* 45, no. 4 (2012): p. 487.

¹³⁷ Andrew Croft, "Dounreay Heritage Strategy: White Heat of Heritage," *ICOMOS–Hefte des Deutschen Nationalkomitees* 68 (2019): p. 108.

¹³⁸ Cornelius Holtorf and Anders Högberg, "Communicating with Future Generations: What are the Benefits of Preserving for Future Generations? Nuclear Power and Beyond," *The European Journal of Post-Classical Archaeologies* 4 (2014): p. 356.

benefit of future generations to support their views.¹³⁹ Furthermore, Holtorf and Högberg suggest that few heritage professionals have thought extensively about the long term future of their decision making.¹⁴⁰ In terms of the DFR control room, although it is positive that it has been preserved for posterity in a museum, it is unrealistic that it will be displayed permanently due to its size. And unless a space was specially created to house the DFR control room, due to space constraints it would need to remain in the containers meaning access would be reduced. However, retained artefacts like the control room are more manageable in comparison to preserving the built environment of Dounreay.



Fig. 2.10: Dounreay site and iconic sphere perched on the coast of Northern Scotland ©Nuclear Decommissioning Authority.

The preservation of the built environment is often the first thing to be considered for heritage purposes. Dounreay's heritage strategy attempted to consider realistically if certain buildings and structures, particularly the iconic sphere, could be preserved and what kinds of artefacts and records could be kept on or off site (Fig. 2.10).¹⁴¹ Those

¹³⁹ Holtorf and Högberg, "Communicating with Future Generations: What are the Benefits of Preserving for Future Generations? Nuclear Power and Beyond," p. 346.

¹⁴⁰ Holtorf and Högberg, "Communicating with Future Generations: What are the Benefits of Preserving for Future Generations? Nuclear Power and Beyond," p. 349.

¹⁴¹ Dounreay Site Restoration Ltd, 'Dounreay Heritage Strategy', p. 4.

producing the strategy came to the decision that the preservation of the sphere was not feasible, particularly in terms of the radiological risks, the substantive costs involved and the restrictions on the land. Historic Scotland 'cannot over-ride safety priorities, so cannot list the sphere' much to the disappointment of those who also rejected the Dounreay Heritage Strategy's advice.¹⁴²

Much like my personal memories of seeing the Chapelcross Nuclear Power station cooling towers as a beacon for being close to home, for Caithness locals the Dounreay sphere held similar connotations and is the visual representation of nuclear power for many.¹⁴³ However, the Dounreay heritage strategy offers other means of maintaining the legacy of Dounreay to compensate for this loss of a local landmark, especially through donating objects such as the control room.¹⁴⁴

The NDA has in the past focussed on collecting records, with object gathering as an afterthought. This is perhaps because the NDA have well established protocols for collecting records and have built a dedicated archive; the Nucleus, in Wick to accommodate all nuclear related material from 17 sites in Britain.¹⁴⁵ However, in recent years, the NDA has established a National Heritage Initiative to encourage other nuclear sites to learn from Dounreay's experiences and establish their own heritage programme.¹⁴⁶ This new initiative demonstrates a clear commitment to preserving nuclear heritage from within the industry, but also acts as a way to protect their heritage on their terms and in a favourable light. John Dunn is responsible for collecting objects and encouraging managers and colleagues to consider preserving items for heritage purposes at Dounreay.¹⁴⁷ Having previously been a chemist at Dounreay, John has an intimate knowledge and familiarity with the site and perhaps his close connections help in encouraging others to recognise they too are part of important nuclear history.

¹⁴² John Little, 'Save the dome of the Dounreay nuclear reactor', *The International Committee for the Conservation of the Industrial Heritage*, No. 52, Second Quarter 2011, p. 1.

¹⁴³ Dounreay Site Restoration Ltd, 'Dounreay Heritage Strategy', p. 41.

¹⁴⁴ Dounreay Site Restoration Ltd, 'Dounreay Heritage Strategy' p. 9.

¹⁴⁵ Nuclear Decommissioning Authority, 'NDA Archive: Nuclear (The Nuclear and Caithness Archives)', gov.uk, <https://www.gov.uk/government/case-studies/nda-archive>, Accessed: 29 November 2021.

¹⁴⁶ John Dunn, interviewed by Sarah Harper, 1 February 2021.

¹⁴⁷ Dounreay Stakeholders Group, 'Dounreay Heritage Implementation Plan', 2014, p. 3. Available at: [dounreaystakeholdersgroup.org, https://www.dounreaystakeholdergroup.org/wp-content/uploads/2019/06/download2496.pdf](https://www.dounreaystakeholdergroup.org/wp-content/uploads/2019/06/download2496.pdf)

The Caithness heritage website commended John's role commenting: 'he might not think so today, but future generations could regard John Dunn as the most important person ever to work at Dounreay...his role is to preserve aspects of the site that will give future generations a glimpse of life at Dounreay when the site itself has long gone.'¹⁴⁸ This local group is praising the dedication to protecting their local heritage and acknowledging the impact of Dounreay on Caithness and Scotland as a whole. The meanings and connections associated with Dounreay by people from Caithness are much stronger as they have lived and worked with Dounreay as a constant in their community. This means they are particularly passionate about how Dounreay is portrayed, especially in exhibitions outwith their local area. I will now examine nuclear and Dounreay related displays hosted by National Museums Scotland to understand how they have been perceived by those associated with Dounreay and the wider public and to explain the context within which the control room lies.

Nuclear Exhibitions

As the DFR control room has now been fully accepted into the NMS museum collection, it will join a wide range of other examples of scientific and technological innovations. Furthermore, the control room now has the potential to be included in exhibitions and further research. Displays and exhibitions have been used since the beginning of the civilian nuclear power programme as a tool to convey positive messages about nuclear power and to dispel worrying myths around nuclear. The National Museum of Scotland has exhibited nuclear energy and nuclear power stations in various forms. The Royal Scottish Museum (RSM, now NMS) hosted a travelling exhibition from the UKAEA titled 'Atoms at Work' in October 1960 which promoted peaceful uses of nuclear energy. Perhaps due to the divisive topic, travelling nuclear exhibitions were favourable because they were easy to display and to move on at short notice but also, they could reach larger audiences by being displayed in several cities in a short space of time. In 1980, the RSM presented a display organised by the Nuclear Power Information Group titled 'Atoms for Energy' which had a long schedule of British cities to visit throughout 1980 and 1981.¹⁴⁹ To counter this exhibition, the

¹⁴⁸ Caithness, 'Dounreay Heritage to be Preserved', Caithness.org, https://www.caithness.org/fpb/dounreay/dounreay_heritage/start.htm, Accessed: 17 February 2021.

¹⁴⁹ SCRAM Magazine, August/September 1980, p. 14.

Scottish Campaign to Resist the Atomic Menace (SCRAM) worked with RSM staff to prepare an alternative presentation on the potential dangers of nuclear energy which was displayed alongside 'Atoms for Energy.'¹⁵⁰ These exhibitions were displayed at the height of Cold War tensions when the CND and other groups actively opposed nuclear weapons and by association nuclear energy.

These opposing exhibitions indicate the museum's willingness to share both positive and negative accounts of nuclear energy, while also being in control of the temporary nature of these displays. It is difficult for museums presenting nuclear heritage to display all aspects of how nuclear power stations like Dounreay have impacted society and their position in global affairs. Any efforts to preserve heritage are generally positive and help promote 'identity formation and community strength.'¹⁵¹ However, nuclear heritage tends to tell a utopian story of scientific progress and the positive production of energy, largely omitting the risks, human casualties of nuclear weapons, public fear, and the environmentalist or anti-nuclear opposition.¹⁵² Despite this, these displays show there is room for both and they offer visitors a broader range of perspectives.

National Museums Scotland has hosted several displays in connection to Dounreay since the partnership with the site began, mainly highlighting its scientific merit. In 2011, the *Shaping Our World* display was installed to highlight the subtle ways science and technology impacts human lives. Part of this display included a section on radioactivity, which explained the original discovery of radiation and the work of pioneering scientists in the field.¹⁵³ The panels refer to Dounreay as a 'top secret test site' housing civil nuclear reactors and a military nuclear submarine facility with a large image of a submarine emerging from the sea and a slide rule nuclear weapons effect computer.¹⁵⁴ This description and imagery plays into the usual connotations of nuclear energy connected to the military and as a potential risk.

¹⁵⁰ SCRAM Magazine, August/September 1980, p. 14.

¹⁵¹ Anna Storm, Fredrik Krohn Andersson, and Eglė Rindzevičiūtė, "Urban Nuclear Reactors and the Security Theatre: The Making of Atomic Heritage in Chicago, Moscow and Stockholm," (2019): p. 113.

¹⁵² Storm, Krohn Andersson, and Rindzevičiūtė, "Urban Nuclear Reactors and the Security Theatre: The Making of Atomic Heritage in Chicago, Moscow and Stockholm," p. 113.

¹⁵³ *Shaping Our World* label text document, NMS Collection, 18 May 2011.

¹⁵⁴ *Shaping Our World* label text document, NMS Collection, 18 May 2011.



Fig. 2.11: The 'Energy' section of the *Scotland: A Changing Nation* gallery at the National Museum of Scotland. The sculpture of Dounreay is surrounded by equipment and models connected to other major scientific industries in Scotland. ©Sarah Harper

Dounreay is also featured in the *Scotland: A Changing Nation* gallery at NMS, which opened in 2011. The gallery shows visitors the experiences of people living in twentieth-century Scotland through themes of war, industry, daily life, emigration, and politics.¹⁵⁵ The industry section refers to Dounreay and the development of nuclear power in Scotland and the impact of the site on Caithness, among other Cold War era industries such as electronics produced by VSLI Vision and the production of silicon by Hughes Aircraft Incorporation. There are examples of early computers, and models and equipment relating to the oil and gas industry in Scotland (Fig. 2.11).

¹⁵⁵ National Museums Scotland, 'Scottish History and Archaeology Galleries, nms.ac.uk, <https://www.nms.ac.uk/national-museum-of-scotland/things-to-see-and-do/explore-the-galleries/scottish-history-and-archaeology/>, Accessed: 3 March 2021.

Although the Dounreay display is surrounded by themes of science and technology development, Dounreay is represented by a uranium glass sculpture of Dounreay created by Kate Williams, purchased by NMS in 2007 for £8000 (Fig. 2.12). The iconic Dounreay sphere and associated buildings glow green due to the ultraviolet underlighting through the uranium glass. The corresponding label reads: ‘the sculpture of Dounreay embodies the many fears around the nuclear industry...representing our complicated relationship with radioactivity, it was also inspired by the process of vitrification, a means of encasing radioactive waste in glass.’¹⁵⁶ This object is used by the museum to make a statement on nuclear power and juxtaposes with other areas of the museum explaining Dounreay’s endeavours in British science and technology development.

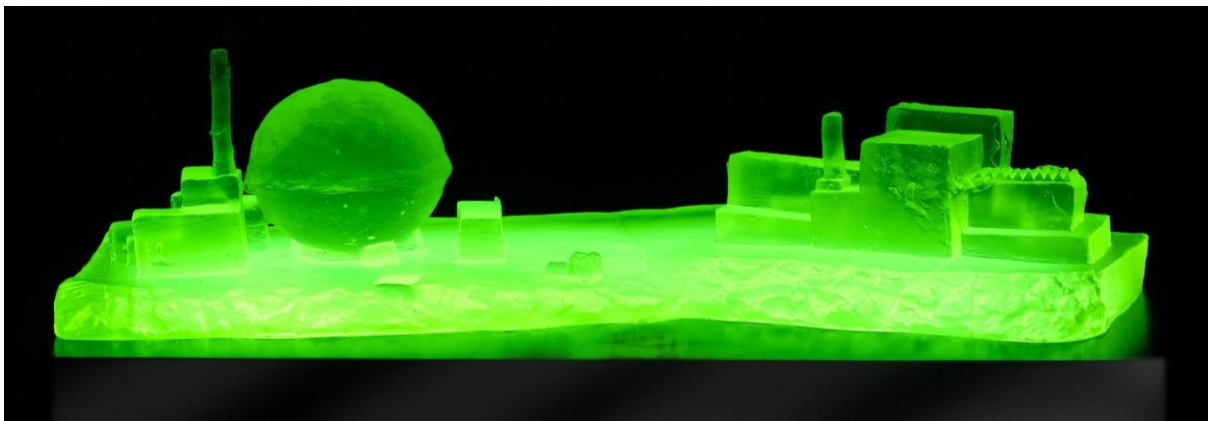


Fig. 2.12: Kate Williams’ sculpture of Dounreay made from Uranium glass. (T.2007.218) ©National Museums Scotland.

Although nuclear power is a controversial topic, the only complaints made to NMS regarding the Dounreay displays were from Dounreay or former employees of Dounreay. Heritage Officer John Dunn conveyed a complaint to the Keeper of Science and Technology, Alex Hayward about the factual inaccuracies of the labels in the *Scotland: A Changing Nation* galleries and offered to assist with the costs for new panels.¹⁵⁷ These inaccuracies included the incorrect date of criticality and the collection of contamination was actually gathered by Remotely Operated Vehicles

¹⁵⁶ Dounreay Nuclear Reactor by Kate Williams exhibition label *Scotland: A Changing Nation*, National Museum of Scotland.

¹⁵⁷ Email correspondence between Alex Hayward, Jane Carmichael and Alison Cromarty, 6 October 2011.

rather than robot submarines as the panel stated.¹⁵⁸ Although the panels were altered, Alex Hayward reiterated to colleagues, 'whilst we wish to provide factually correct information to visitors we reserve the right to place our own editorial interpretation on those facts... the changes Dounreay wishes to see are factual.'¹⁵⁹ John agreed with this stance in his recollections of this situation and commented on the reciprocal relationship of giving advice to each other, describing: 'we actually gave advice to the museum on the factual side of things for their panels... we can't have any influence for tone...but we certainly can on the facts so there's a two-way process there.'¹⁶⁰

Additionally, in 2019 a member of the Dounreay Stakeholder Group took umbrage with an exhibition label in the *Scotland: A Changing Nation* display and complained to the other DSG members.¹⁶¹ The Group was angered by the label: 'Now at the end of their life, all three reactors are being decommissioned, leaving a legacy of pollution and controversy. The land will remain contaminated for 300 years.'¹⁶² Their complaint argued that, arguing although there was some contamination, this issue had been resolved and would not leave a long legacy. In response, NMS assured the Group that they would draw on their expertise when the panels were next refreshed and referred them to other areas of the museum, such as the *Energise* gallery, which offer visitors a fuller picture of Dounreay, including social and economic benefits.¹⁶³

This incident further highlights the protective nature of ex-Dounreay staff and Caithness locals to the interpretation of Dounreay. Although over time nuclear scientists and engineers have been 'valorised' and commended for their efforts, incidents like this reignite negative connotations of nuclear energy.¹⁶⁴ Therefore, some nuclear workers feel they need to defend their industry and debunk common myths. Also, due to the controversial nature of the nuclear industry unlike other industries, its interpretation is always going to offend those who are pro or anti-nuclear. Perhaps in the future people connected to Dounreay and Caithness would also want to be

¹⁵⁸ Email correspondence between Tayce Phillipson and Alex Hayward, 17 October 2011.

¹⁵⁹ Email correspondence between Alex Hayward, Jane Carmichael and Alison Cromarty, 6 October 2011.

¹⁶⁰ John Dunn, interviewed by Sarah Harper, 1 February 2021.

¹⁶¹ Correspondence between Roger Saxon, Chairman of the Dounreay Stakeholder Group and National Museums Scotland, 15 July 2019.

¹⁶² 'Row over Dounreay Display at National Museum of Scotland', *The Press and Journal*, 5 October 2019.

¹⁶³ Correspondence between Samuel Alberti and Roger Saxon, Chairman of the Dounreay Stakeholder Group, 25 September 2019.

¹⁶⁴ Johnstone, "Segregated Specialists and Nuclear Culture," p. 9.

disassociated with Cold War activities if this narrative was included in a future exhibition. In these cases, NMS retained editorial interpretation but there are examples of other museums, particularly those funded by nuclear industry organisations for exhibitions, who find themselves almost forced to convey the message of the sponsors rather than that of the museum or as a reflection of public opinion.¹⁶⁵

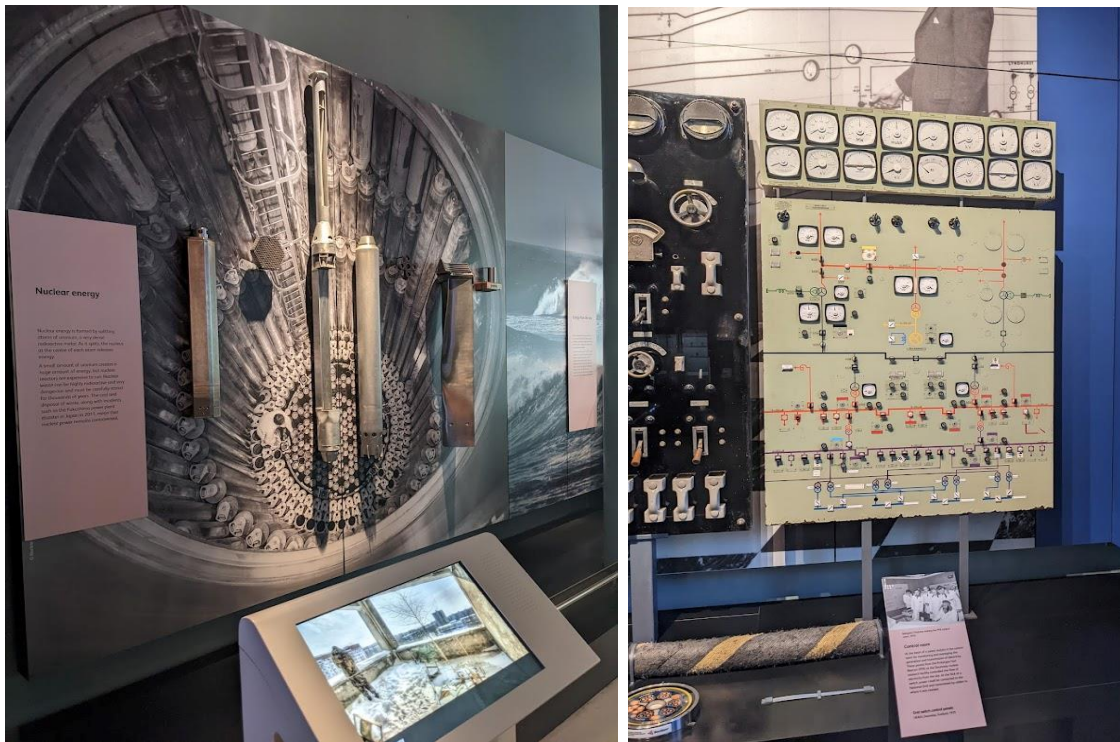


Fig. 2.13: 'Nuclear Energy' display in *Energise* gallery at the National Museum of Scotland. There are examples of fuel rods from Dounreay mounted on the wall over an image of the reactor and one of the PFR control panels. ©Sarah Harper.

DSRL and NMS have an important stakeholder relationship which although is not influenced by funding, it is carefully stewarded to ensure there is continuous dialogue and support between the two institutions. Furthermore, with mutual recognition of Dounreay as an important feature of Scottish industrial heritage, the Dounreay community are keen to have their objects safely preserved as much as NMS is keen to accept them. While curators were working on the *Energise* gallery in 2015, the relationship between NMS and Dounreay strengthened. This exhibition aims to explore the sources, generation, distribution and use of energy and the future uses of

¹⁶⁵ For example, the Science Museum's exhibition in the mid-1960s and another in the early 1980s funded by the UKAEA and British Nuclear Fuels. Forgan, "Atoms in Wonderland," p. 182.

science and technology to power lives.¹⁶⁶ Other exhibits surrounding the nuclear section focus on other means of electricity generation and interactives demonstrating how energy is produced. Dounreay is used as a prime case study into the nuclear industry in Scotland, with a dedicated touch screen to provide further information about the construction of Dounreay and its impact on Caithness. There is also a large image of the inside of a reactor with example fuel rods mounted on the wall and the PFR control panel in the distributing energy section (Fig. 2.13).¹⁶⁷

Representatives from Dounreay attended the official opening of the gallery and were pleased to see the Dounreay story and the PFR control panel displayed prominently.¹⁶⁸ This collaboration is mutually beneficial as NMS has a priority over objects being donated to museums and Dounreay's heritage is being preserved and displayed publicly without keeping the objects on site. Although there is some information on the interactive touch screens mentioning 'A New Atomic Age' and 'Protest and Opposition' on single slides, there is no explicit mention of the Cold War. The overall narrative of the *Energise* exhibition is about the production of energy meaning the Cold War is not mentioned as it does not fit with the wider theme. As an NMS object, the DFR control room is now subject to a variety of different interpretations and narratives if put on display in future. Until then, the control room remains in long term storage waiting for the next stage of its museum life with National Museums Scotland.

Conclusion

Historically the Cold War and nuclear heritage are inextricably linked, especially in the complex connections between military or civilian uses of nuclear energy. By exploring the biography of the Dounreay Fast Reactor control room, from creation to use life, to its redundancy and to becoming a museum object, we can identify how its meaning changes over time to different people and what kinds of values they assign to it. The

¹⁶⁶ Elsa Cox, Katarina Grant, and Haileigh Robertson, "Collecting the Personal: Stories of Domestic Energy and Everyday Life at the National Museum of Scotland," *Science Museum Group Journal*, no. 9 (2018): p. 1.

¹⁶⁷ Current *Energise* exhibition at the National Museum of Scotland, Edinburgh, 2021.

¹⁶⁸ Dounreay Site Restoration Ltd, 'Dounreay Report to Dounreay Stakeholder Group to end October 2016, p. 8. Available at: <http://www.dounreaystakeholdergroup.org/files/downloads/download2830.pdf>.

meaning of the control room to the original workers, who became attached to the instruments and knew them intimately, differs from those younger Dounreay workers who dismantled the room. Both appreciate the key role the control room played to operate the reactor and the wider impact of Dounreay on the Caithness community.

The value ascribed to the DFR control room has altered over its lifetime from being valued for its technical capabilities in supporting the success of the first fast breeder reactor in Britain, to being recognised for its heritage values to represent the success of Cold War era science. The outcry from the Caithness locals also demonstrated the social values attached to the DFR control room as they felt removing the control room from their locality or the country was like losing a part of their history and the community's identity.¹⁶⁹ In the museum setting, the DFR control room is valued for its role in nuclear energy and nuclear experimentation in Scotland as demonstrated by the catalogue and acquisition proposal descriptions. The artefact's value as a Cold War object is somewhat absent in the responses from Dounreay staff and the curators responsible for the control room now.

The control room as an artefact and the transition to its new museum life introduced a new range of individuals who view this object differently to those workers or local to Dounreay. Although these individuals all appreciate the heritage value of the control room, few recognise it as playing a part in the wider Cold War. The lack of connection to the Cold War is also apparent in previous and current displays regarding nuclear energy at the National Museum of Scotland.

Much like the other objects I have selected to analyse, the DFR control room is not an obvious 'Cold War' object to select. However, by exploring the environments in which these objects were created or present and the people who interacted with them at various points in their lives, we can see distinctly that these objects have been influenced in some form by the Cold War. As Thomas Parke Hughes encouraged, technologies like the DFR control room should not be viewed as individual devices, rather as a 'vast interdependent network of artifacts, institutions, people and social systems.'¹⁷⁰ This attention to people, social systems and institutions is also applicable

¹⁶⁹ Jones and Leech, "Valuing the Historic Environment: A Critical Review of Existing Approaches to Social Value," p. 5.

¹⁷⁰ Gabrielle Hecht and Paul Edwards, *The Technopolitics of Cold War: Toward a Transregional Perspective* (Washington, DC: American Historical Association, 2007), p. 273; Wiebe Bijker, Thomas

to the techno-politics and competition between nations to ensure superiority not through hot wars, but through advanced scientific and technological developments. The creation of the Dounreay Fast Reactor and subsequent Prototype Fast Reactor are part of this network of Cold War techno-politics.

The efforts to preserve the DFR control room demonstrate the interest invested in nuclear history and the associated material culture. Now with full custody of the control room, there is an opportunity for National Museums Scotland to learn more about Dounreay's connections to the Cold War and develop a Cold War narrative that is currently absent in the wider museum.

P. Hughes, and Trevor Pinch, eds., *The Social Construction of Technological Systems* (Cambridge Massachusetts: MIT Press, 1987).

Chapter 3: Readiness for Red Alert: Material Culture of the Royal Observer Corps

‘Yes, I remember the tests and the old SOPs / I’ve even still got the old set of post keys / the antique equipment they threw it all away / equipment we used to keep our enemies at bay.’¹

This excerpt from Laurence Holmes’ poem about his experiences in the Royal Observer Corps (ROC) expresses the nostalgia and connection he, and many ex-ROC Observers, felt towards the material culture associated with their Cold War role. ROC Observers were on the frontline, preparing their underground monitoring posts ready to report on the effects of a nuclear attack on Britain. The constant state of preparedness and readiness is key when considering the Cold War period. However, the material culture associated with this mentality has received little attention by historians.

As David Uzzell explains: ‘Cold War sites are different from other war sites in as much as they are not often in themselves scenes of conflict and death. Their importance and values lie in what they represent and what they could have been.’² This observation particularly applies to the built environment and associated objects of the ROC and their lack of mobilisation for war. The presence of monitoring posts scattered around Britain and the corresponding equipment and objects are evidence of an attempt to prepare for and react to a nuclear war that fortunately did not occur.

There is a significant connection between the built environment of ROC monitoring posts and the movability of their contents, as once removed from the static posts, the equipment becomes dislocated from its context. The fate of these objects separated from their original posts are worthy of consideration, with many entering new phases

¹ Graham West, *The Royal Observer Corps Association 1986-2006: A Celebration of the First 20 Years* (Royal Observer Corps Association, 2006), p. 1.

² David Uzzell, "The Hot Interpretation of the Cold War," in *Monuments of War: The Evaluation, Recording and Management of Twentieth Century Military Sites*, ed. John Schofield (London: English Heritage, 1998), p. 18.

of their life via online auction sites, rehomed in other monitoring posts, or becoming museum objects. I will explore this displacement of material culture from posts to establish the relationship between the Cold War built environment and the movability of the original contents.

Former Observers, enthusiastic amateurs and museums are actively collecting the material legacy of the ROC to furnish underground monitoring posts and relevant exhibitions to preserve their memory as examples of Cold War heritage. However, it is unclear how important these objects are in retelling this element of the Cold War story and how their authenticity as 'Cold War' objects is constructed. I will follow a biography of ROC material culture, from its creation to use life and to their redundancy and eventual transition into heritage objects in their afterlives, to highlight how authenticity is ascribed at various points by different actors. Interviews with former Observers, enthusiasts and post restorers will inform these observations. By focusing on the objects of the ROC rather than the built environment, we can examine objects that were witnesses to change from active to heritage lives. I will highlight the constant state of preparedness inherent in ROC material culture, explore the role ROC objects have played in the restoration of these posts and the reaction of visitors to these unusual environments. For context, I will first explain the origins of the ROC and its nuclear role.

The Royal Observer Corps

The Royal Observer Corps was a uniformed civilian organisation under the control of the Royal Air Force.³ The roots of the ROC can be traced back to the German Zeppelin raids during the First World War, when volunteer Observers would watch the skies manning searchlights. Their motto 'Forewarned is Forearmed' further cemented their role during the Second World War, where they received credit for their aircraft recognition abilities especially during the Battle of Britain, after which they were granted 'Royal' status.⁴

³ Royal Observer Corps, *Monitoring Posts Instructors' Manual*, July 1985. (EF.1992.95.82), Chapter 2, p. 1.

⁴ Mark Dalton, *The Royal Observer Corps Underground Monitoring Posts* (Monkton Farleigh: Folly Books Ltd, 2011), p. 3.

The ROC was temporarily stood down in May 1945, until increasing tensions with the Soviet Union and the development of jet aircraft justified their resurrection in January 1947. Equally, the advancement in nuclear weaponry increased the threat of an atomic attack on Britain meaning the practicalities of Observers monitoring out in the open was unwise. The role of the ROC needed to alter to combat this new threat. The Home Office created the United Kingdom Warning and Monitoring Organisation (UKWMO) in 1955 which would confirm a nuclear strike on Britain, warn the public of imminent fallout radiation and advise national authorities.⁵ With an already extensive network of posts across the country, the ROC were well suited to working with the UKWMO. The nuclear role of the ROC was to report any nuclear bomb bursts within range of their posts and monitor the resultant fallout.⁶ Observers reported to their designated Group Headquarters the predicted size of the yield of the bomb and the distance from the ground zero which would be triangulated with the other posts within a cluster and analysed. The role of the ROC highlights the emphasis on preparation and being forewarned, a quality which permeated through the mindset of the Observers and onto the equipment they required to fulfil their role.

Since the end of the Cold War, heritage bodies, museum professionals and enthusiastic amateurs have made substantial efforts to preserve sites of various Cold War activities. As Inge Hermann examined in her study of Cold War heritage and tourism, many site managers and local groups claim to have heroically 'discovered' or 'saved' these neglected sites for future generations.⁷ There are a number of 'lay' participants who advocate the preservation of Cold War sites as a means to celebrate the achievements of the scientists, the military and civilians in protecting peace and preventing war with the Soviet Union.⁸ These tend to be veterans, former employees or local people who believe their Cold War efforts can now and should be shared. Groups such as Subterranea Britannica, who have collated extensive research on all

⁵ Robert Clarke, "Landscape, Memory and Secrecy: The Cold War Archaeology of the Royal Observer Corps" (PhD University of Exeter, 2016), p. 152.

⁶ Simon Craine and Noel Ryan, "*Protection from the Cold": Cold War Protection in Preparedness for Nuclear War* (Sheffield: Wildtrack, 2011), p. 91.

⁷ Hermann, "Cold War Heritage (and) Tourism: Exploring Heritage Processes Within Cold War Sites in Britain."; Clarke, "Landscape, Memory and Secrecy: The Cold War Archaeology of the Royal Observer Corps." p. 219.

⁸ Strange and Walley, "Cold War Heritage and the Conservation of Military Remains in Yorkshire," p. 159.

underground structures in Britain, are drawing increasing attention to these former Cold War installations.⁹

However, as Gregory Ashworth warns: 'our built environments are increasingly cluttered with the museumified artefacts, monumentalised buildings and sacralised sites that previous societies believed were worthy of preservation for us and for future generations stretching into infinity', highlighting the perils of over-enthusiastic heritage site restorers.¹⁰ Due to the previously secret nature of these sites, many enthusiasts are attracted to the excitement, risk and discovery of the former intended uses for these installations.¹¹ Royal Observer Corps monitoring posts are prime examples of this drive to preserve Cold War heritage and the contents which furnished them. By using an object biography approach, I will highlight the points at which ROC material culture becomes recognised as Cold War heritage and demonstrate how different people engaged with these objects through collecting and post restoration. Through this examination, I will demonstrate how these different actors and environments ascribe authenticity and value to these Cold War objects.

Underground Monitoring Posts: Immovable Heritage

The context of an underground monitoring post is important in order to appreciate the uniqueness of the space and to show how the environment is key to the biography of ROC material culture (Fig. 3.1). To protect Observers from lethal exposure to radiation in the aftermath of an attack, posts were moved underground to provide shielding. Underground monitoring posts, totalling 1560 across Britain, were constructed from 1957 onwards of the same uniform design and equipment supplied. Posts were grouped into clusters of two to five posts, approximately 8 miles apart with one acting as the master post.¹² They had a 15ft entry shaft with a ladder down into two small rooms; a small chemical toilet cupboard and a larger 15ft by 7ft room from which Observers would operate the monitoring and communications equipment, as well as

⁹ Subterranea Britannica, [subbrit.org.uk](http://www.subbrit.org.uk/), <http://www.subbrit.org.uk/>, Accessed: 26 March 2020.

¹⁰ Gregory Ashworth, "Preservation, Conservation and Heritage: Approaches to the Past in the Present through the Built Environment," *Asian Anthropology* 10, no. 1 (2011): p. 11.

¹¹ Strange and Walley, "Cold War Heritage and the Conservation of Military Remains in Yorkshire," p. 160.

¹² Dalton, *The Royal Observer Corps Underground Monitoring Posts*, p. 15.

rest.¹³ The environment was naturally cool and damp, and relatively dark with only a 6 watt light bulb for illumination.¹⁴ The basic human needs of the Observers were covered despite the lack of running water or a constant supply of mains electricity.¹⁵

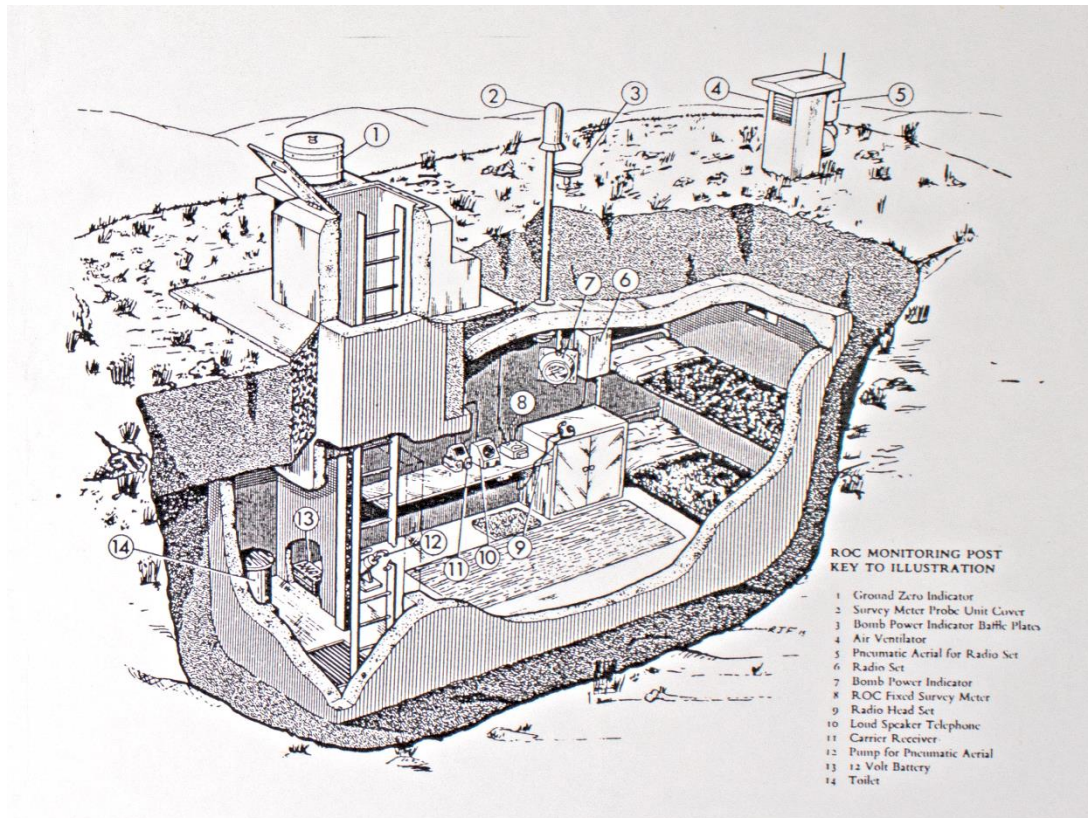


Fig. 3.1: 1950s schematic drawing of the equipment held in a Royal Observer Corps underground monitoring post. From *Nuclear War Games in Your Own Backyard?* (W.MS.2000.28.187), ©National Museums Scotland.

The underground space and the minimum visible infrastructure above ground were carefully designed to cater for the instrumentation and provisions required for the Observers. Above ground, aside from the entrance hatch and air vent, specific physical features and fixtures were designed to enable the equipment used below ground to function without the need for Observers to expose themselves to radiation above ground. This included the baffle plates which connected to the Bomb Power

¹³ Derek Wood, *Attack Warning Red: The Royal Observer Corps and the Defence of Britain, 1925 to 1975* (London: Macdonald and Jane's, 1976), p. 222.

¹⁴ Dalton, *The Royal Observer Corps Underground Monitoring Posts*, p. 18.

¹⁵ Wood, *Attack Warning Red: The Royal Observer Corps and the Defence of Britain, 1925 to 1975*, p. 243.

Indicator, an opening for the Fixed Survey Meter and fittings to attach the Ground Zero Indicator to a dedicated space next to the entrance shaft.¹⁶

The area underground was divided into a practical space to use the equipment and a dedicated space for Observers to rest and relax during quiet periods. Although all posts were issued with an identical inventory, each post to some extent was shaped by the human Observers who inhabited this unusual setting. Personalisation of the posts varied, with some simply making time saving alterations for using the equipment or making the space more comfortable. For example, some collapsed the bunkbeds to make it easier for sitting, with a curtain erected for privacy.¹⁷

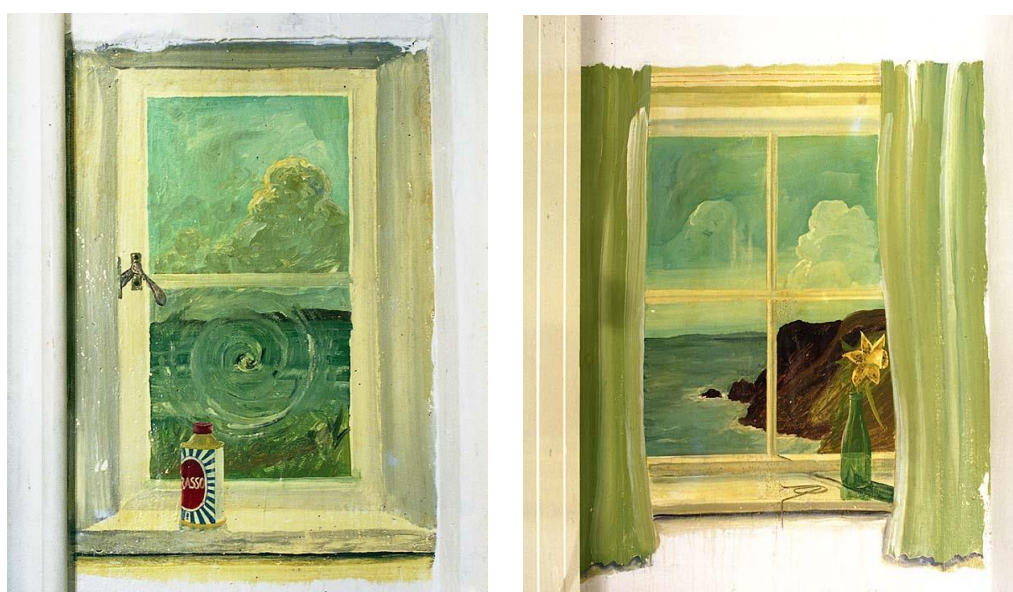


Fig. 3.2: Murals painted by Albert Laurie in the Elie post. ©Nick Catford

Aside from practical adaptations to the posts for the comfort of the Observers, some chose to add decorations to make these underground spaces more homely. An ex-Observer recalled the artistic additions made at the Elie post: 'Elie they had a mural painted on the back walls and they had windows painted on the side. People done their own thing to liven it up.'¹⁸ These murals are unusual and fascinating additions to the underground space as it emphasises the lack of real windows and creates an imagined scenic view to make the underground space more homely for Observers (Fig. 3.2). Also, from the position of the post slightly in land near Elie on the Fife coast,

¹⁶ Dalton, *The Royal Observer Corps Underground Monitoring Posts*, p. 44.

¹⁷ Jonathon Yarrow, interviewed by Sarah Harper, 14 February 2020.

¹⁸ Jonathon Yarrow, interviewed by Sarah Harper, 14 February 2020.

the view from the 'window' perhaps depicts a real view from the post above ground. The additions of a recognisable Brasso tin and a daffodil in a vase make the murals even more realistic. The addition of a window latch and curtains are like an optical illusion, making the murals seem like they could be interacted with. Albert Laurie's motivation for painting the windows is unknown. However, he may have painted them to have fun with the idea that an underground structure could have windows with a sea view and to connect this space to the human need for light, albeit imagined. These murals made the atmosphere of this dimly lit space more friendly to fellow Observers. Furthermore, they provided a virtual reality of an imagined view of nature where in reality this was an ordinary concrete structure.

Many brought their own personal items for their own comfort such as extra clothing and cooking utensils. Another ex-Observer described his addition to his post: 'Cups...everybody had their own cup because the plastic cups they gave you are disgusting...anything out of a plastic cup tastes vile so we all had our own.'¹⁹ Some brought things like playing cards, magazines and a few even set up small televisions using the 12v power supply to pass the time during long exercises.²⁰ This personalisation of the post demonstrates the human influence on this unusual environment. Emily Glass' research into Cold War era mushroom shaped bunkers in Albania also found evidence of personalisation by the soldiers who built and inhabited these spaces and left their mark via graffiti.²¹ Glass suggests: 'this graffiti has enabled the soldier-object relationship to be temporarily sustained beyond the conventional military use of the bunkers and into the present', which could also be applicable to the relationship between Observers and monitoring posts.²²

By designing and constructing over a thousand underground monitoring posts, the British Government cemented its determination to prepare and defend the nation during the Cold War. The contents of these posts also embody this inherent preparedness, particularly as these objects were brought together or created in response to the need to prepare for a nuclear attack. Each post was allocated an

¹⁹ Fred Allen, interviewed by Sarah Harper, 4 February 2020.

²⁰ Jonathon Yarrow, interviewed by Sarah Harper, 14 February 2020.

²¹ Emily Glass, "Once Upon a Time in Ksamil: Communist and Post-Communist Biographies of Mushroom-Shaped Bunkers in Albania," in *In the Ruins of the Cold War Bunker: Affect, Materiality and Meaning Making* ed. Luke Bennett (London: Rowman & Littlefield, 2011), p. 151.

²² Glass, "Once Upon a Time in Ksamil: Communist and Post-Communist Biographies of Mushroom-Shaped Bunkers in Albania," p. 151.

inventory of equipment and instruments required to fulfil their role as well as various pieces of domestic items and furniture to cater for the Observers. The small room underground was minimally furnished with a cupboard, instrument shelf and fold down table to accommodate the technical equipment, with a set of bunkbeds, and canvas chairs for the comfort of Observers.²³

The contents found underground included monitoring and communications equipment, domestic items, uniforms, and documents. It is useful to separate the technical equipment into monitoring and communications to distinguish their roles between tools to gather data and instrumentation to share information across the ROC network. Each post had a large quantity of domestic items with the sole purpose of providing the Observer with the basic necessities for survival such as rations, water and utensils. Uniforms worn by the Observers were also present in the underground space as well as the wealth of documentation produced from exercises, instruction manuals and recruitment material.²⁴

Before beginning their use life in the underground post, several pieces of equipment were specifically designed by government funded research institutions and private companies such as the Atomic Weapons Research Establishment and General Radiological Ltd. The monitoring and communication equipment were uniform across all posts to ensure all Observers had the ability to gather the same information and give senior Observers and members of the UKWMO the clearest image of how Britain might be affected during an attack. Furthermore, this uniformity means that Observers could be trained and moved anywhere as all posts operate in the same way. The equipment provided to the ROC Observers was paramount to successfully monitor the effects of a nuclear attack, as emphasised by the ROC Standard Operating Procedures. The manual states the function of the ROC was: 'to provide information from the Bomb Power Indicator and the Ground Zero Indicator from which the position, height and power of nuclear bursts can be determined' and secondly: 'to provide information from the Fixed Survey Meter on the first arrival of fall out.'²⁵ Similarly,

²³ Wood, *Attack Warning Red: The Royal Observer Corps and the Defence of Britain, 1925 to 1975*, p. 222.

²⁴ The collection at the NMoF contains examples of male and female uniforms including the 1951 Pattern uniforms (EF.1992.95.263) and the later 1972 Pattern uniforms (EF.1992.95.270.1). There are also examples of documents such as the 'Monitoring Posts Instructions Manual' from March 1985 (EF.1992.95.82), recruitment leaflets (EF.1992.95.92) and the Enrolment Book for 24 Group, Edinburgh (EF.1992.95.209).

²⁵ Royal Observer Corps: Standard Operating Procedure May 1989 Issue 3, Part A, p. A-1.

without a dedicated communications system connecting all posts to the Group Headquarters, vital information would not be collated to protect and warn citizens. At this point in the biography of ROC equipment, the required specialist equipment has been collated ready to spread out among the ROC posts in Britain, to be used as intended and to begin its functioning life. These objects were deliberately created in response to the Cold War need for civil defence and a reliable communication system. As a result, Cold War meanings were attributed to these objects from the beginning of their lives.

Use Life of ROC Objects

The use life of ROC objects is the period when these objects were being used for their intended purpose. The life of objects found in an ROC post is interesting as although they were used and modified by the Observers during their lifetimes, they were never actually utilised in the circumstances in which their use was imagined. Despite this, Observers became intimately familiar with the functions and uses of all equipment provided, as far as they could without being actually under attack, to ensure they knew how to react if the worst happened.

These instruments were key resources for the Observers to prepare in wait of a real emergency and can tell us more about everyday life than archival documents. These objects once used by Observers are imbued with layers of authenticity as they were not only primary witnesses to complex exercises in these unusual underground environments, but they were key to the success of the operation. The objects were active players in exercise scenarios as they had the power to simulate a nuclear attack and provide information for the Observers to act upon. Through continued use in these exercises the objects are relied on to ensure the Observers are fully prepared in the event of a real nuclear attack. Having been part of these exercises, ROC equipment becomes representative of not only their participation but also of the various people who used them as part of their role.

Observers regularly met at their posts to create scenarios where it was essential for equipment to be set up appropriately and for Observers to familiarise themselves with their function and use. One ex-Observers boasted his group were so well rehearsed they could arrive onsite, gather the equipment, and set it up ready in under five

minutes.²⁶ Although Observers could practise setting up the post, trainer equivalents were essential to ensure Observers understood the information they were expected to gather in a real attack and how to correctly communicate this. Practicing on a trainer was also crucial as it was impossible to train with a real radiological attack. Some pieces of equipment such as the Bomb Power Indicator (BPI) and Ground Zero Indicator (GZI) could only be simulated by using mock photographic papers or dial readings. However, a Fixed Survey Meter (FSM) trainer was specially designed to simulate levels of radiation moving over the post's area.



Fig. 3.3: Fixed Survey Meter (EF.1992.95.24) and the almost identical FSM Trainer (EF.1992.95.35), ©Sarah Harper.

Based on the FSM trainer found in the National Museum of Flight's collection, I will explore this object's biography to explain how this piece of monitoring equipment embodies the inherent notion of preparedness of the ROC. The Fixed Survey Meter trainer (Fig.3.3) offered Observers the most realistic experience of using equipment during an attack. The FSM was a battery-operated instrument which would be used to

²⁶ Jonathon Yarrow, interviewed by Sarah Harper, 14 February 2020.

measure gamma radiation dose-rate up to 5000 Roentgens per hour.²⁷ Enclosed in a metal case, which would be screwed to the post's desk, the meter was connected to a cable leading to a detector mounted to a telescopic pole in the ceiling, which would be extended above ground to read radiation levels, protected by a polycarbonate dome.²⁸ In the event of an attack, the levels of radiation would be dependent on how close the post was to the bomb burst or on the weather conditions which could move fall-out around the country.

Unlike other pieces of monitoring equipment, an FSM trainer was invented to mimic how the device would perform during a real nuclear attack. This allowed Observers to practise the operation and appropriate procedures surrounding detecting radiation. The FSM trainer created was identical to the real instrument but was operated by clockwork rather than batteries.²⁹ This device was intended to be so realistic that through training exercises the Observers would be as prepared as they possibly could, meaning these objects were vital to inferring preparedness to the Observers. In her investigation of Danish mock towns used for civil defence preparation, Rosanna Farbøl describes how carefully constructed ruins, although visibly scary and disturbing, were 'manageable places of destruction' which actually offered hope to those training amongst these post-nuclear disaster zones as they enabled learning opportunities and experience for people who would need to react to similar scenes in a real-world scenario.³⁰ Similarly, objects such as the FSM trainer were created to simulate devastating scenarios, but also with the intention of training the Observers to react calmly and efficiently.

The detection of radiation could be simulated using a spool of celluloid of varying width called a pattern (Fig. 3.4). As the pattern moved through the unit, a small roller attached to the end of the meter needle held a spring against one edge of the pattern, which with differing widths of the tape would produce rising or falling readings.³¹ This

²⁷ Royal Observer Corps: Standard Operating Procedure No.2 Operations Room, Sept 1969, Annex L3, p. 1.

²⁸ Royal Observer Corps Association, 'Fixed Survey Meter (FSM)', roc-heritage.co.uk, <http://www.roc-heritage.co.uk/fixed-survey-meter-fsm.html>, Accessed: 19 March 2020.

²⁹ Wood, *Attack Warning Red: The Royal Observer Corps and the Defence of Britain, 1925 to 1975*, p. 235.

³⁰ Rosanna Farbøl, "Urban Civil Defence: Imagining, Constructing and Performing Nuclear War in Aarhus," *Urban History* 48, no. 4 (2021): p. 171.

³¹ Royal Observer Corps: Standard Operating Procedure No.2 Operations Room, Sept 1969, Annex L4, p. 2.

made exercises more realistic as patterns were unique to each post to simulate the intervals at which they would be exposed to radiation depending on where the 'bomb' detonated. The UKWMO were responsible for providing the pre-cut patterns, delivered to each post along with a narrative to indicate when devices should be switched on and when they should be checked.³² The FSM trainer held by NMoF has a pattern on the spool which is revealed when the metal plate at the front is removed. Upon inspection, part of the pattern is visible, reading 'INTEX 87 AYR 57' (Fig. 3.5). Some key biographical information can be gleaned from this as it identifies it was used by 57 Post Ayr as part of an international exercise in 1987, which was a two-day exercise held every year involving fellow NATO countries.

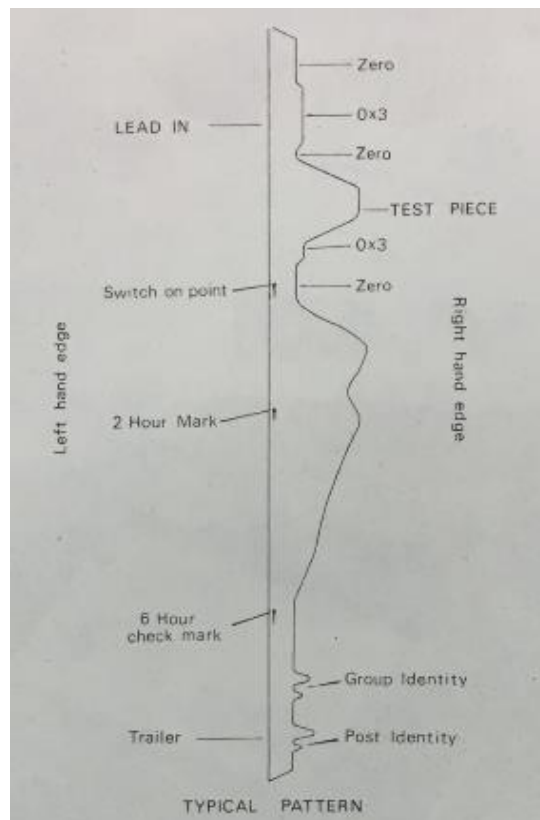


Fig. 3.4: An example pattern shown in the Royal Observer Corps Operating Procedure No.2 Operations Room, Sept 1969, Annex L4, p.5, ©Sarah Harper.

Regular exercises were a main staple in the life of an Observer, the constant drills of standing-to and setting up equipment were vital in the overall preparation towards

³² Royal Observer Corps: Standard Operating Procedure No.2 Operations Room, Sept 1969, Annex L4, p. 4.

reporting a nuclear attack. When interviewing an ex-Observer, I had laid out several key objects as talking points on a table including this FSM trainer. Almost immediately, smiling like seeing an old friend, my interviewee pointed to the FSM trainer and began to describe its function and offered mock readings.³³ This technical knowledge had been ingrained in his memory, ready to use this equipment again if needed. His enthusiasm and nostalgia for the FSM and other items familiar to him demonstrated an emotional relationship between him and the objects. This interaction highlights the power of objects to transport viewers back to the past and to relive memories and emotions associated with them.³⁴

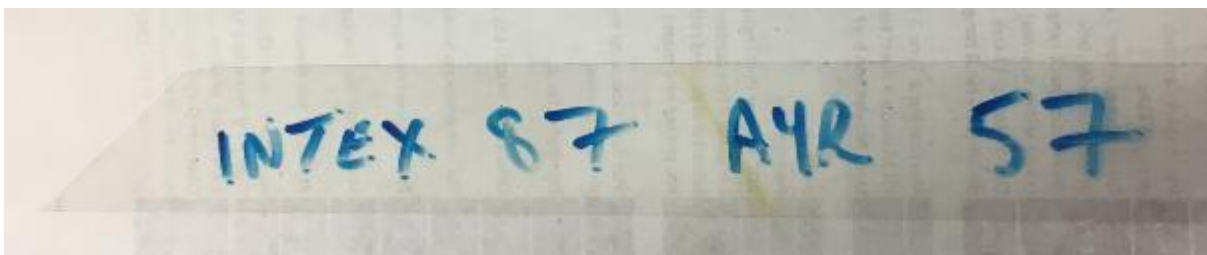


Fig. 3.5: Pattern belonging to FSM Trainer (EF.1992.95.35), ©Sarah Harper.

During my interviews with former Observers, the personal connections between them and ROC objects was apparent, and each Observer could recall different memories associated with each object. This was especially true of the recollections given when discussing technical equipment like the FSM trainer and the domestic objects supplied solely for the comfort of the Observer. The posts were not designed for long-term occupation and would have been quite claustrophobic. There was a small private chemical toilet cupboard, large plastic jerry cans for water, food rations and beds for Observers to sleep. In the late 1960s, there were some efforts to improve the living conditions with dim lights replaced by fluorescent strip lighting, self-heating food cans replaced by Tommy cookers and later Centre Forge mini cookers to reduce noxious fumes. Posts were also supplied with four-stroke petrol/electric charging sets as batteries could not be charged at local garages during emergencies.³⁵

³³ Jonathon Yarrow, interviewed by Sarah Harper, 14 February 2020.

³⁴ Jonathon Yarrow, interviewed by Sarah Harper, 14 February 2020.

³⁵ Wood, *Attack Warning Red: The Royal Observer Corps and the Defence of Britain, 1925 to 1975*, p. 243.

The food rations provided to the ROC were standard army rations, designed to have a long shelf-life in the form of tinned food (Fig. 3.6). Observers would periodically be given orders to practise cooking and to use the rations.³⁶ The rations boxes came with suggested menus and offered various foodstuffs from tinned sausages to chicken supreme and soups to jams, sugar, tea and biscuits. Some Observers would supplement the ration packs with items they had brought themselves such as cereals and instant mash potato, however Observers had to be mindful of preserving water.³⁷ An ex-Observer recalled: 'some of it is actually not too bad. The oatmeal blocks, fantastic because you could make them into porridge. I've still got some...fruity biscuits, it was a fight for them.'³⁸



Fig. 3.6: Box of ROC issued rations (EF.1992.95.233) and Fig. 3.7: ROC post padlock (EF.1992.95.54.1), ©Sarah Harper.

The padlocks were also an essential domestic item as they secured the metal hatch into the post. These were standard issue, heavy metal battleship padlocks opened with keys held by named people responsible for the post (Fig. 3.7). These padlocks are a reminder of the practicality of locking the monitoring post hatch for safety and security purposes. Additionally, the padlocks are representative of the plight of the Campaign for Nuclear Disarmament (CND) protestors who opposed the efforts of the ROC and regularly attempted to disrupt ROC training, especially through tampering

³⁶ Jonathon Yarrow, interviewed by Sarah Harper, 14 February 2020.

³⁷ Jonathon Yarrow, interviewed by Sarah Harper, 14 February 2020.

³⁸ Jonathon Yarrow, interviewed by Sarah Harper, 14 February 2020.

with the post padlocks. At several posts, CND members poured glue into these padlocks to stop them being opened. An ex-Observer recalled this happening at his West Calder post, as well as Turnhouse and Penicuik. He shared the successful method used to release the glue: 'we went down to the local locksmith...he said, what to do is pour some nail polish remover in it and set it on fire, give it a few minutes and then put the key in... and that'll be it fine.'³⁹ By putting an object like the padlock on display in a museum or restored post, memories like these are sparked from ex-Observers, CND protestors and those familiar with the ROC. The padlocks are also representative of the diverse meanings and values that different people associate with the Cold War period. The emotional reaction of the CND campaigners demonstrates how civil defence in some ways heightened nuclear angst and fears among civilians rather than putting them at ease. Although Observers advocated the benefits of civil defence, as Frank Biess found in his study of West Germany: 'civil defence...remained inextricably intertwined with a particularly challenging task of emotional management, that of combating popular fears.'⁴⁰

Most of the domestic objects found in a monitoring post are easily movable and could be integrated into other settings. By considering the biography of portable objects associated with the ROC, we are acknowledging the changing meaning of objects and can recognise the relationship they have with different people they have become entangled with.⁴¹ As highlighted by the post personalisation and the memories of ex-Observers using the objects, these connections with people adds valuable authenticity to the ROC objects on display in restored posts or museums. By having tangible connections to people, these objects add value for museum visitors as the objects can tell stories of personal experiences or about the context in which these objects were used, provided that these relationships and stories are made accessible to those visitors. Furthermore, they connect to the human experience of the Cold War as they embody the experience of the ROC Observers. Former Observers recognise the Cold War connections to these objects as 'these instruments reflect the civil defence preparations that were carried out to try in some way monitor, report, advise and warn the population', highlighting the focus on the function of the objects in their potential

³⁹ Jonathon Yarrow, interviewed by Sarah Harper, 14 February 2020.

⁴⁰ Frank Biess, "'Everybody has a chance': Nuclear Angst, Civil Defence, and the History of Emotions in Postwar West Germany," *German History* 27, no. 2 (2009): p. 220.

⁴¹ Marie Louise Stig Sørensen and Dacia Viejo-Rose, *War and Cultural Heritage* (Cambridge: Cambridge University Press, 2015), p. 10.

Cold War role.⁴²The painted murals and the CND padlock incidents are examples of the diversity of nuclear culture. They show both an interaction with nuclear energy based on place and an individual's response to scenarios created because of the threat of a nuclear attack.⁴³

Afterlives of Royal Observer Corps Objects – Becoming Artefacts

The lives of ROC objects do not end after their use lives become redundant at the end of the Cold War period. Rather this marks the beginning of their lives as artefacts. The working life phase of ROC objects came to an end in July 1991 when the organisation was stood down as the Cold War drew to a close. The Home Secretary's statement on the review of emergency planning stipulated that the ROC was now obsolete and new developments in bomb detection instrumentation would fulfil their role.⁴⁴ Landowners or farmers became the new owners of these redundant monitoring posts, as their leasehold land was returned. Senior Observers were advised to remove all equipment from the posts and return items to the Group HQ, with British Telecomm required to remove all communications equipment. From discussions with former Observers and ROC enthusiasts, this emptying of the posts was not always thorough and often items can still be found in the posts.⁴⁵

At this point, the movability of ROC objects becomes more apparent and is worthy of consideration. Unlike the static and permanent nature of the underground post, the objects and instruments that furnished the space have the capacity to be moved and to be seen out of their original context. There are few physical variations that distinguish where a piece of equipment originated as all the equipment was standard and rolled out to every post, which makes ROC objects even more mobile. Some objects are marked with the post name or number which does offer a tangible link to its past. However, the uniformity of the objects mean they can seamlessly integrate into new posts. In his study of Neatishead, Steven Leech found some museum volunteers considered equipment from other sites as 'imposter consoles' and that

⁴² Fred Allen, interviewed by Sarah Harper, 4 February 2020.

⁴³ Jeff Hughes, "What is British Nuclear Culture? Understanding Uranium 235," *The British Journal for the History of Science* 45, no. 4 (2012): p. 504.

⁴⁴ HH51/434, Home Secretary's Statement of the Review of Emergency Planning, July 1991, National Records of Scotland

⁴⁵ Fred Allen, interviewed by Sarah Harper, 4 February 2020.

these objects 'do not fit in' as they are not unique to this site.⁴⁶ This differs with most ROC post restorers who are grateful for any new additions to their posts regardless of their origins.⁴⁷ However, their responses may be different because of the uniformity of the contents of an ROC post in comparison to a specialist radar centre.

Most post restorers I interviewed do not take account of the fact that most of their objects are not original to their post, preferring to at least have an example of the object than not at all. As the Skelmorlie post restorer remarked: 'well it was standard equipment so it wouldn't make any difference, a Ground Zero Indicator is a Ground Zero Indicator.'⁴⁸ Another post restorer described 'completing' his collection highlighting the importance of gathering an example of all ROC items regardless of their origins.⁴⁹ However, when restorers do discover items that are original to their post, they feel a sense of achievement and attachment to this tangible link to their past. One restorer in Northern Ireland described, aside from what had been left, he only has one piece of equipment that 'belonged' to his post. He mentioned his delight: 'I managed to get back a piece of training equipment that I found in the NI Government's former Nuclear Bunker in Ballymena, it still had my post's designation number written on it and it was a fantastic feeling to put it back on the desk in the post where it had originally sat, it also still worked.'⁵⁰ The positive reaction to this find shows how this object has added meaning and authenticity as the owner knows more about the biography of this object in comparison to other things he has gathered for his post. The act of returning this object to the post it originated is a way of re-establishing the network between objects and place.

Due to the movability of ROC objects, there is a growing appetite for collecting pieces of ROC material culture by enthusiastic individuals. The process of trading objects between ROC enthusiasts is a key point at which authenticity is added to an object. Sally Foster and Neil Curtis suggest: 'when portable- whether it is the parent material or the copy that has moved - histories build up through exchange and circulation.'⁵¹ This is relevant to the exchange of ROC material culture as the individual who now

⁴⁶ Leech, "Echoes from the Recent Past: An Archaeological Ethnography of Historic Cold War Radar Sites in the U.K," p. 157.

⁴⁷ Email correspondence between Sarah Harper and Alan McDonald, 3 February 2020.

⁴⁸ Fred Allen, interviewed by Sarah Harper, 4 February 2020.

⁴⁹ Email correspondence between Sarah Harper and Alan McDonald, 3 February 2020.

⁵⁰ Email correspondence between Sarah Harper and Alan McDonald, 3 February 2020.

⁵¹ Foster and Curtis, "The Thing About Replicas: Why Historic Replicas Matter," p. 131.

owns them ascribes their own meanings and personal memories to the objects as well as recognising the history and meanings already bound within the object. Knowing biographic details can make an object more authentic for the owner as it offers a tangible location of use and a feeling of connection to the past. As one ex-Observer and post restorer describes: 'ROC objects do not generally come with provenance. Although there were examples that did have some background details, such as signage which came from the demolished 25 Group HQ – which means something to me personally.'⁵² This emphasises the nostalgia and personal memories associated with objects, especially when background knowledge is known.

The mass disposal of equipment after the dissolution of the ROC has led to the increasing competition to purchase a piece of ROC heritage as objects become rarer and more sought after. One ex-Observer and post restorer recalled the fate of the equipment from the Ayr Group posts. Objects were moved to the Scottish Home and Health Department store in Edinburgh before being transferred to Marchington in Staffordshire and kept in storage in the late 1990s. When he learned of this mass of storage of equipment, he tried to retrieve some of it but discovered it had been disposed of because no one had wanted it.⁵³ He recalled: 'things like the Ground Zero Indicator, I've heard stories you could have picked them up... if you were in the area for something like 50p. Nowadays you can hardly get them for love nor money.'⁵⁴ The growth of online auction websites such as eBay and the ever-increasing opportunities for personal ownership of posts has also driven demand for basic equipment which is significantly more expensive than it may have been in the 1990s. For example, in January 2020, a Ground Zero Indicator sold on eBay for £2405.05 showing how high the monetary value has inflated in recent years.⁵⁵

This increase in monetary value of ROC material culture is driven by the increasing rarity of these objects and the demand from collectors to enhance their collections. ROC objects have both cultural and economic value, meaning that the more attention and conviction given to certain objects drives up their economic value. Neil Brodie

⁵² Email correspondence between Sarah Harper and Fred Allen, 2 September 2020.

⁵³ Fred Allen, interviewed by Sarah Harper, 4 February 2020.

⁵⁴ Fred Allen, interviewed by Sarah Harper, 4 February 2020.

⁵⁵ eBay, 'Royal Observer Corps Ground Zero Indicator, ebay.co.uk, https://www.ebay.co.uk/itm/Royal-Observer-Corps-Ground-Zero-Indicator-/164033275718?hash=item2631252746%3Ag%3AlzQAAOSwevJeHNdW&nma=true&si=SCXOlgiYQ2wLPRIKSnHfyDeMbhm%253D&orig_cvip=true&nordt=true&rt=nc&_trksid=p2047675.l2557, Accessed: 26 March 2020.

argues that 'the price for an antiquity in a transaction is determined by the perceived value of the object acting in conjunction with the financial means and propensities of the purchaser (willingness-to-pay), which are in turn conditioned by the purchaser's broader personal, social and economic circumstances.'⁵⁶ The value of the objects is not only increased in monetary terms, but also for former ROC Observers who long for even the minutiae of their past. Although many items associated with the ROC appear mundane and familiar to some, the added value of their unique association with nuclear warfare heightens their significance and makes them more desirable to an ROC enthusiast.⁵⁷ Similarities can also be drawn with Nicky Gregson, Mike Crang and Helen Watkins' findings while exploring the 'souvenir salvage' of decommissioned Royal Navy ships where ex-sailors would take pieces of the ship which would only be of value to them, to strengthen their connection to the disappearing ship.⁵⁸

Passionate enthusiasts aiming to complete their collections are contributing to the increase in demand and expense of remaining objects. There is also a sense of community among regular purchasers of ROC material culture despite increasing competition. For example, through networks such as the Royal Observer Corps Association⁵⁹ and social media such as the Facebook group 'Royal Observer Corps (All Groups/Posts)', members discuss their desires and share information about where they might source the items they are looking for.⁶⁰

Some interviewees described signing up to online alerts tagged to key words such as 'Royal Observer Corps' and 'Civil Defence' on auction sites to ensure they are aware when items come up for sale so they can buy them themselves or make fellow enthusiasts aware.⁶¹ However, one former Observer expressed his displeasure with individuals not associated with the ROC or heritage groups claiming these objects. He commented: 'it is unfortunate for ROC heritage [...] that the owner of an object has no

⁵⁶ Neil Brodie, "The Antiquities Market: It's All in a Price," *Heritage & Society* 7, no. 1 (2014): p. 35.

⁵⁷ Rachel Bowers and Kevin Booth, "Preserving and Managing York Cold War Bunker: Authenticity, Curation and the Visitor Experience," in *In the Ruins of the Cold War Bunker: Affect, Materiality and Meaning Making* ed. Luke Bennett (London: Rowman & Littlefield, 2017), p. 210.

⁵⁸ Nicky Gregson, Mike Crang, and Helen Watkins, "Souvenir Salvage and the Death of Great Naval Ships," *Journal of Material Culture* 16, no. 3 (2011).

⁵⁹ Royal Observer Corps Association, [rocatwentytwelve.org](https://www.rocatwentytwelve.org), <https://www.rocatwentytwelve.org/home.html>, Accessed: 17 April 2022.

⁶⁰ Facebook, 'Royal Observer Corps (All Groups/Posts)', www.facebook.com/groups/royal.observer.corps, <https://www.facebook.com/groups/royal.observer.corps>, Accessed: 17 April 2022.

⁶¹ Tom Olden, interviewed by Sarah Harper, 3 March 2020.

legal obligation to heritage. The object can be sold to the highest bidder, demolished, or broken up, or stored away in isolation and seen by no one. eBay has done ROC heritage no favours.⁶² This opinion highlights the disappointment of ex-Observers towards those collecting ROC objects for reasons other than to share or actively promote ROC heritage. However, this interviewee dismisses the opportunities eBay has offered him and others to gather ROC objects for heritage purposes.

With these new opportunities to purchase and collect, ROC objects have become exposed to new audiences. Many of these people have not previously been familiar with these objects during their use-life or were former ROC Observers.⁶³ Instead, these people have become interested and fascinated in what potential these objects had and what role they would have played in the event of a nuclear attack on Britain. At this point, a new kind of significance and authenticity is inscribed into these objects which differs to an ex-Observer with real life experience of using these objects. After the dissolution of the Royal Observer Corps, ROC objects have become historical artefacts and no longer have an active role or purpose. As a result, underground monitoring posts are now viewed as heritage sites and places of increased interest for their 'secret' nature. Through websites such as Subterranea Britannica⁶⁴ and the Urban Explorer⁶⁵, abandoned posts have been documented online with photographs and detailed condition reports by those who have accessed them. Some former posts which are not securely locked can be entered to reveal what items have been left behind. These tend to be items of little monetary value or very common artefacts such as the tables, chairs, and bunkbeds as well as cartons of Glitto. These abandoned posts have often been the source of many pieces of equipment for a restorer's own post.

Many individuals have taken advantage of the dissolution of the ROC to acquire redundant objects through various channels like those mentioned. As well as becoming features of restored monitoring posts, ROC objects have also been donated and acquired by museums. This 'museum life' phase adds new levels of authenticity and meanings to the objects as they become embedded in a new environment.

⁶² Email correspondence between Sarah Harper and Larry Howard, 24 October 2020.

⁶³ For example, Gordon Smith and many of the 28 Group Observed charity restoring the 28 Group Headquarters in Dundee were not former ROC members but instead took on the project as a hobby.

⁶⁴ Subterranea Britannica, www.subbrit.org.uk, <http://www.subbrit.org.uk/>, Accessed: 26 March 2020.

⁶⁵ The Urban Explorer, [theurbanexplorer.co.uk](https://www.theurbanexplorer.co.uk/), <https://www.theurbanexplorer.co.uk/>, Accessed: 26 March 2020.

Objects held in museums are treated differently in comparison to those held by heritage groups, such as those in restored ROC posts. In accredited museums there is more emphasis and duty to document, store, and display objects appropriately to ensure their conditions are maintained throughout their lives rather than a more fluid existence in a community led heritage group.

Despite the assumption that accredited museums have detailed documentation for all of their objects, the records relating to the museum life of the Royal Observer Corps collection held by the National Museum of Flight are somewhat sparse. The collection, which came to the museum in 1992, ranges in age from Second World War equipment such as the Micklethwait plotter to the early underground monitoring equipment used from the late 1950s to the early 1980s. The ROC collection at the NMoF is currently in long term storage, with no immediate plans for display. As the collection is arranged on shelves by size rather than in connection to each other, it is difficult to appreciate how these objects would have worked together in the underground space.

Euan Green, the current Assistant Curator of Transport who is responsible for the collection, was unsure about its origins. As much of the collection is relating to 23 post Turnhouse or the 24 Group Headquarters, both in the vicinity of the current Edinburgh airport, he assumed that the contents of the posts had been gathered and taken to the 24 Group HQ, then a selection was donated to the museum. Carl Henry, the former Assistant Curator of Transport was based at the National Museum of Flight from 1992. He recalled a former female Observer who lived locally, and other Observers had been responsible for the donation. Seeing as they were most familiar with the collection, the Observers catalogued and added description labels to the objects being donated.⁶⁶

The uncertainty about the origins of the collection makes it difficult to draw clear connections to the original environment in which these objects were found and the people who used them. This in turn reduces the value of the objects as there is little information about the donor. The donor is a key figure in the biography of this collection as they had their own motivations to donate the items and particularly to National Museums Scotland rather than another heritage organisation. Furthermore, in the absence of information regarding the original donor, we lose the stories, memories, or personal connections they may have had to these objects.

⁶⁶ Email correspondence between Sarah Harper and Carl Henry, 30 January 2020.

The museum itself becomes influential to the object's authenticity especially through common museum processes like acquisition, cataloguing and classification.⁶⁷ The ROC objects have become part of a national collection where they are now treated and viewed as irreplaceable and special objects in this new context. The museum processes influence the biography of the object as they are categorised and given a label based on the interpretation of the responsible curator. This classification could be subjective, and objects could be included in multiple descriptive categories. Although the ROC objects held by NMS were not acquired specifically for being 'Cold War' objects, their obvious connections to preparing for a nuclear attack during the Cold War would justify this classification.

The transition of ROC material culture from use life to museum life is part of the heritagisation of the ROC more generally. By becoming a focus for heritage preservation, a range of new people are becoming involved in the collection of ROC material culture and post restoration using a variety of methods.

The Royal Observer Corps as Heritage

The transition from functional object to museum artefact alters the authenticity ascribed to objects by a range of different people, further influenced by the environment in which they are viewed. Although the NMoF offers a safe place to store the ROC collection, for most of its life it has only been displayed in a limited capacity.

As ROC heritage has become increasingly popular, an appetite for people to not only purchase material culture examples of the ROC but to turn underground monitoring posts into heritage sites and tourist attractions has grown. Many ex-Observers and enthusiasts have painstakingly restored posts and even refurbished equipment to a functioning level. This section will consider the lengths restorers have undertaken to create realistic ROC posts and examine what this means for the authenticity of this environment. Furthermore, the visitor's perception of authenticity will be examined in terms of their interactions with the environment and the material culture displayed.

⁶⁷ Marzia Varutti, "'Authentic Reproductions': Museum Collection Practices as Authentication," *Museum Management and Curatorship* 33, no. 1 (2018): p. 51-52.



Fig. 3.8: View of the Traquair ROC post hatch and view looking up the ladder.
©Sarah Harper.

From the dissolution of the ROC in 1991, many Observers felt they too had been abandoned after stand-down and only a few recognised the potential value in preserving the built structure and associated objects. All ROC posts have gone through a transitional phase from creation to functioning to abandonment and in some cases to rescuing and restoration.⁶⁸ The two main forms of restored posts are either overtly or covertly curated. An overtly curated post is defined as one which is owned by an individual or associated group who have fully or partially restored and maintain a site. In contrast, a covertly curated site, like an overtly curated site, is clearly demarcated and maintained above ground, however the underground element of the post can be unique and may deviate from replicating a functioning post.⁶⁹

An example of this is the former No. 41 Post at Traquair in the Scottish Borders (Fig. 3.8). The owner of the post is not a former ROC member and does not have any

⁶⁸ Clarke, "Landscape, Memory and Secrecy: The Cold War Archaeology of the Royal Observer Corps," p. 137.

⁶⁹ Clarke, "Landscape, Memory and Secrecy: The Cold War Archaeology of the Royal Observer Corps," p. 136.

monitoring or communications equipment but has replicated some of the issued domestic equipment. Instead of offering visitors an experience of a restored ROC post, the owner allows visitors on request to view the unique underground space and has hosted deliberately small events such as a 'Threads' film night and invited musicians to play in this unusual environment.⁷⁰ This shows a potential alternative future for ROC objects in which they are regarded as accessories to the space rather than a major feature.

Building on this level of restoration, overtly curated posts are well maintained above ground and are intended to be replications of how the post had been laid out in operation including the original equipment. In most cases, these restorers or heritage groups are made up of former Observers or their family and usually those who had been assigned to this post.⁷¹ These former secretive posts are usually advertised as living history museums and encourage visitors by enticing them to visit their 'secret bunkers.'⁷² One former Observer and post restorer acknowledged that few are aware of the ROC but 'the word "bunker" is a great draw for visitors' despite a displeasure for the term by ex-Observers.⁷³ These restorers aim to illuminate and educate the public about the role of the ROC during the Cold War. An additional benefit of post restoration is that it is a positive way of keeping former post crews connected and helps to recreate the camaraderie experienced while the post was functioning.⁷⁴

These personal connections to posts add a layer of authenticity for visitors, as seeing the relationship between ex-Observers demonstrates their passion for preserving their history and humanises the unusual underground space. Ex-Observers share their personal experiences with visitors to give them a sense of a true account of what preparing for a nuclear attack was like. They can easily answer any questions visitors may have and add a human element by sharing anecdotes of their experiences. This is comparable to Bella Dicks' study of Welsh ex-coalminers who became tour guides at the closed down mines, where history is presented through the eyes of their first-

⁷⁰ Facebook, 'Attack Warning Red Scottish Borders', [www.facebook.com, https://www.facebook.com/awrsb/](https://www.facebook.com/awrsb/), Accessed: 26 March 2020.

⁷¹ Clarke, "Landscape, Memory and Secrecy: The Cold War Archaeology of the Royal Observer Corps," p. 134.

⁷² Clarke, "Landscape, Memory and Secrecy: The Cold War Archaeology of the Royal Observer Corps," p. 135.

⁷³ Email correspondence between Sarah Harper and Clare Stephens, 14 September 2020.

⁷⁴ I have witnessed this while visiting restored ROC posts at Skelmorlie and Arbroath as ex-Observers shared stories and jokes about their ROC service while conducting restoration tasks.

hand experiences.⁷⁵ The personal stories attached to the objects aided by first-hand accounts add a sense of genuineness or aura to the object which Siân Jones suggests highlights the 'web of relationships' with past and present people.⁷⁶

Luke Bennett explored the attachment between former Observers and their posts and observed that 'through weekend training exercises and weekly crew meets, these contingent places acted as local clubhouses for their crews, with an ensuing sense of attachment to the sociality of performing these places.'⁷⁷ Bennett also comments on 'bunkerology' as a predominantly masculine pastime, and suggests the connections to the military, the organisational process of ticking off bunkers visited and interests in technology as drawing more men to taking up bunker hunting as a hobby.⁷⁸ This masculine presence was something I noticed in my visits to monitoring posts, not only among post restorers at the same post but also in the wider network of predominantly male restorers who were keen to share their skills and discoveries, perhaps for their own sense of validation and commitment to preserving ROC history. Furthermore, all the Observers I spoke to regarding the objects and restoring them were male or referred to other networks of men who were involved in fixing the technology to a functioning level.⁷⁹ My observations reflect Jessica Douthwaite's analysis of perceptions of gender in the ROC in the immediate post-war period: she argues that the formal relationships between the ROC and the RAF brought with it the masculine connotations and reinforced a 'mystique of manliness in the post-war period.'⁸⁰

This is not to say there are no female restorers. The owner of the restored Arbroath post is a female ex-Observer, and her support network is made up of both men and women. Some women in attendance at open days are the wives of male former Observers who have passed away, but they continue to be a part of the ROC community. Historically, the presence of women within the Royal Observer Corps has

⁷⁵ Bella Dicks, "Performing the Hidden Injuries of Class in Coal-Mining Heritage," *Sociology* 42, no. 3 (2008): p. 436.

⁷⁶ Jones, "Experiencing Authenticity at Heritage Sites: Some Implications for Heritage Management and Conservation," p. 137.

⁷⁷ Luke Bennett, "Cold War Ruralism: Civil Defense Planning, Country Ways, and the Founding of the UK's Royal Observer Corps' Fallout Monitoring Posts Network," *Journal of Planning History* 17, no. 3 (2017): p. 220.

⁷⁸ Luke Bennett, "Who Goes There? Accounting for Gender in the Urge to Explore Abandoned Military Bunkers," *Gender, Place & Culture* 20, no. 5 (2013): p. 633.

⁷⁹ Gordon Smith interview, (20 February 2020) and Fred Allen interview, (4 February 2020).

⁸⁰ Douthwaite, "Voices of the Cold War in Britain, 1945-1962," p. 208.

been strong since July 1941 when they were first permitted to join.⁸¹ From the outset, female Observers had the same rights and status, and could be promoted to the senior positions as per their male counterparts.⁸²

The efforts of these restorers and the restored posts themselves are crucial in promoting and recognising the ROC as heritage. Jillian Rickly-Boyd describes, 'heritage sites function as conduits between the past and present', emphasising the importance of opening unusual and previously private places like monitoring posts and giving them new life in the present.⁸³ The community involvement of ex-Observers and enthusiasts has been crucial in identifying both the tangible and intangible heritage associated with the ROC, as they have showed a commitment to safeguarding this history.⁸⁴ Material culture is a significant part of the heritage experience as increasing emphasis is placed on not only the objects, but the stories they manifest and inspire. The ROC collection held by NMS should also be considered in terms of the connections it has to people and especially the place it originated. Siân Jones suggests: 'it is networks of relationships between objects, people, and places that appear central, not the things in and of themselves', emphasising the object is a physical representation of these networks which adds to the aura of the object.⁸⁵ For example, in the National Museum of Flight collection there is a uniform jacket with 'Fairbairn' written on the inside label and the ROC medal ribbon stitched on the breast. This personalisation connects this object to a person and their direct experience of being an ROC volunteer and alludes to their long service.⁸⁶

These personal connections and stories attached to objects add to the visitor's experience in an ROC post. Like many other Cold War sites such as radar stations, submarine bases and nuclear power stations, it is difficult to convey to the public how these were sites for 'war' when they are incomparable to more recognisable arenas of

⁸¹ Norfolk and Suffolk Aviation Museum, 'Key Date in the History of the Royal Observer Corps', [www.aviationmuseum.net](https://www.aviationmuseum.net/ROCDates.html), <https://www.aviationmuseum.net/ROCDates.html>, Accessed 25 October 2022.

⁸² Wood, *Attack Warning Red: The Royal Observer Corps and the Defence of Britain, 1925 to 1975*, p. 124.

⁸³ Jillian M. Rickly-Boyd, "'Through the Magic of Authentic Reproduction': Tourists' Perceptions of Authenticity in a Pioneer Village," *Journal of Heritage Tourism* 7, no. 2 (2012): p. 129.

⁸⁴ Harriet Deacon and Rieks Smeets, "Authenticity, Value and Community Involvement in Heritage Management Under the World Heritage and Intangible Heritage Conventions," *Heritage & Society* 6, no. 2 (2013): p. 132.

⁸⁵ Jones, "Experiencing Authenticity at Heritage Sites: Some Implications for Heritage Management and Conservation," p. 137.

⁸⁶ 1972 Pattern ROC Jacket marked with 'Fairbairn', (EF.1992.95.271.1).

conflict. This means post restorers need to act creatively to attract visitors. Some posts or larger monitoring bunkers deliberately advertise themselves as 'secret' to appeal to the public's sense of curiosity and to surprise them with the extensiveness of the monitoring network. This plays into the increasing appetite for experiential cultural tourism which offers 'the evocation of the authentic – that is real and direct experience – to consumers.'⁸⁷ Additionally, restorers are making the 'secret' accessible and are enhancing 'the visitors' knowledge about both the Royal Observer Corps and the real dangers faced by the entire population throughout the Cold War period.'⁸⁸ There is also the notion that revealing these once secret locations acknowledges the former public ignorance to their existence and reassures visitors that these places are now safe to visit as a space of culture rather than terror.⁸⁹

In interviews, post restorers reported to me that a variety of people attend their open days, from ex-Observers, Cold War enthusiasts and those curious about these underground spaces. One restorer recalled hosting a number of ex-Observers 'who were previously at posts, who can't believe the amount of stuff that we've got here, things that they thought they would never see again', demonstrating the recognition they have received for their efforts.⁹⁰ Ex-Observers who visit restored posts are more interested in the authenticity of the objects as they are already familiar with the environment so they will pay more attention to the objects as reminders of memories and relationships with fellow Observers. One ex-Observer explained his feelings when visiting a restored post as being: 'all consumed with nostalgia, reflecting on the camaraderie, recalling the training and use of the objects and reliving related lighter moments. Relishing the challenge of spotting the *ad hoc* additions and difference between my home post and the post visited, all of which, of course, would be of no interest to the general viewing public.'⁹¹ This view highlights the opportunities for reflection and the strong personal connections ex-Observers feel when reunited with a familiar environment and its contents. The sense of community and exclusivity of ex-Observers is alluded to by mentioning his past experiences which allow him to notice

⁸⁷ Richard Prentice, "Experiential Cultural Tourism: Museums & the Marketing of the New Romanticism of Evoked Authenticity," *Museum Management and Curatorship* 19, no. 1 (2001): p. 9.

⁸⁸ Clarke, "Landscape, Memory and Secrecy: The Cold War Archaeology of the Royal Observer Corps," p. 399.

⁸⁹ J Beck, "Concrete Ambivalence: Inside the Bunker Complex," *Cultural Politics* 7, no. 1 (2011): p. 97.

⁹⁰ Fred Allen interview, (4 February 2020).

⁹¹ Email correspondence between Sarah Harper and Bill Patrick, 24 October 2020.

details that other visitors may or may not appreciate to the same degree. He also hints at the competition between posts as he is actively looking for differences between his 'home post' and the one he visited.⁹²

Visitors to restored posts often find their enthusiastic guide dressed in an ROC uniform and will listen to detailed descriptions of the role of the ROC and the equipment they used. These ex-Observers take the opportunity to wear their old uniforms to give visitors a further realistic image of a functioning post making the Observers themselves part of the immersive experience. At these open days, the Observers are to some extent taking on the role as historic re-enactors where 'their credibility is measured by their conversancy with period minutiae and their fidelity to the 'authentic'...and they uniformly believe that re-enactments bring history alive.'⁹³ However, former Observers do not see their interpretation as re-enactment as they were the ones who actually conducted these roles and feel they have legitimacy in their knowledge due to their experience, meaning that they are to some extent reliving rather than re-enacting. Their motivations for reliving their ROC past are ostensibly for the benefit of the public and engaging with the ROC as heritage, but also for themselves and to add to their own identity as a member of a now exclusive group of former Observers. Dicks highlights the 'performance' element presented by the ex-miners in their tours for visitors where they include elements of their own biographies 'to capitalise on the symbolic value of their own authenticity.'⁹⁴ In this way, ex-Observers and ex-miners have the ability to be themselves and share their personal connections with the environments they are showing visitors.

There is a risk that the visitor can be overwhelmed with complex information especially in terms of equipment descriptions from these enthusiastic guides. I describe this as a risk as the aim of the guide is to provide the visitor with an overview of the history of the ROC and the post environment, but too much of this information can have the opposite effect as visitors become disengaged and despondent as they wait to see the next exhibit.⁹⁵ One restorer commented on their method for conveying the history of the ROC through his collection: 'I try to pick and choose what I display, and every open

⁹² Email correspondence between Sarah Harper and Bill Patrick, 24 October 2020.

⁹³ Vanessa Agnew, "Introduction: What is Re-enactment?," *Criticism* (2004): p. 330.

⁹⁴ Dicks, "Performing the Hidden Injuries of Class in Coal-Mining Heritage," p. 6.

⁹⁵ I witnessed this as a visitor to an ROC post where other visitors were beginning to lose focus on the object being explained and instead were looking elsewhere or wandering around the space as the talk was very detailed and long in duration.

day is different. I don't want the public to get blown away with hundreds of different items from different time periods and going away with so much to remember that they don't have a clue what they just saw! I could tell you everything you need to know about the ROC with one piece of equipment if I had to', highlighting an awareness of the information overload some visitors experience at these enthusiast-curated heritage sites.⁹⁶

Several ROC post guides shape their tour or speech based on the experience and knowledge of the visitor by asking them of their awareness of the ROC and their motivations for booking a tour.⁹⁷ Usually guides can tell if a visitor has prior knowledge as often ex-Observers make themselves known early into the tour to highlight their first-hand experience.⁹⁸ As a result, tours are to some extent flexible and can be varied to suit the audiences' needs. The role of the ex-Observer or enthusiast as guides to these restored posts and objects are key in influencing visitors' perception of the authenticity of the experience. Bella Dicks discovered when researching the role of former miners in the creation of the Rhondda Heritage Park that 'the narration of history is... an identity-conferring practice' meaning that by telling the story of the Rhondda mines, the miners were also sharing 'the story of the self and community.'⁹⁹ This is also true of ex-Observers sharing the history of the ROC through their own experiences as some described their joining process and their experience of using equipment from the earlier and later periods of the ROC.

As much as experienced guides are willing to share their personal experiences and offer explanations of the built environment and material culture associated with the ROC, individual tourists have the agency to make their own judgements of the authenticity of their experience. Yvette Reisinger and Carol Steiner emphasise that 'techniques and convincing presentations can make anything look and sound authentic', especially where tour guides satisfy visitors with demonstrations, audio commentary and other interpretative materials.¹⁰⁰ The post restorers are responsible for orchestrating the visitor experience as they try to make visitors feel like they are getting a realistic experience with the ex-Observer guide and the carefully arranged

⁹⁶ Email correspondence between Sarah Harper and Albert McKenzie, 3 February 2020.

⁹⁷ Email correspondence between Sarah Harper and Clara Stephens, 14 September 2020.

⁹⁸ Email correspondence between Sarah Harper and Clara Stephens, 14 September 2020.

⁹⁹ Bella Dicks, *Heritage, Place and Community* (Cardiff: University of Wales Press, 2000), p. 159.

¹⁰⁰ Yvette Reisinger and Carol Steiner, "Reconceptualizing Object Authenticity," *Annals of Tourism Research* 33, no. 1 (2006): p. 72.

underground space. However, the authenticity of material culture or the built environment is constructed by the viewer rather than being an inherent quality, hence visitors themselves have the agency to decide what is and is not authentic.¹⁰¹

If authenticity is bound by networks of people and places entwined with material culture,¹⁰² then those passionately retelling the story of the ROC demonstrate the continued connection of ex-Observers to the post and their pride and nostalgia. New levels of authenticity are nurtured during these tours as the audience is not passive, they are actively listening and engaging in subtle ways such as paying more attention to some objects than others or experiencing new sounds and smells unique to this environment.¹⁰³ As Steven Leech found at the Air Defence and Radar Museum at Neatishead, the enthusiasm from ex-Observers offer 'a tacit sense that this material belongs here amongst these people...who are ostensibly familiar with its workings and its mysteries' and contributes significantly to its authentication.¹⁰⁴ However, as often the guides at an ROC post are former Observers or volunteers, visitors will receive information that is biased towards the ROC and they are unlikely to learn about other alternative views, such as those of the CND. This is one of the points where these heritage sites differ from larger national museums, as these organically created 'museums' are not obliged to conform to recognised standards of ethics and practice, meaning they can create their own narrative of Cold War history.¹⁰⁵ Furthermore, heritage enthusiasts are not restrained by strict museum protocols surrounding material culture and have the freedom to restore, adapt and deconstruct their objects how they choose. For ROC enthusiasts and post restorers, this has given them the ability to restore functionality to objects which in a museum context would remain dormant.

¹⁰¹ Jones, "Experiencing Authenticity at Heritage Sites: Some Implications for Heritage Management and Conservation," p. 135.

¹⁰² Jones, "Experiencing Authenticity at Heritage Sites: Some Implications for Heritage Management and Conservation," p. 136.

¹⁰³ Katie Best, "Making Museum Tours Better: Understanding What a Guided Tour Really is and What a Tour Guide Really Does," *Museum Management and Curatorship* 27, no. 1 (2012): p. 45-6.

¹⁰⁴ Leech, "Echoes from the Recent Past: An Archaeological Ethnography of Historic Cold War Radar Sites in the U.K.," p. 151.

¹⁰⁵ Leech, "Echoes from the Recent Past: An Archaeological Ethnography of Historic Cold War Radar Sites in the U.K.," p. 134.

Object Restoration

Restored posts have become a place for ex-Observers to commemorate their ROC efforts and a focal point for ROC heritage where they can share their stories and the material culture which was vital to their role. This means the original pieces of equipment become tangible pieces of history and tools with which they can explain the role and purpose of the ROC to convey their duty to prepare in the event of a nuclear attack. This commitment to sourcing original objects is in line with 'objective authentication' as described by Ning Wang, which means to present an object in its original condition or location to confirm genuineness of the object.¹⁰⁶ Additionally, Wang explains: 'things appear authentic not because they are inherently authentic but because they are constructed as such in terms of points of view, beliefs, perspectives, or powers.'¹⁰⁷

ROC objects in restored posts are often not original to the post they find themselves in, despite being represented as an object which has always been there. As the inventory of a post was uniform across the country, post restorers are given the freedom to furnish their posts without being pressured to find original items because visually and physically it would look the same anyway. This means these objects gain a new level of authenticity when they are not in their original environments but are still appreciated by the restorers and visitors as if they had always been there. From a post-modernist view, authenticity is of little concern to tourists who accept that it is not possible to always have originals and as long as they can enjoy the attraction this does not matter.¹⁰⁸ Other restorers have gone a step further by getting ROC equipment functioning again or even creating realistic and functioning replicas. The driving force behind recreating pieces of equipment is for the benefit of the visitor as one ex-ObsERVER remarks: 'It's being able to explain [...] the equipment, ideally it should be working [...] seeing the equipment actually in situ, being able to show [...] switching it on, the process of it, what it's doing.'¹⁰⁹

This desire of restorers to regain and acquire all relevant pieces of equipment has in some cases led to the recreation or invention of replicas to fulfil their needs. The charity

¹⁰⁶ Ning Wang, "Rethinking Authenticity in Tourism Experience," *Annals of Tourism Research* 26, no. 2 (1999): p. 351.

¹⁰⁷ Wang, "Rethinking Authenticity in Tourism Experience," p. 351.

¹⁰⁸ Reisinger and Steiner, "Reconceptualizing Object Authenticity," p. 72.

¹⁰⁹ Jonathon Yarrow, interviewed by Sarah Harper, 14 February 2020.

'28 Group Observed' is currently in the process of restoring Craigiebarns, the former No.28 Group Headquarters, in Dundee. It is endeavouring to restore the bunker as if it had just been left in 1991.¹¹⁰ One of the aims of this project is to get as much of the original equipment as functional as possible. These bunkers were home to much more sophisticated technologies and contents in comparison to an ROC post as they are significantly larger.¹¹¹ Using photographs taken by Observers at the time, the current restoration team has been using them as a guide and checklist for items they need to acquire.¹¹² One of the restorers comments: 'we definitely put the restoration sort of ahead because ... if we can't get the artefacts there's no point opening because we thought we don't want to be [...] like an empty building and we don't want to just put random stuff from the 80s in here [...] like it's got to be the way they left it', highlighting the dedication to detail.¹¹³

By overcoming challenges such as corroded parts and the inability to replace components, the No.28 Group restorers have contacted former electronic workers and companies for advice to get equipment working again and have adapted new technologies to achieve the same output as the original. This technological success means visitors to the bunker can experience to some extent what the Observers did, and it has also allowed for ex-Observers to reconnect with each other, as the restorer highlighted: 'we've got it to the point where anyone with a Teletalk can talk to us on our Teletalk [...] either on your laptop or your mobile phone, you can call in to that network as well. So, Observers can sit at home and just communicate with each other the way they used to.'¹¹⁴ The re-birth of the Teletalk from functioning to redundancy to becoming functional again is important to the authenticity of this object. In its original use it was part of a network communication with a clear purpose to send important messages about radiation fallout during practises or a real attack. However, now the Teletalk is part of a new network of people who are passionate about the ROC and the purpose is more informal. This means that the old bonds between posts emerge in a new way. The environment in which people view ROC objects will influence the levels of authenticity and meanings ascribed to them. Sally Foster's research into early

¹¹⁰ 28 Group Observed, 'Home', 28group.org.uk, <http://28group.org.uk/>, Accessed: 27 March 2020.

¹¹¹ Subterranea Britannica, 'Craigiebarns Dundee ROC Group HQ', subbrit.org.uk, <https://www.subbrit.org.uk/sites/craigiebarns-dundee-roc-group-hq/>, Accessed: 2 April 2020.

¹¹² Gordon Smith, interviewed by Sarah Harper, 20 February 2020.

¹¹³ Gordon Smith, interviewed by Sarah Harper, 20 February 2020.

¹¹⁴ Gordon Smith, interviewed by Sarah Harper, 20 February 2020.

medieval sculpture argues that the site in which the sculpture was discovered or originated is an integral part of the biography of the sculpture.¹¹⁵ Once an object is removed from its original location it becomes disconnected from its historical context. This means that the relationship between object and place is weakened. However, by reuniting an object with an ex-Observer or reintroducing it to a restored post the original context can be reimagined and connections re-established.



Fig. 3.9: Replica AWDREY system control and Fig. 3.10: Replica WB1800, both recreated by 28 Group Observed, Dundee, ©Sarah Harper.

Inventive methods have been used to make up for desired equipment missing from posts. At Craigiebarns, in the absence of an Atomic Weapons Detection Recognition and Estimation of Yield (AWDREY) instrument, the restorers have reproduced a high-quality image of the front and have pasted this to a wooden box (Fig. 3.9). Another project taken on by 28 Group Observed involved completely remaking a rare WB1800 unit, part of the HANDEL Wire Broadcast System. To do this, restorers contacted English Heritage, who sent them photographs of the inside circuits and even scanned the front panel for the closer details of the buttons and lights.¹¹⁶ Realising there was not enough components inside to make it work, the group gathered research from the

¹¹⁵ Foster, *Place, Space and Odyssey: Exploring the Future of Early Medieval Sculpture*, p. 29.

¹¹⁶ Gordon Smith, interviewed by Sarah Harper, 20 February 2020.

BT archive which informed the creation of a brand new circuit board.¹¹⁷ The group sourced identical lights, buzzers and microphones and made the outer box based on the images provided (Fig. 3.10). One restorer commented: 'I think we have done our absolute best to make it as an original [...] if we faked it and sort of sexed it up, I wouldn't put up with behaviour like that, but we've tried as much as possible to be authentic', highlighting their intention to complete this part of their inventory in light of being unable to source an original.¹¹⁸ The efforts of restorers to completely recreate pieces of equipment exemplifies the commitment to completing their collection and the attempt to provide the public with the most accurate recreation of the post regardless of the originality of the objects.¹¹⁹

By restoring instruments to a level of functionality, restorers are flexing their knowledge and skills among other restorers and the public who will be impressed by them. As authenticity is fostered in the relationships connected to objects, the intimate relationship between the object and restorer has a significant impact on the biography of an object. Sally Foster and Siân Jones suggest these relationships are strengthened by the connections made by physical touching and emotions generated by working closely with the object.¹²⁰ Through the restoration process, the objects are now intimately linked to the person who restored them back to life and are a key part in the object's biography. This example is supported by Annette Weiner's theory of 'inalienable possession' where the object carries forward something of the restorer for those who are aware of the relationship.¹²¹ However, it is still possible for this object to become dislocated from this relationship with a radical change of context as it did with the ROC Observer who previously used the object during its use life.

These object restoration projects bring fellow restorers together, who value the efforts of each other in getting long forgotten equipment function again. One post restorer complimented the efforts of the Craigiebarns restorers commenting: 'The guys in Dundee are fantastic as far as getting the equipment, operational equipment working. In fact, I was through there about 3 weeks ago, with a couple of my colleagues that had never been to Dundee to actually see the set-up, they've done a tremendous

¹¹⁷ Gordon Smith, interviewed by Sarah Harper, 20 February 2020.

¹¹⁸ Gordon Smith, interviewed by Sarah Harper, 20 February 2020.

¹¹⁹ Gordon Smith, interviewed by Sarah Harper, 20 February 2020.

¹²⁰ Foster and Jones, "The Untold Heritage Value and Significance of Replicas," p. 2.

¹²¹ Weiner, *Inalienable Possessions: The Paradox of Keeping-While Giving*.

amount of work.¹²² These restorers are aware that these newly functioning objects will not be used in the same way they were originally. Instead, their intentions are to offer visitors a more immersive experience with the relevant sounds and alarms triggered.¹²³

The efforts of restorers are extensive, especially considering the challenging conditions of the sites prior to restoration and their determination to retrieve objects previously dispersed from the posts. As independent and privately owned sites, it is unclear what the legacy of these sites will be when the former Observers or enthusiasts are no longer alive or active. Some restorer groups have become charities meaning they have further opportunities for funding and an obligation to stipulate contingency plans if the group folds in future. The small group of core restorers of 28 Group Observed in Dundee became a charity for these reasons and recognised the potential issues of having ageing members, describing 'I guess we probably need to make sure that we get some younger folks on board to look at that kind of succession.'¹²⁴ The Dundee group also has ambitions to become an accredited museum which would also require them to address plans for the future of the building and the corresponding collection.

Conclusion

The lives of ROC objects are directly influenced by people and place. The Observers meticulously trained to answer the call to action in the event of a nuclear attack relied on the objects to fulfil their important role. By highlighting the biographies of a selection of objects, we can see how different people have interacted with the objects over time from their active use to becoming artefacts. Each person interacting with ROC objects ascribes their own meanings and values on to the objects. These meanings vary between the former Observers who have personal experience using the object, to the enthusiastic collector aiming to own a piece of ROC history and the visitor new to this underground world.

¹²² Fred Allen, interviewed by Sarah Harper, 4 February 2020.

¹²³ Fred Allen, interviewed by Sarah Harper, 4 February 2020.

¹²⁴ Gordon Smith, interviewed by Sarah Harper, 20 February 2020.

The transition of ROC posts to becoming heritage sites has opened the formerly closed network of the ROC to new audiences and offers visitors a chance to visit forgotten Cold War installations. Post open days highlight the sustained efforts by former Observers and enthusiasts to restore ROC posts to their almost original condition. ROC material culture is core to the successful restoration of an ROC post.

At various points in these objects' lives, they become ascribed with 'Cold War' meanings by different actors, from the curious visitor to the enthusiastic post restorer and to museum professionals and researchers examining these objects in a different light. Visitor's perceptions of the authenticity of ROC material culture and the environment they find them in is subjective, with some paying more attention to the originality of objects and others looking more for an immersive experience. The role of the ex-Observer as a tour guide directly influences the experiences of the visitors as personal anecdotes of their role and demonstrations of objects enhance the authenticity of the space.

Restored posts are particularly meaningful to former Observers who are reunited with a familiar environment, equipment on display and share camaraderie with the ex-Observer guides. From the interviews I conducted, each post restorer was clearly very proud of their efforts to preserve ROC heritage for future generations, but it was also apparent that their efforts were for their fellow Observers too. Through post renovation, object collecting and restoration, and post open days, former Observers can reunite with fellow Observers and bond over their shared experiences.

These posts turned heritage sites offer a more realistic experience of ROC material culture in comparison to collections stored in museums. By being reunited with their original or relevant environment, the meaning of the material culture is strengthened and is more authentic for visitors. However, with the extent of the NMoF ROC collection there is an opportunity to recreate an ROC post almost fully. Exhibition tools such as creative lighting and cool air effects could attempt to simulate an ROC post for a visitor without being physically underground.

The material culture of the Royal Observer Corps are prime examples of 'Cold War' objects as they would not have been required without the continuous threat of nuclear bombardment and the need to prepare. Moreover, the lack of mobilisation of these objects furthers their connection to the Cold War, as they are characteristic of this

period of prolonged preparation and planning for a war which fortunately did not occur. The ROC brought the Cold War into the homes of Observers who would be on the frontline if an attack had occurred. As a result, the material legacy of the ROC gives current researchers and visitors to museums and restored posts a tangible connection to the Cold War.

Chapter 4: The Personal and the Political: Material Culture of the Scottish Anti-Nuclear Movement

Throughout the Cold War period the Campaign for Nuclear Disarmament (CND) organised large national protests and encouraged members across the country to spread the anti-nuclear message in creative ways. The protestors of the CND generated a wealth of material culture throughout their campaigning, producing creative posters, leaflets, and other ephemera with clear anti-nuclear messages. 'Disobedient' objects, as Catherine Flood and Gavin Grindon describe, are those which social movements have adopted as part of their tactics and strategies to draw attention to their beliefs and demands.¹ The V&A's 2014 exhibition *Disobedient Objects* highlighted the ingenuity of 'activist-art' and 'design activism' by using simple materials and mediums to create objects used to 'exert counterpower.'² CND and other social movements have traditionally used their creativity and artistic skills to handmake signs, banners and posters to use as props for their protesting activities. As well as these highly visual props used by the CND on public demonstrations, the term 'disobedient object' could also stretch to the wealth of publications developed by CND members in the form of leaflets, newsletters, and journals. These sources offer rich symbolic insights into the organisation and issues being championed in comparison to traditional archival material such as committee minutes or letters.³

The material legacy of this anti-nuclear campaign is representative of the methods CND supporters used to garner support against nuclear weapons. National Museums Scotland's CND collection, donated by the Scottish campaigner Kate Barnet, represents the efforts of grassroots CND campaigners and their inventive protest methods. After almost forty years of campaigning Barnet decided to donate some of her large personal collection of CND material culture to NMS. Barnet donated almost two hundred and fifty items, which include a mixture of mass-produced leaflets,

¹ Flood and Grindon, *Disobedient Objects*, p. 11.

² Catherine Flood and Gavin Grindon, "What are Disobedient Objects?", [vam.ac.uk](https://www.vam.ac.uk/b/blog/disobedient-objects/what-are-disobedient-objects), <https://www.vam.ac.uk/b/blog/disobedient-objects/what-are-disobedient-objects>, Accessed: 8 September 2019.

³ Holger Nehring, "Politics, Symbols and the Public Sphere: The Protests Against Nuclear Weapons in Britain and West Germany, 1958–1963," *Zeithistorische Forschungen* 2, no. 2 (2005): p. 181.

posters, badges and postcards mostly from CND or the Peace Pledge Union and material hand-made by Barnet herself. The majority of items Barnet made herself relate to campaigning in her local area of Blairgowrie in Perthshire. This includes leaflets, posters, newsletters, petitions, participation forms and even account records for the Blairgowrie CND group. She sold stickers, badges and other CND paraphernalia from her pram stall, an initiative she invented herself. Most of the stickers and badges in the collection are left-over stock or examples of what she sold. The badges within the collection are a combination of the CND badge with their logo in various colours and a wide range of other badges appealing to different people's interests (Fig. 4.1). Other items include postcards both unsent and those with messages from fellow campaigners, large posters, and some three-dimensional objects such as earrings in the shape of the CND logo and a rattle bottle instrument gained on the Peace March Scotland in 1982 (PMS82). There is also a selection of photographs of Barnet campaigning with some of the donated items visible in these images.



Fig. 4.1: Selection of objects from the Kate Barnet collection, ©National Museums Scotland.

The collection Barnet donated to NMS is representative of not only her personal experiences but also the shared experiences of many other Scots who also campaigned against nuclear weapons during the Cold War period. The range of home-made leaflets and organisational paperwork demonstrate how much time and effort she contributed to the cause. Barnet's level of dedication to the CND campaign may

be unique, but it is demonstrative of the efforts of a single person challenging global Cold War issues from a local level.

To give a flavour of the Kate Barnet collection, in this chapter I examine three selected items from this collection – five small stickers showing the famous CND logo; a leaflet describing how to recreate Barnet’s iconic pram stall; and finally, a noisy rattle bottle. Any of Barnet’s collection could have been chosen for examination but I have chosen these three for several reasons. These three objects represent a range of mediums utilised to spread the CND message from ephemeral stickers, a three-dimensional object to a paper leaflet. The rattle bottle and the leaflet are emblematic of the hand-made nature of the collection, whether by Barnet herself or others supporting her. Each object represents a specific moment or period of Barnet’s campaigning, with the rattle bottle a remnant of the Peace March Scotland 1982 and the leaflet and stickers key parts of her local and national campaigning strategy. Furthermore, each object is visually symbolic using the CND logo and other symbols to convey the anti-nuclear message. For context, I will begin by briefly highlighting the development of social movements, specifically the CND, and explore Kate Barnet’s biography and motivations for her involvement with the anti-nuclear campaign.

Social Movements

Social movements are characterised as ‘a process of collective efforts to exert social change by political means’ and are usually motivated by people who are resisting or encouraging governmental change.⁴ Donatella Della Porta and Mario Diani highlight key characteristics of social movements as being informal interaction networks between individuals and organisations. These movements share beliefs and a sense of belonging, where a collective of actors ‘are engaged in political and/or cultural conflicts [...] to promote or oppose social change at either the systemic or non-systemic level.’⁵ These characteristics are apparent in most social movements such as the civil rights and feminist movements and are key in the anti-nuclear campaign during the Cold War period.

⁴ Wolfgang Rüdig, *Anti-Nuclear Movements: A World Survey of Opposition to Nuclear Energy* (Harlow: Longman, 1990), p. 15.

⁵ Donatella Della Porta, *Social Movements: An Introduction*, ed. Mario Diani (Oxford: Blackwell, 1999), p. 14-15.

The phrase 'The Personal is Political' was adopted by the second-wave feminist movement in the late 1960s to critique the connections between personal experience and wider social structures, which for women meant exclusion from politics and confinement to the home and mothering duties.⁶ This period also saw a collective movement of women united in the cause for peace inspired by the Women's Liberation Movement.⁷ However, in the late twentieth century there were two women's movements which had different relationships and views on motherhood and maternalism, with some agreeing 'women as biological mothers have a special concern for peace'⁸ and others seeing this as reinforcing traditional stereotypes of women as nurturers and carers.⁹ This demonstrates despite support for female empowerment, their role as mothers was one of the main reasons for supporting the cause for peace and nuclear disarmament. Furthermore, it was common for CND supporting women to 'present themselves as mothers' to appeal to 'supporters as well as to apply further pressure to those in power.'¹⁰ For Kate Barnet, the motivations for campaigning strengthened after the birth of her daughter. Barnet did not explicitly mention her support of maternalist or feminist activism, but there is evidence of her sympathies visible in her collection with leaflets relating to Parents for Survival and in her testimony describing the difficulties of looking after her daughter while campaigning.¹¹

As a Scottish campaigner, Barnet was concerned about the increase in nuclear weapons testing taking place and the lack of public consultation on the matter. The founders of CND encouraged political action to demonstrate to the British Government the widespread disapproval of their defence policies. CND emerged in late 1958 as one of the largest protest groups since the Suffragette Movement. CND advocated unilateral nuclear disarmament with members from across Britain and a variety of

⁶ Carol Hanisch, 'The Personal is Political: The Women's Liberation Movement Classic with a New Introduction', carolhanisch.org, <https://www.carolhanisch.org/CHwritings/PIP.html>, Accessed 8 September 2019.

⁷ Josephine Elgin, "Women and Peace: From Suffragists to the Greenham Women," in *Campaigns for Peace: British Peace Movements in the Twentieth Century*, ed. Richard Taylor and Nigel Young (Manchester: Manchester University Press, 1987), p. 239.

⁸ Elgin, "Women and Peace: From Suffragists to the Greenham Women," p. 243-44.

⁹ Celia McDonagh, "The Women's Peace Movement in Britain," *Frontiers: A Journal of Women Studies* (1985): p. 55.

¹⁰ Jodi Burkett, "Gender and the Campaign for Nuclear Disarmament in the 1960s," in *Handbook on Gender and War*, ed. Simona Sharoni et al. (Cheltenham: Edward Elgar Publishing, 2016), p. 423.

¹¹ Kate Barnet interview, (19 April 2019).

social backgrounds, but mainly middle class.¹² They organised large-scale protest marches, published literature detailing the dangers of nuclear weapons and highlighted the futility of trying to survive a nuclear attack.¹³

Scottish CND was a regional branch of the national CND which relied on the efforts of local campaign groups to spread their message across Scotland and worked with other nuclear resistant campaign groups.¹⁴ As a group that was not officially aligned to a political party, CND united people from diverse backgrounds both politically and socially who may not have previously worked together.¹⁵ However, John Mattausch suggests in the 1980s CND membership was 'not drawn from all walks of life; it displays an over-representation of well-educated state employees.'¹⁶ As a well-educated Scot, Kate Barnet contributed extensively to the material legacy of the CND creating a collection which highlights the variety of issues which motivated her to campaign and demonstrates the close connections between the personal and political issues which influenced her life.

Kate Barnet

Kate Barnet has been a life-long, passionate campaigner who for over 60 years has encouraged people to support and join the cause against nuclear weaponry. Inspired by her older sister, Barnet first began campaigning while studying at the University of Aberdeen aged 17 in 1960.¹⁷ She participated in local marches on RAF Edzell and in major Scottish cities, as well as travelling to the Aldermaston marches in the early 1960s (Fig. 4.2). Barnet attended the University of Edinburgh, continuing her studies for teacher training, where she was involved in establishing the university's student CND group.¹⁸

¹² Frank Parkin, *Middle Class Radicalism: The Social Bases of the British Campaign for Nuclear Disarmament* (Manchester: Manchester University Press, 1968).

¹³ Nehring, "Cold War, Apocalypse and Peaceful Atoms: Interpretations of Nuclear Energy in the British and West German Anti-Nuclear Weapons Movements, 1955-1964," p. 157.

¹⁴ Jamison, "Will They Blow Us A'Tae Hell? Strategies and Obstacles for the Disarmament Movement in Scotland," p. 119; Eschle, "Bairns Not Bombs: The Scottish Peace Movement and the British Nuclear State."

¹⁵ Bob Overy, *How Effective are Peace Movements?* (Montreal: Harvest House 1982), p. 23-4.

¹⁶ John Mattausch, *A Commitment to Campaign: A Sociological Study of C.N.D* (Manchester: Manchester University Press, 1989), p. 52.

¹⁷ Kate Barnet, interviewed by Sarah Harper, 10 April 2019.

¹⁸ Kate Barnet, interviewed by Sarah Harper, 10 April 2019.

Barnet's involvement with the CND, like the rest of the campaign dipped until the late 1970s, during which time she had lived and worked across Britain and abroad and gave birth to her daughter in 1979. Becoming a parent strengthened her views against nuclear weapons and inspired her to continue campaigning, commenting: 'if a nuclear war does happen and my children or the children of the world, turn around to me and say, 'How could you let this happen?' You say, 'Well, we did try to stop it. We did our best.'¹⁹



Fig. 4.2: Barnet marching at RAF Edzell wearing the 'I want to live' placard, October 1960 ©National Museums Scotland.

After a time of reduced CND activity, Kate became heavily involved in the organisation and campaigning of the Blairgowrie CND, joining in 1981. Throughout the 1980s and 1990s, Kate was very active in the Perthshire area, campaigning in the centre of Blairgowrie and other surrounding villages. She also took part in larger campaigns and marches such as the Peace March Scotland in 1982, and visited peace camps at Greenham Common, Fairford and demonstrated at Faslane where she was arrested on several occasions (Fig. 4.3).

¹⁹ Kate Barnet, interviewed by Dianne Child, 30 April 2009.



Fig. 4.3: Barnett (centre) with her pram stall visiting Greenham Common in 1983, ©National Museums Scotland.

At each of these demonstrations, Barnett was accompanied by some of the material under examination here. As such a personal collection, Barnett's identity and views are clearly identifiable, however this means that it only represents the wider Scottish CND movement to an extent. Barnett donated her objects to the museum to help commemorate the efforts of the CND, but they are clearly 'inalienable possessions' as Annette Weiner describes. This means that, even if they are passed on to someone else 'they are imbued with the intrinsic and ineffable qualities of previous owners.'²⁰ Similarly, Mihaly Csikszentmihalyi and Eugene Rochberg-Halton agree with Weiner suggesting: 'through these objects a part of the self comes to be embodied in the consciousness of others and will continue to exist long after the consciousness that moulded them has ceased to exist.'²¹ Barnett's personality and views are intrinsically linked to these objects even as they enter a new life phase in a museum context. Not all CND members were as active in producing material and distributing them, meaning

²⁰ Weiner, *Inalienable Possessions: The Paradox of Keeping-While Giving*, p. 6.

²¹ Mihaly Csikszentmihalyi, *The Meaning of Things: Domestic Symbols and the Self*, ed. Eugene Rochberg-Halton (Cambridge: Cambridge University Press, 1981), p. 190-91.

Barnet's extensive efforts may be unique. As a result, the personality of the original maker-owner of this collection, Barnet, is unavoidable when attempting to display this collection in a museum to represent the collective experience of the CND. Furthermore, the oral testimonies gathered by Senior Curator of Modern and Contemporary History, Dianne Child and myself, provided an opportunity for Barnet to use 'these objects as a pivot for introspection and a tool for reflective autobiography' which enhances the richness of this collection.²²

From the badges and stickers she sold from her pram stall, to the leaflets she distributed and the posters on display, this material culture was a key part of her campaigning. I will now examine the biographies of the selected items, firstly the CND logo stickers, then the pram stall leaflet and finally the rattle bottle. I will conclude by examining the relationship between Barnet and the museum and how the museum has influenced the meanings attached to these objects.

CND Logo Stickers

Kate Barnet's collection contains a variety of ephemera, each of which is a method of sharing the anti-nuclear message including posters, postcards, leaflets, badges, and stickers. Stickers have been used for centuries for advertising labels, stamps and to show support for a particular cause.²³ Much like badges, stickers are affixed to people, objects, buildings or anywhere where the owner thinks they may be the most visible. Stickers are ephemeral products which are not expected to be permanent or preserved, unless permanently affixed to something. The stickers under examination here are five small CND logo stickers, attached to a small piece of gummed paper (Fig. 4.4). Due to the unusual shape of the gummed paper, it seems this may be a cutting from a larger sheet of stickers.

The group of five stickers is an example of one of the most iconic and recognisable symbols ever produced. Designed by Gerald Holtom for the first Aldermaston march in 1958, the logo for the CND represents the semaphore for the initials 'N' and 'D.' Holtom also suggested the symbol could be seen as a broken cross symbolising the

²² Hoskins, "Agency, Biography and Objects," p. 79.

²³ Abacus Studios, 'The Story of Stickers from Ancient Egypt to Now', www.abalabels.co.uk, <https://www.abalabels.co.uk/the-story-stickers-from-ancient-egypt-to-now/>, Accessed: 14 February 2022.

death of man with the surrounding circle representing the unborn child.²⁴ This symbol unified the movement, as Holger Nehring argues: 'symbols were central for both internal reassurance and external representation [...] it was used by the protesters to assure themselves of a common cause in a world which they perceived as antagonistic.'²⁵ The CND symbol soon outgrew the campaign and Britain, becoming an international symbol of peace, protest, and defiance.²⁶



Fig. 4.4: Five CND Logo Stickers (W.MS.2000.28.313), ©National Museums Scotland.

The simplicity of the design made it easily replicable on a large scale, and being a circle, it was often used to replace the letter 'O' in some signs. Although referring to consumers of commercial branding, Richard Elliot and Kritsadarat Wattanasuwan emphasise that 'we live in a symbol-rich environment and [...] through the socialisation process consumers learn not only to agree on shared meanings of some symbols but also to develop individual symbolic interpretations of their own', this could also apply to the proliferation of the meaning of the CND logo as a symbol of peace.²⁷ The CND symbol was deliberately not put under copyright meaning it could be freely and widely

²⁴ Barry Miles, *Peace: 50 Years of Protest 1958-2008* (London: Collins and Brown, 2008), p. 8.

²⁵ Holger Nehring, "The British and West German Protests against Nuclear Weapons and the Cultures of the Cold War, 1957-64," *Contemporary British History* 19, no. 2 (2005): p. 199.

²⁶ Peggy Duff, *Left, Left, Left: A Personal Account of Six Protest Campaigns, 1945-65* (London: Allison and Busby, 1971), p. 117.

²⁷ Richard Elliott and Kritsadarat Wattanasuwan, "Brands as Symbolic Resources for the Construction of Identity," *International Journal of Advertising* 17, no. 2 (1998): p. 133.

used. In more recent years, the symbol has been used by fashion houses around the world such as Tiffany and Co. and Ed Hardy, who feature the symbol in their designs.²⁸ The adoption of the symbol in this way removes it from the context of the CND and as Christopher Beward remarked: 'Holtom is probably spinning in his grave now. The original anti-bomb marchers came from a very anti-fashion perspective.'²⁹ In terms of their biography, once these stickers were carefully designed, printed and distributed, they were made available to protestors by the CND who regularly published catalogues of CND branded stationery, jewellery, clothing and other items.



Fig. 4.5: Other examples of stickers in Barnet's collection include small CND stickers (W.MS.2000.28.311) and the remaining stickers of the 'Nuclear Free Dundee' campaign (W.MS.2000.28.312), ©National Museums Scotland.

Although the exact producer of these stickers is unknown, within the collection there are several catalogues from organisations such as Interhelp, Peace Concern and CND who advertise items available to buy or to distribute and may have been the source of

²⁸ Clare Coulson, '50 Years of the Peace Symbol', [theguardian.com](https://www.theguardian.com/world/2008/aug/22/nuclear.fashion), <https://www.theguardian.com/world/2008/aug/22/nuclear.fashion>, Accessed: 12 February 2022.

²⁹ Clare Coulson, '50 Years of the Peace Symbol', [theguardian.com](https://www.theguardian.com/world/2008/aug/22/nuclear.fashion), <https://www.theguardian.com/world/2008/aug/22/nuclear.fashion>, Accessed: 12 February 2022.

Christopher Beward is currently the Director of National Museums Scotland, having previously been the Head of Research at the V&A and contributor to the *Cold War Modern* exhibition in 2008.

these stickers. The five peace symbol stickers donated to the museum are the remaining stock Barnet had from selling them. There is a selection of other stickers in the collection, including window stickers, some larger and some small for wearing on the body (Fig. 4.5). Like the small CND logo stickers there are others also on gummed paper with stickers missing as evidence of the gifting or selling them in the past. All stickers in this collection promote the anti-nuclear message, each using distinctive symbols and design to spread the message. For example, the 'Dundee Nuclear Free' sticker uses the symbolism of a peace dove. The dove as an image of peace is inspired by Pablo Picasso's poster designs for the Communist peace movement which depicted a dove in flying towards peace in contrast to previous depictions of doves holding olive branches.³⁰ The dove and CND logo are quickly recognisable and as a movable sticker reached a wide audience.

These stickers are representative of the transactions between Barnet and the recipient of the stickers. These stickers were present at some of the many demonstrations Barnet attended both locally and nationally.³¹ As a purveyor of these materials via her pram stall, Kate bought a supply of these stickers from CND directly with the intent to sell or give them out while attending marches or street campaigning. To avoid any legal challenges, Barnet obtained a 'pedlar's licence' and made local police officers aware if she was going to be demonstrating or selling CND products in the area.³² This licence enabled Barnet to sell the stickers or give them away for free, meaning she was generating funds for future stock and spreading her message. With the moveability of these stickers in the past, they were able to be present in a variety of different environments where their message could be seen and shared.

The stickers have now become part of a museum collection preserved for posterity, where they will no longer be used as stickers or detached from the gummed paper. This does not mean they are no longer visually symbolic or striking in their message. However, their materiality has changed as these stickers will no longer be worn or used in the way they were originally intended. If used in a display, these stickers would be recognisable to those who were familiar or involved with the CND during the Cold

³⁰ Benjamin Ziemann, "The Code of Protest: Images of Peace in the West German Peace Movements, 1945–1990," *Contemporary European History* 17, no. 2 (2008): p. 255.

³¹ For example, Barnet took her stock of stickers, badges and leaflets to Greenham Common, see Fig. 4.3.

³² Kate Barnet, interviewed by Dianne Child, 30 April 2009.

War period. Even for those not familiar with the CND, this is still representative as a universal symbol of peace which was a key part of the CND movement. As a method of spreading the anti-nuclear messages of the CND, these stickers were a valuable tool. These stickers were a staple part of the inventory of her pram stall which she transported far and wide on anti-nuclear protesting missions.

Pram Stall Leaflet

As well as distributing stickers and badges, Kate Barnet used other innovative methods to spread the anti-nuclear message and to engage people in conversations about the dangers of nuclear weapons. One thing Barnet is most proud of is her pram stall. Once her daughter had grown out of using the pram, Barnet utilised it as a chariot to take her supplies of CND stickers, badges, balloons, leaflets and other paraphernalia into battle onto the street corners of Blairgowrie and afar. Even before her daughter outgrew the pram, Barnet remarked ‘that buggy was a godsend, because I had to have it for her, but it was like a walking office so there’d be space underneath for all the leaflets.’³³ Once stationary, Barnet set up the pram stall by displaying items attached to the sides of the pram and adding her selection of badges onto a black velvet stole and draped this over the hood of the pram.³⁴ The pram appeared at several major demonstrations such as those at Faslane Naval Base and peace camp as well as those at the Greenham Common Women’s Camp and received many compliments from fellow campaigners. After busy weekends of demonstrating and selling CND products, Barnet took stock of what she had sold most and quickly reordered to replenish her stock.³⁵

To share her success and inventive method, Barnet created a leaflet titled ‘A Pram Stall?’ which offers guidance to others on how to replicate her stall (Fig. 4.6). The handwritten and drawn, photocopied A5 sized leaflet shows an image of the pram stall

³³ Kate Barnet, interviewed by Sarah Harper, 10 April 2019.

³⁴ Kate Barnet, interviewed by Sarah Harper, 10 April 2019.

³⁵ Kate Barnet, interviewed by Sarah Harper, 10 April 2019.

in action with information below answering questions on the practicalities of establishing the stall.



Fig. 4.6: Pram Stall Leaflet (W.MS.2000.28.260), ©National Museums Scotland.

Barnet distributed this leaflet while conducting street campaigning across Perthshire and at larger marches and demonstrations. The obvious iconography on the pram stall leaflet is the CND logo on the shirt of the man and on one of the balloons which directly associates the leaflet with the CND. The other balloons partially covered by the CND logo balloon have the unfinished captions 'Giv Pea' and 'No Cr' which represent the 'Give Peace a Chance' and 'No Cruise' balloons Barnet had made for the Peace March Scotland. Barnet had been inspired by an American woman on a London march who

commented on the more sombre atmosphere at British marches in comparison to American marches. This gave Barnet the idea to sell and give out balloons at demonstrations to lighten up the mood.³⁶ The child in the leaflet is pointing and almost pulling the mother towards the stall, attracted by the balloons. Furthermore, with the sun in the top left corner and smiles on the peoples' faces, it is intended to portray a positive experience of spreading anti-nuclear materials from the pram and is an innocent, family-friendly activity as an alternative to other more abrupt or destructive methods of protesting.



Fig 4.7: Barnet (left) street campaigning with her pram stall in Blairgowrie, 1983, ©National Museums Scotland.

The symbolism shown in this leaflet is representative of much of the protest material relating to the anti-nuclear movement and is present elsewhere in Barnet's collection. Nehring suggests that 'symbols do not just form a passive reservoir for protest action which can be tapped or transcended. Rather, protestors actively create them', demonstrating how each protest movement develops their own style of campaigning without any rules or constraints.³⁷ With this freedom to convey the anti-nuclear message in any method and style, Barnet utilised her daughter's old pram to create a

³⁶ Kate Barnet, interviewed by Dianne Child, 30 April 2009.

³⁷ Nehring, "Politics, Symbols and the Public Sphere: The Protests Against Nuclear Weapons in Britain and West Germany, 1958–1963," p. 180.

mobile CND retail point and the supplementary leaflet to encourage others to imitate her invention. The imagery in the leaflet is amateur and not overly detailed, with clothed stick figures representing Barnet and her target audience. Although the drawing is very simplistic, it gives a good impression of what the pram stall is and clarifies what this invention may look like. The image in Fig. 4.7 shows Barnet and fellow CND members campaigning alongside the pram stall, which further demonstrates the likeness of the real pram stall to that depicted in the leaflet.

By donating this leaflet to the museum, Barnet is showing her pride in creating the leaflet as well as her invention of the pram stall. In the absence of the actual pram stall, this leaflet and the accompanying images, CND merchandise catalogues and surplus stock, offers an insight into this protesting method and assists in understanding the material culture directly produced by the CND and others. Through the process of donating Barnet could reflect on her efforts, remarking 'I'd forgotten how much work I'd put into CND!'³⁸ The volume of items donated, both professionally produced and those home-made by Barnet are material reminders of the issues she cared about and the events she organised and attended. Barnet mentioned the 'home-grown' nature of many of the leaflets, which she personally designed and produced alongside gathering and distributing leaflets from larger organisations like CND and the Peace Pledge Union. These homemade leaflets highlight not only the efforts to spread the anti-nuclear message but demonstrate the creativity and ingenuity of protesting via eye-catching material culture.

As well as using the leaflet to demonstrate her creativity, Barnet shares a part of her identity as a CND campaigner in the written description in the pram stall leaflet, as she shares advice directly related to her own experiences of street campaigning with the pram stall in Blairgowrie town centre. She even offers specific tips, for example, suggesting a Saturday morning and to locate the pram stall at 'any focal point- small town centre, or suburban post office. Better on a wide pavement', demonstrating her expertise. The connection to Barnet as a passionate CND campaigner and her views as a mother are key aspects which make up her identity. Sasha Roseneil argues that 'motivation [for campaigning] is complex and embedded in each individual's personal

³⁸ Letter from Kate Barnet to Dianne Child, November 25, 1998.

circumstances and biography.³⁹ This is especially true of women involved in the anti-nuclear campaign as many mothers felt obligated to act on behalf of the future of their children. This sentiment is shared by one mother supporting the campaign who commented: 'I've got two young children, and I've taken responsibility for their passage into adulthood...It is my responsibility to create a world fit for them to grow up in.'⁴⁰ This genuine concern from mothers is not only opposing the possession of nuclear weapons threatening the lives of their children, but also the government spending directed to warfare rather than welfare which directly effects families the most, this further motivated women to identify with and support the CND.⁴¹

As a method of protesting, the pram stall itself went through a change in materiality and use. From once a vehicle to support and protect a young child from danger, the pram became a vehicle designed to spread an important message to protect the same child from the dangers of a nuclear weapons filled world. The function of the pram has altered from carrying a child to transporting CND merchandise. However, in both forms its role is still to protect children from harm. The leaflet itself is a photocopy of the original leaflet meaning it is an example of what a person on the street might have received in comparison to the original drawing.

This leaflet is made from Kate's perspective as a mother and deliberately offers practical advice to encourage other parents who also support the CND but need to care for their children. As a result, this type of protest material is more attractive to a female audience. Catherine Eschle's research on gender and anti-nuclear politics highlights how the maternalist discourse used the caring responsibilities and values associated with motherhood to suggest for a successful anti-nuclear world there needed to be a 're-evaluation, reimagining, and extension of maternal values and practises' in order to displace masculine corollaries.⁴² This justified female-lead

³⁹ Roseneil, "Feminist Political Action: The Case of the Greenham Common Women's Peace Camp," p. 83.

⁴⁰ Alice Cook and Gwyn Kirk, *Greenham Women Everywhere Dreams, Ideas and Actions from the Women's Peace Movement* (London: Pluto, 1983), p. 27.

⁴¹ Elgin, "Women and Peace: From Suffragists to the Greenham Women," p. 243-44.

⁴² Catherine Eschle, "Gender and the Subject of (Anti) Nuclear Politics: Revisiting Women's Campaigning Against the Bomb," *International Studies Quarterly* 57, no. 4 (2013): p. 716; Roseneil, "Feminist Political Action: The Case of the Greenham Common Women's Peace Camp."; Jill Liddington, *The Road to Greenham Common: Feminism and Anti-Militarism in Britain Since 1820*, Syracuse University Press edition. ed. (Syracuse: Syracuse University Press, 1991).

campaigns and associated symbolism and artist outputs which emphasised motherhood.⁴³

Barnet's relationship with fellow campaigners becomes tangible through the pram stall and the leaflet: regular campaigners recognised Barnet for her trademark pram stall. Barnet explained her thoughts behind creating the pram stall as a way to be uplifting and to encourage others, commenting: 'doom and gloom is too difficult for people...that's why I was operating that way with [...] the pram, that just made it easier for people to engage.'⁴⁴ Barnet recalled: 'there is something about a pram that affects people', going on to describe taking her pram stall to Arbroath CND where a man asked if there was a baby in the pram and complimented her on her 'magic' pram.⁴⁵ Barnet recognised that street campaigning was a relatively easy and effective way of engaging with people, more so than posting leaflets through doors as it led to more meaningful discussions with people and it offered a gauge of local opinion on the issue.⁴⁶ As well as those willing to receive the leaflet or sticker from Barnet, there were also those who had differing views on nuclear weapons who may have reacted negatively to her pram stall. However, Barnet did not recall anyone being aggressive towards her as she recognised when people did not want to engage, or she responded pleasantly when they disagreed with her.⁴⁷ Barnet continued to demonstrate with the pram stall until the 2010s when due to various operations she wound down her stock and retired the pram stall.⁴⁸

As Barnet became less active in the CND and did not actively produce CND material, the pram stall leaflet came to the end of its active life and transitioned to becoming a museum object. This means that the leaflet is appreciated by people in a different context. Rather than being viewed in the context of an active demonstration and surrounded by people who are active supporters of the CND cause, in the museum the leaflet is grouped with other similar material and viewed by curators and researchers who may not support the CND. Despite this, the leaflet and others in the

⁴³ Eschle, "Gender and the Subject of (Anti) Nuclear Politics: Revisiting Women's Campaigning Against the Bomb," p. 716.

⁴⁴ Kate Barnet, interviewed by Sarah Harper, 10 April 2019.

⁴⁵ Kate Barnet, interviewed by Dianne Child, 30 April 2009.

⁴⁶ Kate Barnet, interviewed by Dianne Child, 30 April 2009.

⁴⁷ Kate Barnet, interviewed by Sarah Harper, 10 April 2019.

⁴⁸ Kate Barnet, interviewed by Sarah Harper, 10 April 2019.

collection can be appreciated for their artistic merits and their representation of this important social movement.

The portability of leaflets mean they can be handed to people personally or be left on a coffee table or in a café where there are potentially multiple audiences. However, this mobility of the leaflet ends as it enters the museum collection. In becoming a display object within a museum, this leaflet is unlikely to be read through as intended and it will cease to be shared in the movable way it had previously. Furthermore, the casual nature of leaflet distribution contrasts with the way the museum treats the leaflets now where they are carefully placed in their own Polyester sleeves, stored in conservation grade boxes, and individually catalogued. Then, if displayed publicly, a range of preventive conservation methods such as appropriate lighting, temperature and relative humidity controls would need to be considered to ensure the paper and ink on the leaflet does not deteriorate. The museum has drastically changed the meaning and function of the objects within this collection from activist 'disobedient' objects to one tamed by the museum. This is especially applicable to the rattle bottle.

Rattle Bottle

The CND stickers and the pram stall leaflets distributed from the pram stall were key to Barnett's regular campaigning and were also present when she took part on larger demonstrations. Barnett first encountered the object shown in Figures 4.8 and 4.9 on the Peace March Scotland in 1982, a march beginning in Inverness and taking in all major Scottish cities before ending in Edinburgh.⁴⁹ Barnett acquired this *Comfort* fabric softener bottle fashioned into a noisy rattle from a kind minister on this march. The purpose of the Peace March Scotland was to 'inform and activate the people of Scotland in the cause of Peace' with a view that the high concentration of nuclear weapons and targets in Scotland were an obstacle to achieving peace.⁵⁰

⁴⁹ *Peace March Scotland: Marcher's Booklet/Journal*, (Glasgow: Peace March Scotland, 1982), p. 3.

⁵⁰ *Peace March Scotland: Marcher's Booklet/Journal*, p. 3.

While on the march, Barnet and her 2-year-old daughter were invited to stay with a local minister for the night. The minister gifted her this improvised musical instrument, adorned with anti-nuclear stickers. This object is the largest three-dimensional object in Barnet's collection and has a fascinating object biography, from being an everyday commercial product to a disobedient protest object and now part of the NMS collection. Of the objects I have selected, the rattle bottle has experienced the most radical transformation in materiality and function over its lifetime.



Fig. 4.8 and Fig. 4.9: Kate Barnet's rattle bottle (X.2019.366), ©Sarah Harper

Due to the shape and handle, the rattle bottle most resembles a *Comfort* fabric softener bottle (Fig. 4.9). Produced by British soap manufacturers *Lever Brothers* and owned by British-Dutch consumer goods company *Unilever*, *Comfort* launched as the first fabric softener available in Britain in 1969.⁵¹ By 1982, when the minister (or a member of his family) bought the original bottle, the *Comfort* brand was well established and likely to be a regular and familiar choice. Even though the original *Comfort* branding was removed and replaced with anti-nuclear stickers, it is likely Barnet and fellow marchers recognised the bottle as a former fabric softener bottle

⁵¹ Unilever, "*Comfort*," www.unilever.co.uk, www.unilever.co.uk/brands/home-care/comfort.html, Accessed: 24 June 2019.

and may have even been able to identify it as a *Comfort* bottle due to the shape and colour. Other similarly shaped containers could have easily been used to create the rattle; therefore, the *Comfort* bottle was probably chosen through opportunity and appropriateness rather than being carefully selected. The use of an object created for mass consumption for a protest is ironic as many protesting saw nuclear proliferation as a direct result of mass consumerism. Sasha Roseneil suggests the anti-nuclear movement developed in opposition to the British Government's policies and practices, but also in 'critique of the materialism and consumption patterns of industrial societies.'⁵² This ultimately made protestors believe extra-parliamentary forms of political action were necessary and valid. The next phase of the bottle's life sees it being repurposed rather than discarded and transformed into a musical instrument. This effort to recycle the plastic bottle also highlights the synergy between anti-nuclear campaigning and environmentalism. Jodi Burkett has examined the changing attitude towards the environment because of the increasing popular understanding of the destructive power of nuclear weapons during the height of CND campaigning.⁵³



Fig. 4.10: *Comfort* Advertisement 1985.

Reproduced with the kind permission of Unilever Plc and Group Companies.

⁵² Roseneil, "Feminist Political Action: The Case of the Greenham Common Women's Peace Camp," p. 49-50.

⁵³ Jodi Burkett, "The Campaign for Nuclear Disarmament and Changing Attitudes Towards the Earth in the Nuclear Age," *The British Journal for the History of Science* 45, no. 4 (2012): p. 625.

According to Barnet, the minister prepared the recycled bottle by cleaning out the sticky remnants of the fabric softener and ensured the insides were dry before filling the bottle with a small amount of dry beans. The original branding and labels were removed to make way for two anti-nuclear stickers. The ergonomic shape of the bottle and lightweight feel makes it comfortable to hold and is a well-chosen bottle to be transformed into a rattle. Even the bright, light turquoise colour of the bottle adds to its attractiveness as an accessory to the march to capture people's attention. Furthermore, a key feature of the bottle is the fact that it rattled to make noise and drew people's attention to Barnet.⁵⁴ This improvised musical device provided a steady beating backing track to the group campaign songs and chants heard at demonstrations. Anna Feigenbaum suggests that objects gather meaning in their assemblages or how they are combined with other technologies, bodies, and environments, giving the example: 'while the cup or bottle in my cupboard may not be "disobedient", when repurposed and placed into the protest camp as objects of affinity and counter-repression, they become disobedient', this is the case for the rattle bottle.⁵⁵

Other signs of the change in materiality are visible in the patina of the bottle. The patina 'serves as a kind of visual proof of status' with marks, indentations and some discolouration, which adds valuable authenticity as they link the bottle to human networks it has been involved with over time.⁵⁶ These imperfections are the evidence of shared usage by those on the march and as entertainment for her young daughter on the long journey. Furthermore, the bottle already had been used before the minister gifted it to Barnet meaning the patina of the bottle could have already been altered. The minister used his creativity to adapt an unassuming bottle into a rattle and ultimately a unique object with provocative symbolism.

The sticker in Fig 4.9 has 'SCRAM 031 225 7752' written at the bottom, marking the Scottish Campaign to Resist the Atomic Menace (SCRAM) as producer and offers a contact telephone number. SCRAM formed in 1975 and worked with action groups opposing every aspect of the nuclear chain from uranium mining to nuclear weapons.⁵⁷

⁵⁴ Kate Barnet, interviewed by Sarah Harper, 10 April 2019.

⁵⁵ Anna Feigenbaum, "The Disobedient Objects of Protest Camps," in *Disobedient Objects*, ed. Catherine Flood and Gavin Grindon (London: V&A Publishing, 2014), p. 36.

⁵⁶ Grant David McCracken, *The Long Interview* (London: Sage Publications, 1988), p. 32.

⁵⁷ SCRAM, *Nuclear Free Scotland: A Campaigner's Manual* (Edinburgh: SCRAM, 1982), p. 16.

The sticker made by SCRAM connects the rattle bottle to both the Scottish anti-nuclear campaign and the national campaign as the sticker in Fig. 4.8 gives the CND central office address in London to contact. The image in Fig. 4.8 shows a Trident missile, replacing the letter 'l' in 'Stop Trident', blasting through clouds with blue wavy lines at the bottom, representing blue sky or water as if the missile had emerged from a Trident submarine. This use of symbols to replace letters in slogans is a common tactic in campaigning material to convey a message using recognisable imagery but can also be understood when read. The image of a missile is often used in anti-nuclear literature to give the public a stark, visual image of what a missile looks like and allude to the potential destruction it could cause. This visual symbolism is key in assigning Cold War meanings to the rattle bottle as it represents the opposition to Trident and infers to the relationship between Britain and the USA as Trident was bought from the USA in 1980.⁵⁸

Understanding the relationships and networks the rattle bottle was party to is key in alluding to how people ascribed authenticity and value to the object.⁵⁹ The connection between material culture and people is undeniable. It is therefore worth considering the individuals and networks of social relations embedded in the rattle bottle at various stages of its life. Siân Jones proposes in objects like the rattle bottle, 'it is the relationships embodied by their cultural biographies, from their origins to the present day, which inform the experience of authenticity and its powerful impact on people's lives', demonstrating a how object also represents the people it gathered throughout its life journey.⁶⁰

One of the key relationships in the biography of the rattle bottle is between the minister and Barnet. As a mother with a young child, Barnet was given preferential treatment over the other marchers when accommodation was being allocated in villages and towns on the route. The minister was a family man who invited Barnet and her daughter to stay in the manse for the evening. Although uncertain, Barnet recalled the location of the manse as somewhere between Perth and Glasgow and guessed it may

⁵⁸ Peter Byrd, "The Development of the Peace Movement in Britain," in *The Peace Movements in Europe and the United States*, ed. Werner Kaltefleiter and Robert L. Pfaltzgraff (London: Croom and Helm, 1985), p. 65.

⁵⁹ Jones, "Negotiating Authentic Objects and Authentic Selves: Beyond the Deconstruction of Authenticity," p. 184.

⁶⁰ Jones, "Negotiating Authentic Objects and Authentic Selves: Beyond the Deconstruction of Authenticity," p. 198.

have been in Dollar, which was a designated stopping point on the PMS82 route.⁶¹ The minister kindly allowed Barnet and her daughter to stay and gave her the rattle bottle as a parting gift. The act of gifting is also important as although Igor Kopytoff suggests 'gifts are given in order to evoke an obligation to give back a gift', in this case it is unlikely the minister expected a gift in return apart from verbal gratitude.⁶² Instead, as in Marcel Mauss' study of gifting rituals in Polynesia and the concept of *hau*, the minister is gifting the rattle bottle as something 'invested with life' and 'possessing individuality.'⁶³ The minister is seen to be transferring the rattle bottle which is of low monetary value, but is high in symbolic value and a meaningful gesture to Barnet. As a result of this gift, the minister is sharing support for Barnet's cause and has added a layer of authenticity onto the rattle bottle as the bottle will always be a reminder of him and his creativity. Without him, this fabric softener bottle may not have transformed into the rattle bottle, hence why he is such an important actor in the biography of the object.

The rattle bottle has also become a valuable asset to Barnet who was pleasantly surprised when the minister gave her the rattle bottle, commenting: 'I was impressed, as I would not have had the imagination to make such a rattle bottle myself.'⁶⁴ The efforts of a home-made gift as opposed to something mass-produced made the rattle bottle even more special and appreciated. Barnet also commented: 'it's nice when somebody does something spontaneous like that, that this minister just produced this.'⁶⁵ Through this gift exchange, the minister is consolidating their relationship and recognising their mutual sympathies to the anti-nuclear cause. This personalisation of a political statement can be seen across Barnet's collection, especially in her hand-drawn or written leaflets and posters, which bring international issues down to smaller local levels.

Fellow campaigners and marchers on the PMS82 protest were part of the network of social relationships surrounding the rattle bottle. These people of different ages and backgrounds developed into a close-knit community over the course of the march.

⁶¹ Peace March Scotland 1982, *Marcher's Booklet/ Journal*, (Glasgow: Peace March Scotland 1982), p. 20.

⁶² Kopytoff, "The Cultural Biography of Things: Commoditization as Process," p. 69.

⁶³ Marcel Mauss, *The Gift: The Form and Reason for Exchange in Archaic Societies*, ed. Mary Douglas and W. D. Halls (London: Routledge, 2002), p. 16. *Hau* is Maori concerning the spirit of things which transfers the spirit of the original owners through the gift.

⁶⁴ Email correspondence between Sarah Harper and Kate Barnet, 31 July 2019.

⁶⁵ Kate Barnet, interviewed by Sarah Harper, 10 April 2019.

There was a regular core of around 60 marchers, which fluctuated as people joined or departed at the designated stopping points. Barnet recalled many acts of kindness from people in the villages they marched through, with one giving the group a large tray of fresh strawberries from a local farm.⁶⁶ This kindness from strangers is embodied by the rattle bottle, as it represents the compassion of the minister to give Barnet and her child a warm bed for the night and relief from the 336-mile journey, with Barnet recalling: 'there was always somebody who would take care of you.'⁶⁷ The rattle bottle became a feature of the march as well as a souvenir for Barnet. It was during my interview with Barnet when she was recalling her experiences on the PMS82 march that she retrieved the bottle from a box underneath her piano. The rattle bottle became the embodiment of her experiences on this march and also came to represent her most active years of protesting.

In subsequent years after the PMS82, the noise of the rattle bottle continued as background audio in Barnet's everyday life as she recalled her foster children playing with the rattle as a form of entertainment. Barnet reminisced the 'children often dived into the basket to get something to make music/noise with'; this could also explain the current signs of wear on the bottle.⁶⁸ The rattle bottle offers a unique piece of audio history as with the shake of the bottle, the sound of Barnet or fellow marchers can be replicated 40 years after being heard on the PMS82 march. Even being positioned underneath her piano meant its life continued as an instrument, not just a fabric softener bottle and was still used to make sound. The rattle bottle is a prime example of a combination of sources of authenticity, as beyond physical and visual properties, the inclusion of the rattle bottle on the PMS82 march and the continued usage by Barnet's foster children adds validity to its story and patina.

⁶⁶ Kate Barnet, interviewed by Sarah Harper, 10 April 2019.

⁶⁷ Kate Barnet, interviewed by Sarah Harper, 10 April 2019.

⁶⁸ Email correspondence between Sarah Harper and Kate Barnet, 31 July 2019.

Barnet's previous experience of donating to NMS prior to my interview with her may have influenced her decision to donate again. Dianne Child, the Senior Curator of Modern and Contemporary History at NMS, was key in the acquisition process of the rattle bottle as she walked me through the acquisition proposal form, and she encouraged me to continue dialogue with Barnet to organise retrieving the rattle bottle. Through this process we can see how Child supported this acquisition and described its 'interesting object history', with great graphics and interactive qualities which were good reasons to acquire it.⁷⁰ To arrange the donation, I posted Barnet the 'Museum Object Entry Form' for her to complete to formalise her donation which she returned with the rattle bottle through the post. The rattle bottle was given the accession number X.2019.366 and marked with this number on the base of the bottle (Fig. 4.12). The dried beans were removed from the package Barnet sent and were placed inside a smaller plastic pouch and wrapped on the outside of the bottle under a sheet of acid-free tissue. The rattle bottle is stored in a tray alongside ephemeral items relating to the Scottish Independence Referendum as there was sufficient room in the tray and relates to a theme of campaigning. Through these standard museum practices, the rattle bottle becomes silent and officially a part of the National Museums Scotland collection. The continued relationship between Barnet and NMS enabled a smooth acquisition process for the rattle bottle.

Kate Barnet and National Museums Scotland

The relationship between Barnet and National Museums Scotland, and especially with Dianne Child, was pivotal in bringing her collection to the museum. This relationship is key to the biography of the rattle bottle and all of Barnet's ephemera as this marks the beginning of the object's museum life and adds a new layer of authenticity as they become artefacts. At the time of acquiring Barnet's collection of ephemera, much of the museum collecting was gained through fieldwork and was more proactive. This is in comparison to present day as Child mentioned, due to time burdens and resource constraints, most collecting is reactive and often driven by specific projects or exhibitions.⁷¹ Child's perspective is not unusual. Sharon Macdonald and Jennie

⁷⁰ Dianne Child, interviewed by Sarah Harper, 25 July 2019.

⁷¹ Dianne Child, interviewed by Sarah Harper, 25 July 2019.

Morgan highlight the increasing challenges for curators to justify their acquisition choices, commenting that 'curators perhaps tend only to consider collecting those objects for which they can clearly and convincingly identify and articulate the significance.'⁷² With less haphazard collecting and key protocols such as acquisition proposals, museums are developing essential best practice for collecting to ensure that every object acquired is clearly justified, which will lead to fewer issues with profusion in the future.

For Child, the most important criterion for collecting an object is if it is 'allowing you to tell a story in the future about a specific person or event or activity' and it's potential to be displayed and equally how significant it is to research.⁷³ As a museum professional, Dianne has the power to actively produce and convey the value of these objects in the museum by classifying and displaying them, with this validity adding to the object's authenticity.⁷⁴ In accepting the Kate Barnet collection Child was not thinking about these objects as examples of Cold War material culture. As a theme the museum has only begun to acknowledge more in recent years, it is unlikely Dianne was encouraged to collect items based on their merits as Cold War objects. Instead, through this research and a wider awareness of examples of Cold War material culture within the NMS collection, the Kate Barnet collection is now viewed in this way.

The influence of the curator is an important element in the life of the museum object as they can influence whether an object is acquired, displayed, or researched. Samuel Alberti suggests an object's biography does not stagnate when it enters the museum, as it then becomes under the influence of museum professionals and eventually the public who encounter it.⁷⁵ As the objects at the focus of this study are found in a museum environment, their meanings and values have altered as they are removed from their original context and to some extent are slowly losing their qualities as 'disobedient' objects as the museum begins to tame them.⁷⁶ Now as artefacts are

⁷² Sharon Macdonald and Jennie Morgan, "'How Can We Know the Future?' Uncertainty, Transformation and Magical Techniques of Significance Assessment in Museum Collecting," in *Assessment of Significance Interpretation- Implication- Reinterpretation*, ed. Regine Falkenburg and Thomas Jander (Berlin: Deutsche Historische Museum, 2018), p. 24-25.

⁷³ Dianne Child, interviewed by Sarah Harper, 25 July 2019.

⁷⁴ Jones, "Negotiating Authentic Objects and Authentic Selves: Beyond the Deconstruction of Authenticity," p. 182.

⁷⁵ Alberti, "Objects and the Museum," p. 565.

⁷⁶ Alan Radley, "Artefacts, Memory and a Sense of the Past," in *Collective Remembering*, ed. David Middleton and Derek Edwards (London: Sage, 1990), p. 51-2.

under the constraints of collections care and conservation policies, their functionality is reduced and will no longer be used as they were originally intended, for instance the rattle bottle will no longer be permitted to be taken on a march to be shaken. As a result, these objects are now influenced by the 'museum effect' whereby an object, isolated from its original setting, is transformed into something to be viewed as art and appreciated for their creative aspects rather than their original functions.⁷⁷ However, unlike banners from the miners strikes or the sashes of the Suffragettes which are representative of previous resolved struggles, the possession of nuclear weapons remains a controversial contemporary issue, meaning their representation in a museum can still attempt to influence their viewers as they originally intended.

Due to the ephemeral nature of 'disobedient' objects, it is fortunate that they have been captured by museums meaning their rich histories are not lost. Protest objects were not made with museum preservation in mind and do not need the museum to legitimise them. However, as Flood and Grindon highlight, this does not mean protest objects would have nothing to gain by being part of a museum collection.⁷⁸ To this extent, protest objects represent history from below and offer alternative views to accepted narratives of the Cold War period. Furthermore, there is a hint of irony in that museums as institutions originally created to offer rational recreation to the public are now displaying objects which are purposefully disruptive rather than civilising.⁷⁹

Although this collection now belongs to the museum, the personal connection to Barnet remains strong. These items represent Barnet's personal motivations for protesting and emphasise her dedication to the CND on a national and local level. From the interviews with Barnet and original correspondence letters, the museum can legitimately authenticate this collection as genuine and deem it as nationally significant. This is in comparison to many museum objects which have very little or no provenance. As the researcher responsible for cataloguing this collection and having personal contact with Barnet, my views on the authenticity of this collection may be biased as I have to some extent become attached to these objects.⁸⁰ Due to these

⁷⁷ Alpers, "The Museum as a Way of Seeing," p. 27.

⁷⁸ Flood and Grindon, *Disobedient Objects*, p. 22.

⁷⁹ Flood and Grindon, *Disobedient Objects*, p. 19.

⁸⁰ Alison Hess, "Unlocking the Meanings of Collections: Expertise, Care and the Science Museum's Locks and Fastenings Collection," in *Exploring Emotion, Care, and Enthusiasm in "Unloved" Museum Collections.*, ed. Anna Woodham, Rhianedd Smith, and Alison Hess (Amsterdam: Amsterdam University Press, 2020), p. 27.

interactions, these objects do hold an aura for me as they intertwine Barnett's personal experiences and her efforts to fight a major issue of the Cold War on a local level.

The meanings and values attached to the Kate Barnett collection have been ascribed at various points of their lives, from the minister and the marchers for the rattle bottle, to Barnett's daughter connections to the pram stall and the places at which the stickers were given out to sympathetic supporters. When discussing civil defence pamphlets, Barnett said 'this is more pertaining to the Cold War', giving the impression she did not recognise her involvement in the Cold War or that ascribes Cold War connotation with her collection.⁸¹ Her strong anti-nuclear views are also a factor in her distancing her experiences with the Cold War, a period defined by rising and falling tensions caused by nuclear weapons proliferation.

The biographies of these objects are key in highlighting these connections and demonstrating the points at which authenticity is assigned by different actors. In the museum setting, the CND collection is seen out of the context of a protest or demonstration and without Barnett's presence. Instead, viewers of the collection, most often museum staff, researchers, or visitors, are free to interpret and attach their own meaning to this collection. As time has progressed, many viewers are not aware of the CND or their activities during the Cold War period or beyond, as the threat from nuclear weapons has lessened. This means that this collection has the potential to be viewed more for its material and artistic merits rather than its Cold War connections. This collection can easily be linked to the Cold War as nuclear warfare and the campaigning in opposition to nuclear proliferation is emblematic of the period. The Cold War generated the fear surrounding nuclear weapons for many British citizens, who through their shared anxiety united to challenge the government through protesting. This collection is a product of these protests and therefore are Cold War objects.

Conclusion

The Cold War and the CND movement are inextricably linked, both fuelled by the threat and power of nuclear weapons. The material culture associated with the anti-nuclear movement is representative of this period and this battle between pro and anti-nuclear debates. The collection Kate Barnett donated to National Museums Scotland

⁸¹ Kate Barnett, interviewed by Sarah Harper, 10 April 2019.

is tangible evidence of the opposition to nuclear weapons, both representative of national groups like CND as well as personal efforts from individuals. The mixture of mass produced and homemade material is also emblematic of the grassroots nature of the CND movement and the abilities of anyone to creatively contribute to spreading the anti-nuclear message.

By applying an object biography approach to a selection of Kate Barnet's CND collection, we can see the progression in Barnet's personal efforts to support the cause over her forty years of campaigning. The objects selected here, the small CND logo stickers, the pram stall leaflet and the rattle bottle all highlight different aspects of Barnet's protesting experiences. From creating the pram stall and selling stickers, badges, and other CND products to participating in the Peace March Scotland, these objects are representative of the various people who influenced her and the places that campaigning took her. Through these relationships with people like the minister, fellow protestors and now with the museum, these objects have gained new layers of authenticity depending on how these people have viewed the objects and in what environment.

Through the iconic stickers, the pram stall leaflet and the rattle bottle, we can see the transformation in meaning from everyday products or ephemeral objects to becoming 'disobedient' protest objects then finally becoming tamed museum objects. These objects entered a new phase of their lives when they became part of the museum collection, where they are no longer viewed as active protest material but as tangible evidence of this period and for their artistic and creative symbolism.

The visual symbolism of the CND movement is also a key part of the designs of much of this collection. The iconic CND symbol has now exceeded its original meaning and has become a universal symbol of peace. To younger viewers of this collection in a museum context, they may not appreciate this symbolism as connected to the anti-nuclear movement specifically but instead appreciate it as a motif of peace. In a similar way, this could mean some visitors may not recognise these as 'Cold War' objects. However, by explaining the context in which this collection was made, the objects are clearly a reflection of Cold War history.

Chapter 5: Bringing the Cold War Home: Soviet and Space Race Souvenirs

The launch of the satellite Sputnik 1 by the USSR on the 4 October 1957 sparked widespread anxiety across the world. The scientific and technological capabilities of the Soviets became clear, especially as fear grew around the idea that 'a nation that could send up a satellite could, presumably, hurl much more dangerous items across time and space.'⁸² The Sputnik launch became a powerful symbol of the rivalry between the Cold War superpowers and marked a step change in the political and technical relationship between East and West.⁸³ This significant achievement, widely celebrated in the USSR, became the first of many endeavours in space and the beginning of the Space Race. The USSR commissioned a wide range of art works, exhibitions, and souvenirs to share their pride and promote superiority over the USA in space. Souvenirs such as badges, ornaments and cigarette paraphernalia were adorned with images of space, Sputnik and Yuri Gagarin alongside CCCP red branding and key dates of these achievements. Manufacturing and collecting pin badges or *znachki* were particularly popular in the USSR where there were few other affordable commodities available to all citizens.⁸⁴

The Space Race has been materialised in several ways, including preserving pieces of spacecraft hardware, astronaut's clothing and equipment and objects that are special because they have been into space. Aside from these direct material offerings from space programmes, there is a wide range of ephemeral and souvenir products that were created specifically to commemorate elements of the Space Race. These include large scale sculptures, portraits, and posters, as well as small items available to all citizens such as ornaments, stamps, and badges.

⁸² Audra J. Wolfe, *Competing with the Soviets: Science, Technology, and the State in Cold War America* (Baltimore: Johns Hopkins University Press, 2013), p. 40.

⁸³ Alexei Kojevnikov, "The Cultural Spaces of the Soviet Cosmos," in *Into the Cosmos: Space Exploration and Soviet Culture*, ed. James T. Andrews and Asif A. Siddiqi (Pittsburgh: University of Pittsburgh, 2011), p. 22.

⁸⁴ Susie Armitage, "The USSR's Hottest Collectibles are all Over eBay and Instagram", *atlasobscura.com*, <https://www.atlasobscura.com/articles/soviet-pin-collectors>, Accessed: 23 May 2021.

The word *znachki* is the plural of *znachok* meaning pin or badge in Russian with collectors known as falerists (or phalerists).⁸⁵ Soviet citizens embraced this new badge collecting trend and it became very popular with people endeavouring to complete sets as a hobby, gifting them to friends and displaying them attached to their clothing.⁸⁶ One of the main reasons the badges were accessible to most of the population was their very low prices. Badges were available at local markets and from street vendors where they cost less than a loaf of bread, paid for in Kopeks the equivalent of pennies.⁸⁷ With *znachki* available at most kiosks and shops across the country, some collectors said it was hard not to buy them.⁸⁸ Collecting societies and clubs sprang up in many Soviet cities, such as the Phalerist Club in Moscow which had more than 2500 members and offered a place to exchange, buy and share information about their badge collections.⁸⁹

Badges were used as a tool for generating a collective identity, to commemorate significant events and to show allegiance to sports teams, factories, and facets of government. Tourists to the USSR during and after the Cold War often gathered these pins as souvenirs and novelty items to take back home. Receiving souvenirs as gifts and the increasing number bought online means that souvenirs are not always connected to tourism experiences. Instead, souvenirs are appreciated for different reasons such as acting as proxy for the real experience for non-travellers or collecting for a hobby or aesthetic reasons.⁹⁰

National Museums Scotland holds a collection of Soviet and Space Race souvenirs donated by Callum Russell in 2018. Callum Russell was born into a middle-class family in 1950, growing up on the Wirral. After leaving school, he studied at Hertford College Oxford and went onto the University of British Columbia, Vancouver. For all his working life, Russell was a civil servant working for the Scottish Office and later

⁸⁵ Cathleen S Lewis, "From the Kitchen into Orbit: The Convergence of Human Spaceflight and Krushchev's Nascent Consumerism," in *Into the Cosmos: Space Exploration and Soviet Culture*, ed. James T Andrews and Asif A Siddiqi (Pittsburgh: University of Pittsburgh, 2011), p. 228.

⁸⁶ Anne M Platoff, "Soiuz and Symbolic Union: Representations of Unity in Soviet Symbolism," *Raven* Vol. 27 (2020): p. 62.

⁸⁷ "Queries from Readers", *Soviet Life Magazine*, June 1976, No. 6 (237), p.28.

⁸⁸ Susie Armitage, "The USSR's Hottest Collectibles are all Over eBay and Instagram", *atlasobscura.com*, <https://www.atlasobscura.com/articles/soviet-pin-collectors>, Accessed: 23 May 2021.

⁸⁹ "Queries from Readers", *Soviet Life Magazine*, June 1976, No. 6 (237), p.28.

⁹⁰ Kristen K. Swanson and Dallen J. Timothy, "Souvenirs: Icons of Meaning, Commercialization and Commoditization," *Tourism Management* 33, no. 3 (2012): p. 497.

Scottish Government.⁹¹ His fascination with space began as a small child after hearing the bleeps of Sputnik on the radio and later learning about Yuri Gagarin's successful flight as a schoolboy.⁹² In more recent years, Russell maintained an interest in the Space Race reflecting:

'That interest was rekindled with the growing talk of just how many years had passed since man was last in Space. I thought back to what it was like to live through those times. And then of course the internet meant that one could actually acquire some of the quirky items which originated in the 50s and 60s and which I then began to collect.'⁹³

Russell gathered his collection systematically over a period of ten to twelve years, with pieces bought online and through auction websites such as eBay. This collection contains three cigarette boxes, a bust of Gagarin, a plastic rocket adorned with Gagarin's face, three desk ornaments displaying the Earth with rockets or Sputnik shooting from them, a book titled *Soviet Man in Space* commissioned by the Moscow Foreign Languages publishing house and 15 metal pin badges.

The meaning of these badges differ between the different actors these souvenirs have encountered throughout their lives from collectors to the museum curators responsible for them. This chapter will focus on a selection of the Space Race and Soviet souvenirs NMS holds to explore how Cold War meanings have become attached to these objects and how those who have interacted with these badges have ascribed authenticity on to them. By following a biography of this collection of objects, I will examine the perspectives of individuals connected to the objects at various points in their lives; from their Russian origins to becoming commodities and collector's items, and eventual donation to the museum. Furthermore, I will highlight the motivations of modern collectors of Soviet souvenirs and the meanings they attach to these objects. Firstly, I will offer some context to the Space Race and the presence of related material culture in Britain.

⁹¹ Email correspondence between Sarah Harper and Callum Russell, 28 October 2022.

⁹² Callum Russell, interviewed by Sarah Harper, 17 May 2021.

⁹³ Email correspondence between Sarah Harper and Callum Russell, 28 October 2022.

The Space Race Story

A childhood fascination with the Space Race spurred Callum Russell into beginning his collection of related souvenirs and *znachki*. From his position as a schoolboy, he was unaware of how not everyone shared his excitement for space exploration as some perceived this to be a potentially threatening act and saw outer space becoming another battlefield of the Cold War.⁹⁴ The battle to dominate space heightened during the Cold War period, particularly from the mid-1950s to the late 1960s between the United States of America and the Soviet Union.⁹⁵ Originally, each nation strived to develop rocket science and produce ballistic missiles for defence purposes, before turning their attention to utilising this new science for space exploration.⁹⁶ At the time it was perceived that the USSR successfully surpassed US developments in intercontinental ballistic missiles to level the playing field on weaponry, in order to compensate for the capabilities of American bombers based in Europe and Asia.⁹⁷ Alexander Geppert suggests that outer space became a major site in 'twentieth-century utopian thinking, where relations vis-à-vis science, technology and the future were positioned, played out and negotiated as nowhere else', highlighting the importance of space as a new frontier.⁹⁸ The Soviet advancements in rocketry aided their transition to launching probes into space before the Americans, solidifying their dominance of space early on in the Space Race.

In July 1955, the International Geophysical Year, President Eisenhower announced the US planned to launch a satellite which would orbit the Earth.⁹⁹ The USSR countered this proclamation, claiming they too would launch an artificial satellite in the near future.¹⁰⁰ This day came two years later, on 4 October 1957, in the shape of a polished aluminium sphere weighing 83kg and measuring just 57cm in diameter known as Sputnik 1. The success of Sputnik 'sent shockwaves around the world and

⁹⁴ Callum Russell, interviewed by Sarah Harper, 17 May 2021.

⁹⁵ Sean Topham, *Where's My Space Age? The Rise and Fall of Futuristic Design* (London: Prestel, 2003), p. 8.

⁹⁶ Royal Museums Greenwich. "What was the Space Race?", [rmg.co.uk, https://www.rmg.co.uk/stories/topics/space-race-timeline](https://www.rmg.co.uk/stories/topics/space-race-timeline), Accessed: 27 May 2021.

⁹⁷ Kojevnikov, "The Cultural Spaces of the Soviet Cosmos," p. 20.

⁹⁸ Alexander CT Geppert, *European Astrofuturism, Cosmic Provincialism: Historicizing the Space Age* (London: Palgrave Macmillan, 2012), p. 4.

⁹⁹ Deborah Cadbury, *Space Race: The Epic Battle Between America and the Soviet Union for Dominion of Space* (New York: Harper Collins, 2006), p. 175.

¹⁰⁰ Royal Museums Greenwich. "What was the Space Race?", [rmg.co.uk, https://www.rmg.co.uk/stories/topics/space-race-timeline](https://www.rmg.co.uk/stories/topics/space-race-timeline), Accessed: 27 May 2021.

signalled the arrival of the Space Age' and accelerated the race to space.¹⁰¹ The West's reaction to Sputnik combined amazement and fear as the capabilities of the Soviet Union had been considerably underestimated. For Britain, the launch confirmed pre-existing fears that the Soviets were technologically advanced and could dominate the Cold War.

The Soviet Government invested heavily in its space programme and a great deal in promoting their space achievements. This promotion, both internally and internationally, included space exhibitions, cosmonauts on tour, publishing books, and creating commemorative stamps and souvenirs.¹⁰² Sputnik's successful orbit confirmed the triumph of the Soviet space programme which became a 'tool for posturing on the international stage of the Cold War.'¹⁰³ The USSR boasted their technological lead by showcasing two Sputnik models at the Brussels Expo '58 in an effort to upstage the American exhibit.¹⁰⁴

The American space programme suffered further humiliation on 12 April 1961, when the Soviets successfully launched the first human being into orbit. Former foundryman and pilot, Yuri Alekseyevich Gagarin became the first man to orbit the Earth in the Vostok 1 spacecraft. Gagarin spent one hour and forty-eight minutes in space before landing in Saratov Oblast, west Russia.¹⁰⁵ The Central Committee of the Communist Party boasted: 'We Soviet people, who are building Communism, had the honour of being the first to penetrate space. We consider the victories won in space exploration to be achievements, not only for our people, but of mankind as a whole.'¹⁰⁶ The Party's commitment to spreading the benefits of Communism is obvious in this public statement and includes this achievement as a win for Communism in the Cold War battle of ideologies. Furthermore, as Alice Gorman and Beth O'Leary suggest: 'the astronauts themselves were very aware that they were warriors in yet another battle

¹⁰¹ Topham, *Where's My Space Age? The Rise and Fall of Futuristic Design*, p. 10.

¹⁰² James T Andrews and Asif A Siddiqi, *Into the Cosmos: Space Exploration and Soviet Culture* (Pittsburgh: University of Pittsburgh, 2011), p. 1.

¹⁰³ Andrews and Siddiqi, *Into the Cosmos: Space Exploration and Soviet Culture*, p. 4-5.

¹⁰⁴ Lewis Siegelbaum, "Sputnik Goes to Brussels: The Exhibition of a Soviet Technological Wonder," *Journal of Contemporary History* 47, no. 1 (2012): p. 120-21.

¹⁰⁵ Royal Museums Greenwich. "What was the Space Race?", [rmg.co.uk](https://www.rmg.co.uk), <https://www.rmg.co.uk/stories/topics/space-race-timeline>, Accessed: 27 May 2021.

¹⁰⁶ Soviet Man in Space, Foreign Language Publishing House, Moscow, 1961, p. 14.

of the Cold War', and subsequently were utilised by the Soviet state to promote the USSR both nationally and internationally.¹⁰⁷

Yuri Gagarin became a national hero and the embodiment of the triumph of the Soviet space programme. This new fame was in part due to the strict secrecy surrounding all other parts of the space programme, particularly the technology used and the identity of those building the space craft. This meant the only information the media could report on was the biography of cosmonauts leading to 'an intense personality cult focused on Gagarin.'¹⁰⁸ Gagarin's humble beginnings and rise to world-famous cosmonaut status was met with enthusiastic support across society and pride for the Soviet state for manifesting this great achievement.¹⁰⁹ His image spread across the Soviet Union and the world soon after his flight, as posters and portraits were dropped from planes over Moscow and other cities¹¹⁰ and he made personal appearances while on a world tour, including a visit to Britain in July 1961.¹¹¹

Although there were those who were concerned about Soviet advances in space, the British public were wholly amazed by Gagarin's achievements and enthusiastically welcomed him to Manchester.¹¹² Gagarin's working-class background resonated with fellow factory and foundry workers in Manchester as he 'delighted his audience at the union offices declaring that he was 'still a foundryman at heart'' and acknowledged the work of over 7000 scientists who contributed to his successful mission.¹¹³

¹⁰⁷ Alice Gorman and Beth O'Leary, "An Ideological Vacuum: The Cold War in Outer Space," in *A Fearsome Heritage: Diverse Legacies of the Cold War*, ed. John Schofield and Wayne Cocroft (London: Routledge, 2016), p. 73.

¹⁰⁸ Andrew Jenks, "Conquering Space: The Cult of Yuri Gagarin," in *Soviet and Post-Soviet Identities*, ed. Mark Bassin and Catriona Kelly (Cambridge: Cambridge University Press, 2012), p. 133.

¹⁰⁹ Jenks, "Conquering Space: The Cult of Yuri Gagarin," p. 134.

¹¹⁰ Jenks, "Conquering Space: The Cult of Yuri Gagarin," p. 133.

¹¹¹ The Sky at Night Magazine. "When Yuri Gagarin visited Great Britain", [skyatnightmagazine.com](https://www.skyatnightmagazine.com/space-missions/yuri-gagarin-visit-great-britain), <https://www.skyatnightmagazine.com/space-missions/yuri-gagarin-visit-great-britain>, Accessed: 1 June 2021.

¹¹² Callow, John. 'Yuri Gagarin in Manchester', Working Class Movement Library, [wcml.org.uk](https://www.wcml.org.uk), <https://www.wcml.org.uk/our-collections/international/yuri-gagarin-in-manchester>, Accessed: 1 June 2021.

¹¹³ Callow, John. 'Yuri Gagarin in Manchester'.



Fig. 5.1: 'Conquest of Space' record of Yuri Gagarin's space-orbit flight. T.1967.125 ©National Museums Scotland.

It is difficult to establish exactly how far Space Race material culture spread in Britain during the Cold War period. Newspapers and magazines regularly reported on space exploration, which allowed people to preserve clippings of Yuri Gagarin and images of spaceships. Similarly, companies utilised this new fascination with space to create new designs and products to entice those interested in space. For example, British tea company, Brooke Bond, produced collectable picture cards in a series titled 'The Race into Space' showing images and descriptions of Soviet and American space vehicles.¹¹⁴ Even records of Gagarin's speech in space and after landing were sold so people could own their own piece of history as well as a range of other souvenirs (Fig. 5.1).¹¹⁵ How the Space Race is represented through material culture differs between different nations, which influences how these objects were perceived in the past and their meanings in the present.

¹¹⁴ Brooke Bond Collectables. 'The Race into Space', brookebondcollectable.co.uk, <https://www.brookebondcollectables.co.uk/sets/theraceintospace.htm>, Accessed: 1 June 2021.

¹¹⁵ Topham, *Where's My Space Age? The Rise and Fall of Futuristic Design*, p. 31.

Soviet badges or *znachki* were very popular and a key branding tool for the USSR, contributing to the creation of a shared national identity.¹¹⁶ I will now consider the biography of Callum Russell's Space Race collection, beginning by exploring their origins and the popularity of *znachki* in the Soviet Bloc. Furthermore, I will explain Russell's motivations for collecting these objects and examine the significance he attaches to them.

Soviet *Znachki*

The popularity of badges soared in the early twentieth century when technological advances in America enabled the mass production and exportation of button badges.¹¹⁷ Badges were produced in connection with different themes, events and commemorations. The varied uses of badges mean that owners and wearers have their own motivations for purchasing and displaying them. Badge wearing usually aligns with the promotion of a particular cause or group to communicate information to others or could simply be worn as a fashion item.¹¹⁸ In Britain, throughout the Cold War, badges were a popular way to support causes such as the Campaign for Nuclear Disarmament and feminist and working-class movements. From these key movements from the 1960s onwards, badges became integral to the material culture of campaigning as much as traditional leaflets and posters for conveying messages.¹¹⁹ They were a way to encourage others to join their cause and to pressure the government for change. These causes are part of people's identities and are reflected in the badges they wore. Badges are an accessible way for people to participate in movements and are a 'medium for dissent from the status quo, for protest and radically confrontational statements.'¹²⁰

This use of badges for the purpose of change and protest is in direct contrast to the types of messages being conveyed in the USSR where badges or *znachki* are used

¹¹⁶ Susie Armitage, "The USSR's Hottest Collectibles are all Over eBay and Instagram", *atlasobscura.com*, <https://www.atlasobscura.com/articles/soviet-pin-collectors>, Accessed: 23 May 2021.

¹¹⁷ Peter Aspen. 'The Revolver: Been there, got the badge', *ft.com*, <https://www.ft.com/content/2167bf40-f660-11d8-a879-00000e2511c8>, Accessed: 23 May 2021.

¹¹⁸ Philip Attwood, *Badges* (London: British Museum Press, 2004), p. 12.

¹¹⁹ Philip Attwood, *Acquisitions of Badges (1978-1982)* (London: British Museum, 1985), p. v.

¹²⁰ Weekly Worker, 'Popular Expression and Human Values', *weeklyworker.co.uk*, <https://www.weeklyworker.co.uk/worker/541/popular-expression-and-human-values>, Accessed: 23 May 2021.

primarily in celebration, commemoration or in support of the Soviet state. Victoria Cherniysheva describes how Soviet *znachki* are divided into those on free sale and those issued for certain achievements accompanied by a certificate.¹²¹ The presence of *znachki* in the home, with their depictions of support for historic Soviet events like the 1917 revolution or for key figures such as Lenin, brought a change to public culture movements with national commemorations and accomplishments moved from mass events to a personal level.¹²² There was also an element of freedom for the Soviet producers of badges as some manufacturing was decentralised meaning factory managers could produce badges for any occasion or event and profit from this demand for consumer goods.¹²³ The death of leader Joseph Stalin in 1953 signalled the beginning of a ‘thaw’ in the USSR as years of strict leadership had taken its toll on the nation. Part of this thaw came as a result of Nikita Khrushchev’s appointment and his commitment to satisfying the growing public demand for consumer products.¹²⁴

In the Soviet Union there was an appetite for some kind of affordable and fair consumerism. Prior to the 1920s, personal collecting of stamps and other ephemera was popular until it was actively discouraged. However, the 1960s brought a relaxation of these rules and people were permitted to enjoy a small taste of consumerism by collecting, mainly stamps and *znachki*.¹²⁵ Stamps became an important tool for propaganda purposes, as the triumphant imagery of Sputnik and space on more than 160 space related stamps would be viewed not only by the letters recipient but also everyone who handles the letter on its journey.¹²⁶

The newfound obsession and amazement for the Space Race in the late 1950s gave metal engraving factories custom for decades. Cathleen Lewis suggests as the material culture of space flight was produced in a less restrictive Soviet era ‘the resulting artefacts displayed less of the Stalinist socialist realist norms than other forms

¹²¹ Victoria Cherniysheva, ‘How and What Kind of Badges Were Collected in the Soviet Union’, rg.ru, <https://rg.ru/2014/08/30/znachki-site.html>, Accessed: 20 January 2022.

¹²² Lewis, "From the Kitchen into Orbit: The Convergence of Human Spaceflight and Krushchev's Nascent Consumerism," p. 239.

¹²³ Lewis, "From the Kitchen into Orbit: The Convergence of Human Spaceflight and Krushchev's Nascent Consumerism," p. 228.

¹²⁴ Yulia Karpova, *Comradely Objects: Design and Material Culture in Soviet Russia, 1960s–80s* (Manchester: Manchester University Press, 2020), p. 16.

¹²⁵ Lewis, "From the Kitchen into Orbit: The Convergence of Human Spaceflight and Krushchev's Nascent Consumerism," p. 217.

¹²⁶ Umberto Cavallaro, *The Race to the Moon Chronicled in Stamps, Postcards, and Postmarks: A Story of Puffery Vs. the Pragmatic* (Chichester: Springer, 2018), p. 12.

of culture did and thus took on the appearance of the neo constructivist style that was gaining acceptance in the Soviet Union in the late 1950s and early 1960s.¹²⁷ The freedom to collect and disseminate pins offered an 'illusion of affluence and progress' and acted as a leisure activity and distraction for the Soviet people from difficult everyday lives.¹²⁸ It is unclear how far owners of these space badges bought them to wear as badges or to add to their collections.

Collecting badges became so popular there were concerns for the amounts of material used to produce them, with the Soviet newspaper *Pravda* describing the production of badges as 'growing catastrophically.'¹²⁹ This negative description highlights that the demand for badges had an impact on other industries, and this craze verged on being out of control. New developments in manufacturing technology and new materials such as aluminium, tin and plastics brought badges to the masses through cheaper mass production processes.¹³⁰ Special moulds were made to quickly stamp metal sheets into shapes ready to be decorated with emblems, images, and inscriptions in a range of enamel colouring.¹³¹ Enamelling can be processed in different ways, either using a vitreous method or modern cold enamelling. For vitreous enamelling, crushed glass is mixed with water and a colour pigment and scraped over a blank badge then heated to 800°C until the enamel fuses to the metal.¹³² Alternatively, cold enamelling uses coloured epoxy to fill the prepared metal badge and is heated in the oven at 100°C for one hour making the process much faster.¹³³ Each of Russell's badges has been through this intricate process, carefully designed and coloured to make them attractive to prospective collectors.

Once carefully decorated, the pins and fittings are attached to the reverse, using a single pin like stick pins or lapel pins, or a twin fitting like a safety-pin or brooch pin

¹²⁷ Lewis, "From the Kitchen into Orbit: The Convergence of Human Spaceflight and Krushchev's Nascent Consumerism," p. 215.

¹²⁸ Lewis, "From the Kitchen into Orbit: The Convergence of Human Spaceflight and Krushchev's Nascent Consumerism," p. 214.

¹²⁹ Quoted in Hendrik Smith. 'Pin hobby, Soviet Fad is Criticised' in *New York Times*, 22 September 1974. Available online: <https://www.nytimes.com/1974/09/22/archives/pin-hobby-soviet-fad-is-criticized-millions-to-be-produced-badges.html>, Accessed: 23 May 2021.

¹³⁰ Alexey Sidelnikov. 'What is Sovfalera? How do signs differ from icons?', *Sammlung Magazine*, [sammlung.ru](https://sammlung.ru/?p=4112), <https://sammlung.ru/?p=4112>, Accessed: 28 May 2021.

¹³¹ Alexey Sidelnikov. 'What is Sovfalera? How do signs differ from icons?'

¹³² Frank R Setchfield, *The Official Badge Collector's Guide: From the 1890s to the 1980s* (London: Longman, 1986), p. 12.

¹³³ Setchfield, *The Official Badge Collector's Guide: From the 1890s to the 1980s*, p. 12.

attachment.¹³⁴ Other details on the reverse of most Soviet badges include a maker's mark denoting the place the badge was produced and the price marked with 'K' for Kopeks.¹³⁵ From 1967 onwards, some pins were stamped with the official Mark of Quality from the Soviet authorities. This mark would be granted to companies after product examination from a committee, with the aim to encourage manufacturers to produce higher quality goods for Soviet consumers.¹³⁶ However, as the USSR declined, the Mark of Quality quickly devalued as these marks were added to thousands of products with varying degrees of quality.¹³⁷

Badge collecting remained popular after the end of the Soviet Union and gained new hobbyists as borders and trading relaxed allowing *znachki* to be shared around the world. The attractive and intricate designs of the badges drew people to collecting them and these designs are important in conveying symbolic messages from the government of the Soviet Union.

Design and Symbolism

Design and symbolism were one of the main motivators for Russell to purchase these badges and objects. The badges are striking, colourful and carefully designed to ensure a strong Soviet message is portrayed. Soviet professional designers were not public figures, nor were they given full credit for their work. Rather, these people were known as 'artistic-engineers' in the absence of the terms 'design' or 'designer', which did not exist in the Soviet Union until the 1980s.¹³⁸ This means that tracing the designers of pieces like Russell's badges is difficult, if not impossible. There are several common features of these badges including symbols and imagery which 'spoke in new and powerful languages, and as stories as they cradle the anticipations and hopes of Soviet citizens.'¹³⁹ Unity symbols such as the red star and hammer and

¹³⁴ Setchfield, *The Official Badge Collector's Guide: From the 1890s to the 1980s*, p. 12. .

¹³⁵ Lewis, "From the Kitchen into Orbit: The Convergence of Human Spaceflight and Krushchev's Nascent Consumerism," p. 234.

¹³⁶ Bela Shayevich, *Made in Russia: Unsung Icons of Soviet Design* (New York: Rizzoli International Publications, 2011), p. 148.

¹³⁷ Shayevich, *Made in Russia: Unsung Icons of Soviet Design*, p. 148.

¹³⁸ Alexandra Sankova, "Soviet Design: Preserving the History," in *Designed in the U.S.S.R 1950-1989: From the Collection of the Moscow Design Museum*, ed. Moskovskii Muzei Dizaina (London: Phaidon Press Limited, 2018), p. 8.

¹³⁹ Andrews and Siddiqi, *Into the Cosmos: Space Exploration and Soviet Culture*, p. 1-2.

sickle were used on consumer goods like the Space Race badges to emphasise the relationship between the state and the successes of the space programme.¹⁴⁰



Fig. 5.2: Badge commemorating the Sputnik launch on 4 October 1957. The reverse shows the design has been stamped onto the metal, then fitted with a clasp.
K.2018.50 ©National Museums Scotland.

All the badges are small, approximately 2-3 cm in size and light weight, especially those made of thinner material. They vary in shape from simple circles and rectangles to more complicated pentagon shapes and bespoke designs. The variety of shapes and designs seen in this small collection is only a glimpse into the thousands of Space Race badges produced in an assortment of designs. Sputnik and Soviet pride feature most strongly in Russell's collection. Some examples include a rectangular badge in blue and white enamel with a stylised globe and a ring around it with a circle dot representing Sputnik orbiting the Earth (Fig. 5.2). The connection to the USSR is marked with CCCP, the Russian initialism for USSR in Cyrillic and the date of the launch '4 X 1957' at the bottom. The badge has clearly been stamped from the back to put the design on the front to allow the details to stand out and so the enamel colours can adhere to the areas in the background. There is no makers mark or price on this early badge and the design is fairly simple but clear in message. Unlike some of the

¹⁴⁰ Platoff, "Soiuz and Symbolic Union: Representations of Unity in Soviet Symbolism," p. 60.

other badges, the colour scheme of white and blue deviates from the red used to represent Communism.



Fig. 5.3: Badge commemorating the Sputnik launch on 4 October 1957, the reverse shows the price and markers mark has been stamped onto the metal. K.2018.52 © National Museums Scotland.

Another Sputnik-themed badge in the collection shows a more accurate Sputnik shaped image in the centre of the badge, with the message circling the image reading: 'The First Artificial Satellite of the Earth, History of Cosmonautics' (Fig. 5.3). The design of this badge is very striking, the five-sided shape of the badge itself sets it apart from the others and the central design within a circle gives it some depth. The simplicity of Sputnik's design is easily depicted even on this small badge and is instantly recognisable. The imagery of space is emphasised with a dark blue background and 5 stars surrounding Sputnik to represent it floating in space, which is set apart from a red background. The reverse is stamped with a price of 20 Kopeks and the makers mark of two Ms mirroring each other, representing the Moscow Mint. As time progressed and innovation in design, materials and colours advanced, the range and diversity of pins grew as rules on production eased and led to some relaxation in Soviet society.¹⁴¹

¹⁴¹ Lewis, "From the Kitchen into Orbit: The Convergence of Human Spaceflight and Krushchev's Nascent Consumerism," p. 230.

The simple design of Sputnik inspired new creations and soon ‘the market was flooded with Sputnik-themed everything: commemorative postage stamps, key chains, teacup holders, paperweights, globes with Sputnik replicas attached to them on thin metal arms.’¹⁴² Russell’s collection contains three cigarette boxes and several desk ornaments including a bust of Yuri Gagarin and a globe with Sputnik attached as described. The gold coloured cigarette tin depicts a large-scale Sputnik surrounded by stars as if floating in space, with the date of launch and the label ‘Soviet Earth Satellite’ written at the bottom (Fig. 5.4). The wear and marks on this tin suggest it has been well used for its intended purpose of carrying cigarettes. This differs from some of the badges which do not have much sign of wear and perhaps were bought for the purpose of collecting and preserving rather than wearing and displaying.



Fig. 5.4 and Fig. 5.5: Cigarette cases commemorating the launch of Sputnik.
K.2018.34 and K.2018.32 ©National Museums Scotland.

Similarly, there are two other cigarette tins in the collection which also commemorate the first Vostok mission. Both of the cigarette tins have the same design, but one is without the coloured enamelling. The imagery on these tins is very attractive and imaginative (Fig. 5.5). They show a globe in the right-hand corner pivoted at an angle showing the USSR in clear focus below a red rocket shooting upwards with a trail spelling out ‘12-IV-61 <ВОСТОК> СССР’ surrounded by red and white stars; ВОСТОК meaning Vostok, the first space flight. There are clear and not so subtle messages referring to the Soviet state. On this small tin the imagery projects feelings

¹⁴² Shayevich, *Made in Russia: Unsung Icons of Soviet Design*, p. 16.

of national pride and the reference to 'СССР' (USSR) enforces the idea that the success of the space programme was a result of backing and support from the state. The state also had influence over the production of *znachki* by monitoring what factories were producing and influencing their designs. These factories were restricted to producing designs based on the limited knowledge they had of the space programme. This meant that the badges showing spacecrafts were usually inaccurate or were heavily stylised. There are clear examples of this shown even by the red rocket above which is a more generic image of a spacecraft but also as seen in Figures 5.6 and 5.7 which both commemorate Vostok 1 which show very different images of the same spacecraft.



Fig. 5.6 and 5.7: Badges related to Yuri Gagarin's Vostok Mission to orbit the Earth on 12 April 1961 showing depictions of his spacecraft. K.2018.44 and K.2018.56. ©National Museums Scotland.

Cathleen Lewis argues that despite the occasional inaccurate images of the spacecraft on officially produced badges, these still worked as Soviet propaganda for proclaiming their mastery of spaceflight.¹⁴³ This emphasises that it did not really matter if the images were accurate as it was more important to confirm to citizens that the USSR were leading the race to space and that the volume of *znachki* produced to commemorate the launches were key in strengthening Soviet agendas. The depictions of the Vostok spacecraft, which carried Yuri Gagarin into orbit, are different to each other in Figures 5.6 and 5.7 and demonstrates artistic interpretation is favoured over

¹⁴³ Lewis, "From the Kitchen into Orbit: The Convergence of Human Spaceflight and Krushchev's Nascent Consumerism," p. 227.

accuracy. Furthermore, without access to space programme hardware, *znachki* offered Soviet citizens a glimpse into the excitement of the Space Race.¹⁴⁴

The badge in Figure 5.7 is part of a series of pins called 'The First Soviet Spacecraft' which commemorate other firsts such as Mars-1 in 1962 and Soyuz-1 in 1967.¹⁴⁵ The reverse of this light aluminium badge is stamped with a price of 20 Kopeks and stamped with a swan in a circle representing a Moscow plant of artistic metal engraving.¹⁴⁶ Nine out of the fifteen badges in the NMS collections are related to the Vostok mission and Yuri Gagarin, perhaps showing Russell's particular interest in this mission and the aim to gather badges which show the most Soviet pride.



Fig. 5.8, 5.9 and 5.10: Badges related to Yuri Gagarin's Vostok Mission to orbit the Earth on 12 April 1961. K.2018.45, K.2018.53 and K.2018.54. ©National Museums Scotland.

Soviet pride is a noticeable theme when analysing Russell's collection of badges. Figure 5.8 demonstrates the combination of commemorating the achievement of sending a rocket into space and the symbolism of the Soviet Union. The gold and red badge depicts a stylised hammer and sickle, not in the usual configuration of them intertwined but with the hammer to the right, balancing the letters CCCP, and with the curved projectile like silhouette of the sickle being used to launch a small triangle shape to represent a rocket flying into space. This design solidifies the pride of the Soviet nation with recognisable symbols yet again used in a way to demonstrate the

¹⁴⁴ Lewis, "From the Kitchen into Orbit: The Convergence of Human Spaceflight and Krushchev's Nascent Consumerism," p. 227.

¹⁴⁵ Sovietznak, 'Spaceship- "Vostok-1". 1961. USSR. Series of signs "The first Soviet spacecraft"', sovietznak.ru, <https://www.sovietznak.ru/badge/27308>, Accessed: 4 June 2021.

¹⁴⁶ Sovietznak, 'Spaceship- "Vostok-1". 1961. USSR. Series of signs "The first Soviet spacecraft"', sovietznak.ru, <https://www.sovietznak.ru/badge/27308>, Accessed: 4 June 2021.

inextricable link between the state and the space programme. It also makes clear reference to Gagarin's mission with the date and 'Boctok', the Cyrillic spelling of Vostok, the name of the mission written at the bottom in red.

Figure 5.9 also captures similar elements such as the date and the hammer and sickle on a red background and additionally has Gagarin's name in Cyrillic lettering. The shape of this pin is more elaborate than the others which are regular circle, rectangle or pentagon shapes. Gagarin's visage in the centre in gold and black on a white background is striking, with his helmet marked with CCCP to confirm he is a product of the Soviet Union's space programme. The intricate detail on his helmet shows the inner helmet cap, perhaps to emphasise this is not an ordinary helmet but one key for survival in space. Gagarin's expression is stern and straight-faced which portrays him as a fearless and dedicated citizen of the USSR who was willing to sacrifice his life for the space mission. This military like status of honour and importance is also highlighted by the laurel leaves on both these badges, a symbol of victory and peace dating back to ancient Greece.¹⁴⁷ The pentagon shape with Gagarin in profile makes this badge visually striking and the pose in profile is similar to depictions of Lenin or other Soviet leaders which is probably a deliberate design feature (Fig. 5.10).

The designs and symbolism of these badges emulate the masculinity and courage of Gagarin in being the face of the Space Race and the Soviet Union's national pride. As representatives of the Space Race these badges are clearly a small part of Soviet propaganda to prove to citizens that the USSR was capable of rivalling America and other Western nations. The Space Race theme of the *znachki* directly connects them to the Cold War. However, these connections were not at the forefront of Russell's mind when curating his collection over a number of years.

Space Race Collection

Before speaking to Russell, I was aware there was an informal understanding within the National Museums Scotland that he had gathered his collection from a trip to Russia in the mid-1990s. I was keen to talk to him about his time in Russia, the atmosphere at that time and learn more about the origins of the badges and ornaments

¹⁴⁷ Ancient-Symbols, 'Laurel Wreath, Symbol of Victory, Honour and Peace', [ancient-symbols.com](https://www.ancient-symbols.com/symbols-directory/laurel-wreath.html), <https://www.ancient-symbols.com/symbols-directory/laurel-wreath.html>, Accessed: 7 June 2021.

and the circumstances around buying these as souvenirs. At the beginning of our conversation, Russell confirmed he had not actually been to Russia but had instead purchased all his collection online. Initially I was disappointed to learn this: buying these items in Russia would have added a different form of authenticity and connection to a place steeped in Cold War history. I had imagined he had been enticed to buy this selection of badges by an enthusiastic Russian while on a trip to the East. This would have added to the biography of the badges and connected them directly to Russia.

Nonetheless, the badges still gained new layers of authenticity by being purchased online. As authenticity is gained through interacting with different people and their individual views of the objects, these badges were still subject to different actors marketing and attributing them with monetary, symbolic, and social values. Arjun Appadurai's work examining the 'commodity situation' of objects highlights how the values assigned to objects fluctuate when objects are exchanged.¹⁴⁸ For example, Appadurai encourages researchers to explore what value the object has in a particular society and to look for the points of intersection between commodification and decommodification.¹⁴⁹ This suggests that the exchange process is a key part in the biography of an object as this is a point where new layers of authenticity and value are added.

In the case of the Soviet and Space Race souvenirs, the influence of the physical environment is absent as this trade occurred virtually meaning the online customer is not actively being pursued by the seller and often does not have the opportunity to barter for a reduced price. For Russell this process involved carefully examining websites for items which matched his tastes and judging whether a price seemed reasonable.¹⁵⁰

The act of collecting is driven by a process of actively acquiring things, sometimes removed from their ordinary uses, to become part of a curated collection.¹⁵¹ As an amateur collector, Russell can set his own boundaries for what he would like to add to his collection and what items qualify for inclusion. Russell mentions high quality as one of his main reasons for collecting Space Race ephemera. He emphasises: 'it was

¹⁴⁸ Arjun Appadurai, *The Social Life of Things: Commodities in Cultural Perspective* (Cambridge: Cambridge University Press, 1988).

¹⁴⁹ Appadurai, *The Social Life of Things: Commodities in Cultural Perspective*, p. 13.

¹⁵⁰ Callum Russell, interviewed by Sarah Harper, 17 May 2021.

¹⁵¹ Russell W Belk, *Collecting in a Consumer Society* (London: Routledge, 2013), p. 67.

a question of wanting things to be in really good condition, there's no point buying stuff that is not in good condition. There was nothing urgent about it but over the years, I kept my eyes open for nice things.¹⁵² For Russell, collecting these badges and Space Race items was a leisurely hobby, his intentions were not to buy or collect everything related to the Space Race he was able to find. Instead, he wanted to satisfy his own tastes and his standard of quality as any other collector would. In my interview with him, he clarified that what he meant by 'quality' was not necessarily the quality of material as they were made from cheap tin or plastic. Rather, he meant the quality of the messages they portrayed and how well they highlighted the 'immense pride which the Soviet Union had in its achievements.'¹⁵³ Russell Belk highlights the historically male bias among adult and child collectors, where there is a tendency for men to restart collecting in later life in comparison to women.¹⁵⁴ This is relevant to Russell having grown his interest in the Space Race in his youth. Due to his father's work for the Mersey Docks and Harbour Board, Russell grew up with maritime, scientific, and geographical interests encouraged by his family. As a child he gained an interest in Space exploration and collected stamps celebrating space achievements. For him, stamp collecting 'was of course the way youngsters in those days could afford to collect 'space items.'¹⁵⁵ This comment is a reflection on his position as an adult who can afford to collect more substantial 'Space items' now to satisfy his childhood desire. The unusual aesthetics and designs of the badges played a role in Russell's motivations to purchase them, commenting: 'They always bring a smile to your face when you see them just because they are so bizarre, nobody would dream of producing anything that looked like this nowadays but 60 years ago they were like cutting edge and very tempting and people in Russia would buy them.'¹⁵⁶ His motivations to purchase Soviet items were not based on his political leanings but fascination with the amount of pride the Soviets had in their achievements and from his interest in the Space Race from a young age. He quipped: 'I think as a 7-year-old I don't think I was too conscious of the geo-political implications!' emphasising his disassociation with Cold War connections.¹⁵⁷ Russell refers to his specific age to

¹⁵² Callum Russell, interviewed by Sarah Harper, 17 May 2021.

¹⁵³ Callum Russell, interviewed by Sarah Harper, 17 May 2021.

¹⁵⁴ Belk, *Collecting in a Consumer Society*, p. 97.

¹⁵⁵ Email correspondence between Sarah Harper and Callum Russell, 28 October 2022.

¹⁵⁶ Callum Russell, interviewed by Sarah Harper, 17 May 2021.

¹⁵⁷ Callum Russell, interviewed by Sarah Harper, 17 May 2021.

position the stage of his life with the timing of the Sputnik launch and to suggest that as a naïve child he would not be fully aware of the impact of the Space Race on the Cold War. However, he did reflect on the Cold War impinging on his teenage consciousness, particularly during the Cuban Missile Crisis and the 'prevailing nuclear menace.'¹⁵⁸ His memories of military escalation and nuclear weapons may be why he disassociates his Space Race collection with the Cold War as he did not see space exploration as a threat.

Souvenirs like those from Russell's collection do not only have use-value and exchange-value depending on what they are or how they are purchased but also have significant sign-value as the owner imbues their own meanings onto them.¹⁵⁹ In this way, Russell has correlated these objects with his childhood fascinations with space and has purchased these souvenirs in absence of any related material culture from his childhood. Although souvenirs are memory evoking, as Susan Stewart describes: '[souvenirs] will not function without the supplementary narrative discourse that both attaches it to its origins and creates a myth with regard to those origins', emphasising that as time progresses these narratives may become weaker as memories fade and become part of imagined versions of the original memories.¹⁶⁰ However in Russell's case, he has attached his own memories to the souvenirs rather than them representing the experience of buying them or holidaying in the Soviet Union. To Russell, these objects were first and foremost Space Race objects as he reluctantly acknowledges: 'I suppose in the wider political sense the pride in the achievements had to do with the Cold War, that was Khrushchev and so on wanting to bang the drum.'¹⁶¹ Russell's and the responses from some of the other interviewees in this research emphasise this feeling of disconnection or disassociation to the Cold War as a conflict, as Mary Kaldor emphasises 'it is often said that we in Europe have enjoyed 'peace' during the last forty years', hence participants did not feel connected to the conflict.¹⁶²

¹⁵⁸ Email correspondence between Sarah Harper and Callum Russell, 28 October 2022.

¹⁵⁹ Pavlos Paraskevaidis and Konstantinos Andriotis, "Values of Souvenirs as Commodities," *Tourism Management* 48 (2015): p. 3.

¹⁶⁰ Susan Stewart, *On Longing: Narratives of the Miniature, the Gigantic, the Souvenir, the Collection* (Durham: Duke University Press, 2012), p. 136.

¹⁶¹ Callum Russell, interviewed by Sarah Harper, 17 May 2021.

¹⁶² Kaldor, *The Imaginary War: Understanding the East-West Conflict*, p. 4.

These connections to the Cold War may not seem obvious to life-long collectors as they have continued their passions throughout this unstable period until the present day. There are still many collectors throughout the former Soviet Union and now in the West who have taken up the hobby and became falerists or Sovfalera who collect mainly Soviet era badges and awards.¹⁶³ The Russian website *Collection Magazine* described the intensification of interest in collecting Soviet badges: ‘the number of people interested in antiques and vintage Soviet items is growing year to year, and there is still no consensus on the reason for this.’¹⁶⁴ Modern collectors continue to buy items from street vendors and shops, but most trade, share information and tips online. Online sites such as eBay, Etsy and specialist websites offer an easily accessible centralised place to buy *znachki* and interact with other collectors.

Russell purchased items from various online websites and auction sites such as eBay, commenting: ‘it was really only with the advent of the internet that you realised that some of these things existed and what gorgeous items people had stored away in cupboards in the depths of the Soviet Union.’¹⁶⁵ This comment demonstrates Russell’s unawareness of the popularity of collecting *znachki* until the internet opened up this world to him as he assumed that *znachki* sellers had only in recent times retrieved their old collections to put them up for sale. This is a somewhat romanticised view as in reality collectors in Russia and internationally continued to gather *znachki* after the end of the Soviet Union.¹⁶⁶ Russell implies that these kinds of Soviet objects did not make their way to Britain during the Cold War, other than from tourists visiting the USSR and bringing souvenirs back with them. Furthermore, he has clearly imagined the previous lives of his objects as if they have been carefully stored in homes in former Soviet states just waiting to be appreciated once again as they would have been during the height of the Space Race. He did not really know the true origins of his badges as his communication with the sellers were brief as ‘it was just [...] you click the button, and the thing arrives 10 days later or so.’¹⁶⁷ This swift virtual action to purchase the

¹⁶³ Alexey Sidelnikov, ‘What is Sovfalera? How do Signs differ from Icons?’, [sammlung.ru](https://sammlung.ru/?p=4112), <https://sammlung.ru/?p=4112>, Accessed 28 May 2021.

¹⁶⁴ Alexey Sidelnikov, ‘What is Sovfalera? How do Signs differ from Icons?’, [sammlung.ru](https://sammlung.ru/?p=4112), <https://sammlung.ru/?p=4112>, Accessed 28 May 2021.

¹⁶⁵ Callum Russell interview, (17 May 2021).

¹⁶⁶ Susie Armitage, ‘The USSR’s Hottest Collectibles are all Over eBay and Instagram’, [atlasobscura.com](https://www.atlasobscura.com/articles/soviet-pin-collectors), <https://www.atlasobscura.com/articles/soviet-pin-collectors>, Accessed: 23 May 2021.

¹⁶⁷ Callum Russell, interviewed by Sarah Harper, 17 May 2021.

badges contrasts with the ways they would have originally been bought and sold in the Soviet Union.

Regardless of any Cold War connection, Space Race *znachki* remains popular and highly sought after online. People currently living in former Soviet nations recognise the online demand for souvenirs and utilise their prime positioning and ability to sell items to those living abroad, particularly to Americans.¹⁶⁸ One seller based in Tallinn, sources souvenirs from local thrift stores, friends and markets and sells her finds with much higher prices online to those abroad and nostalgic for their former Soviet lives.¹⁶⁹ Russell was in some ways vulnerable to these inflated prices online.

If Russell had bought the badges as souvenirs in Russia, they would have to some extent legitimised their authenticity as there would have been a stronger connection to the various people who had owned the *znachki* before and their journey to being owned by Russell. By purchasing items online, there is more of a possibility that they could be replicas as there is no process of verification. However, authenticity is determined by various actors each with their own views, meaning that even if they were replicas Russell would potentially view them with the same fondness, as replicas can hold as much meaning.¹⁷⁰

Learning about his motivations for collecting the souvenirs alludes to the meanings he has already attached to these objects and shows the values they hold for him. This relates to Russell Belk's point that intentionally or unintentionally objects become part of ourselves.¹⁷¹ Cold War meanings or connotations are absent in Russell's views of what narratives these objects hold. However, this does not mean there is no Cold War attachment. The design and imagery these badges display is clearly recognisable as Cold War era and project Soviet superiority in various elements of their design.

Fellow *znachki* collectors online shared Russell's disassociation with the Cold War. The *Falerist Forum* is a Russian website which offers a platform for collectors to ask questions, share recent finds and discuss historical events depicted on their badges. I posed several questions in the forum, but I mainly wanted to find out if Russian

¹⁶⁸ Peter Spinella, 'Nostalgia and Intrigue Fuel Booming Trade in Soviet Souvenirs', *theguardian.com*, <https://www.theguardian.com/world/2015/apr/01/soviet-souvenirs-etsy-ebay>, Accessed: 13 June 2021.

¹⁶⁹ Peter Spinella, 'Nostalgia and Intrigue'.

¹⁷⁰ Foster and Jones, "The Untold Heritage Value and Significance of Replicas."

¹⁷¹ Russell W Belk, "Possessions and the Extended Self," *Journal of Consumer Research* 15, no. 2 (1988): p. 139.

collectors saw Space Race related *znachki* as representative of the Cold War period. One response said: 'the badges demonstrate the achievements of the Soviet Union in the peaceful exploration of outer space. They have nothing to do with the Cold War.'¹⁷² This objection to the connection between the Space Race and the Cold War is telling as it shows that opinions differ on what events are connected and which are not. Their comment also emphasises the 'peaceful' exploration of space and ignores the Soviet space programme's origins in ballistic missile development.

The online forum answers allude to the continued pride in Russian achievements in space and the sustained fascination with space themed badges. Popular online magazines and newspapers, mainly Russian, document the history of *znachki* collecting and announce when new designs are released.¹⁷³ The popularity of *znachki* commemorating the Space Race has to some extent continued as for special occasions such as the sixtieth anniversary of Gagarin's Vostok mission new badges have been commissioned.¹⁷⁴ This badge contains very similar elements to those produced at the time of Gagarin's flight, including the laurel leaves, space imagery such as the globe, stars on a blue background and a detailed depiction of the spacecraft, as well as Gagarin's visage with CCCP helmet.¹⁷⁵

As well as specialist online forums and magazines, social media such as Facebook and Instagram have become key places for falerists to share their collections and offer tips and advice to fellow collectors. Digital heritage has become increasingly popular in recent years and has developed new tools to share and preserve heritage. This means that amateur collectors without associations with heritage groups or museums can share their knowledge and passions with the public and with institutions.¹⁷⁶ With increased connectivity, co-production and online participation, new communities have formed along with repositories of information including memories, stories and shared

¹⁷² Response from Alex950 in the Falerist Forum, <https://forum.faleristika.info/search.php?keywords=cold+war&t=4740&sf=msgonly>, Accessed: 24 June 2021.

¹⁷³ Lewis, "From the Kitchen into Orbit: The Convergence of Human Spaceflight and Krushchev's Nascent Consumerism," p. 230.

¹⁷⁴ Sammlung Magazine, '60 Years of Gagarin's Flight Recording', [sammlung.ru](https://sammlung.ru/?p=33906), <https://sammlung.ru/?p=33906>, Accessed: 28 May 2021.

¹⁷⁵ Sammlung Magazine, '60 Years of Gagarin's Flight Recording', [sammlung.ru](https://sammlung.ru/?p=33906), <https://sammlung.ru/?p=33906>, Accessed: 28 May 2021.

¹⁷⁶ Henriette Roued-Cunliffe, "Collection Building Amongst Heritage Amateurs," *Collection Building* 36, No. 3 (2017): p. 111.

experiences.¹⁷⁷ These are often self-monitored pages with no formal guidance to follow meaning information shared could be inaccurate or could lead to disputes.¹⁷⁸ However, it does offer amateur collectors a platform to informally share their collections and connect with like-minded individuals.

Soviet Souvenirs

Although the original intention for *znachki* was to be given as a reward for significant achievements, this changed over time as *znachki* souvenirs began to be used to commemorate national celebrations and were available to everyone.¹⁷⁹ The word souvenir means 'to remember' and as Pavlos Paraskevaidis and Andriotis Konstantinos suggest: 'in this way, souvenirs as material objects link people with places and memories.'¹⁸⁰ Typically, souvenirs are purchased while on holidays or while visiting new places and could be small items like key chains, badges, magnets or large items like art works, ceramics or even furniture. Although souvenirs are bought and can be gifted, their value is of most importance to the owner who has invested a narrative in them and uses these objects to represent whole experiences, cultures, and periods of time.¹⁸¹

Souvenirs act as the material evidence of lived experiences or personal memories and are surrounded by a subjective narrative of particular recollections associated with them.¹⁸² Accepting souvenirs as gifts and the growing amount bought online suggests that souvenirs are not always guaranteed to be connected to a meaningful tourist experience. Instead, these gifts are valued for other reasons such as collecting for a hobby, aesthetic purposes or as an alternative to the real travel experience.¹⁸³ Noga Collins-Kreiner and Yael Zins argue that the meaning of souvenir should be expanded to include any objects that serve 'as a reminder of a journey' even if this object was

¹⁷⁷ Hannah Lewi et al., "Some Implications of Digital Social Media for Heritage Practice" (paper presented at the Australia ICOMOS Conference, 2015), p. 1.

¹⁷⁸ Lewi et al., "Some Implications of Digital Social Media for Heritage Practice," p. 14.

¹⁷⁹ Cathleen S Lewis, "The Birth of the Soviet Space Museums: Creating the Earthbound Experience of Space Flight During the Golden Years of the Soviet Space Programme, 1957-68," in *Showcasing Space*, ed. Martin Collins (London: Science Museum, 2005), p. 144.

¹⁸⁰ Paraskevaidis and Andriotis, "Values of Souvenirs as Commodities," p. 1-2.

¹⁸¹ Penny Grennan, "Your Trash, My Treasure: An Assessment of the Value of Souvenirs" (PhD Northumbria University, 2015), p. 33.

¹⁸² Grennan, "Your Trash, My Treasure: An Assessment of the Value of Souvenirs," p. 27.

¹⁸³ Swanson and Timothy, "Souvenirs: Icons of Meaning, Commercialization and Commoditization," p. 497.

not intended to or was not acquired during travel.¹⁸⁴ Despite not being purchased while travelling, objects can still acquire sentimental value during the acquisition process making them become souvenirs.¹⁸⁵ Russell's collection is an example of this as the meanings and sentiments he attaches to the souvenirs are more in connection to his childhood memories of the Space Race rather than as representing a trip to the Soviet Union. The digital process of buying his Space Race ephemera is also key in the biography of the badges. Russell's tastes and preferences were influential when searching through Space Race ephemera available to buy online. He carefully assessed which items he liked, based on his interests in space exploration and his eye for aesthetically pleasing designs.

Souvenirs such as these raise some questions about the authenticity of these objects. The Soviet *znachki* Space Race badges were created specifically to commemorate Soviet achievements for citizens who were there at the time to experience it. Although Russell did not collect his souvenirs first-hand in Russia, he considered it his duty to ensure they were preserved in a museum, so that they continue to be looked after as they had been for fifty or sixty years before he collected them.¹⁸⁶ Tourists from Britain regularly travelled to the USSR during the Cold War era and returned with similar souvenirs. Soviet citizens strived to acquire unique, rare, and foreign badges to add to their collections. One source of these rare badges were the international exhibitions held to showcase technologies and developments from other countries. Konstantin Avramov describes the free souvenirs as the most enticing part of the 1976 Moscow exhibition 'USA: 200 Years' where visitors would audibly share their disappointment if the souvenirs ran out.¹⁸⁷

Delegations to the USSR from Western nations were usually made up of those with Communist sympathies or part of educational or friendship trips, who helped to promote the image of the Soviet Union through tourism, travel writing and public lectures.¹⁸⁸ In Scotland, the Scotland-USSR Friendship Society, established in 1945,

¹⁸⁴ Noga Collins-Kreiner and Yael Zins, "Tourists and Souvenirs: Changes Through Time, Space and Meaning," *Journal of Heritage Tourism* 6, no. 1 (2011): p. 26.

¹⁸⁵ Collins-Kreiner and Zins, "Tourists and Souvenirs: Changes Through Time, Space and Meaning," p. 18.

¹⁸⁶ Callum Russell, interviewed by Sarah Harper, 17 May 2021.

¹⁸⁷ Konstantin Avramov, "Soviet America: Popular Responses to the United States in Post-World War Two Soviet Union" (PhD thesis University of Kansas, 2012), p. 250.

¹⁸⁸ Sune Bechmann Pedersen, "Eastbound Tourism in the Cold War: The History of the Swedish Communist Travel Agency Folk turist," *Journal of Tourism History* 10, no. 2 (2018): p. 131-32.

encouraged travel and exchange between the two nations to bring people with mutual interests together and to improve international cooperation.¹⁸⁹ The Society hosted and advertised special exchange events such as the *Edinburgh Conversations* organised by Professor John Erickson to promote professional exchanges between diplomats and academics from both Scotland and Russia.¹⁹⁰ The Society established Sovscot Tours Limited to act as travel agent between Britain and the Soviet Bloc, organising travel arrangements and tour programmes with an average of 2300 tourists travelling every year.¹⁹¹ There were tours even arranged to unite the two nations over a shared appreciation of the works of Robert Burns (Fig. 5.11). The title 'To Russia with Burns' is a reference in jest to the 1963 James Bond film *From Russia with Love*. Souvenirs, especially pins and badges, formed a key part of these tourist visits. Emphasising the diplomatic uses of souvenirs, Hendrick Smith reported in the *New York Times*: 'visitors on tour can hardly pass through a Soviet institution without being given a lapel pin as a gesture of friendship.'¹⁹²

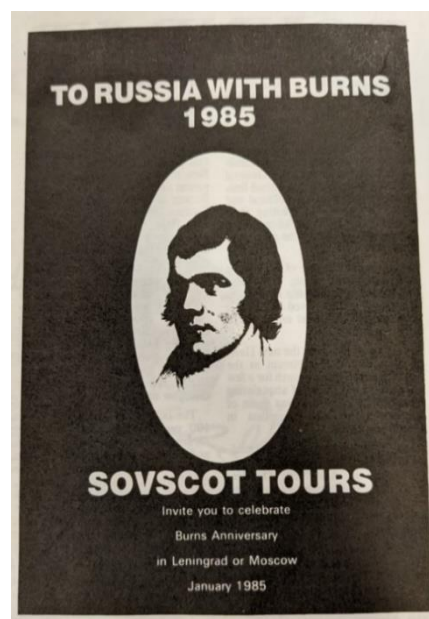


Fig. 5.11: Advertisement in the 1985 edition of Scot-Sov News offering Robert Burns themed tours of Leningrad or Moscow.

¹⁸⁹ Scotland-USSR Friendship Society, 'Scotland-USSR Society 1945-1985, 40 Years Working for Friendship: A Brief Account', 1985. Available at: <https://www.scotland-russia.llc.ed.ac.uk/wp-content/uploads/2016/10/Scotland-USSR-Society-1945-1985-1-6.pdf> and <https://www.scotland-russia.llc.ed.ac.uk/wp-content/uploads/2017/03/Scotland-USSR-Society-1945-1985-7-12.pdf>, Accessed, 11 June 2021, p.5.

¹⁹⁰ Edinburgh Conversations, 1981-1982, ACC.13596 held in the National Library of Scotland.

¹⁹¹ Scotland-USSR Friendship Society, 'Scotland-USSR Society 1945-1985, 40 Years Working for Friendship: A Brief Account', 1985, p.9.

¹⁹² Hendrik Smith, 'Pin hobby, Soviet Fad is Criticised' in *New York Times*, 22 September 1974. Available online: <https://www.nytimes.com/1974/09/22/archives/pin-hobby-soviet-fad-is-criticized-millions-to-be-produced-badges.html>, Accessed: 24 May 2021.

This Scottish-Soviet relationship is represented in the National Museums Scotland collection through souvenirs gathered on specially organised trips like those advertised in the *Scot-Sov News*. Edinburgh resident, Eileen Crowford visited the USSR twice in the early then late 1970s. She left the museum a large collection of souvenirs she collected on her trips in her bequest. She was a member of the Scotland-USSR Friendship group and had personal Communist leanings. Her first trip was to Moscow, St Petersburg and Kiev and her second trip covered more ground where she visited Siberia and the Russian interior.¹⁹³ She kept diaries, itineraries and notes of the things she had bought, including several badges and medals related to places she had visited and some political badges such as images of Lenin (Fig. 5.12). Foreign visitors to the Soviet Union were encouraged by tour guides to buy souvenirs from street vendors or through official *Berozka* shops in exchange for foreign currency like pounds or dollars.¹⁹⁴ Another example of Soviet souvenirs in the NMS collection is from a former NMS curator who visited Moscow and Leningrad in August 1976 as a student, where she went as part of a student cultural exchange trip from the University of London.¹⁹⁵



Fig. 5.12: Badges donated by Eileen Crowford from her trips to Moscow and Leningrad. A.1990.1178 and A.1990.1174. ©National Museums Scotland.

The badges produced in the Soviet Union during the Cold War represent key events, places, and periods of time. In this sense, they are witnesses to change, nationalist pride and are tokens of the past. The people who collected them and the places they

¹⁹³ Carys Wilkins, "Holidaying Behind the Iron Curtain: The Material Culture of Tourism in Cold War Eastern Europe," *Finnish Journal of Tourism Research* 17, no. 2 (2022): p. 11.

¹⁹⁴ Wilkins, "Holidaying Behind the Iron Curtain: The Material Culture of Tourism in Cold War Eastern Europe," p. 20.

¹⁹⁵ National Museums Scotland, SH.2009.13 and SH.2009.14.

were bought, whether in person or online, allow them to absorb new meanings at different points over their lifetimes. Collectors of souvenirs recognise their value and attach their own meanings to them.

Becoming Museum Objects

Although Russell's collection of souvenirs were not bought in Russia, this does not mean they hold less value. Russell collected the Space Race souvenirs with passion and dedication over a number of years, alongside collecting other examples of contemporary art and design such as ceramics and modern design. He had enjoyed them for several years and reflected the best way to preserve them for other people to enjoy them in future would be by donating them to National Museums Scotland. Russell elaborated: 'I was getting more and more of them, although I enjoyed them and I'm a bit of an inveterate collector, I thought they might go to somewhere where other people would enjoy them.'¹⁹⁶ He explained further that he had no desire to sell them and preferred 'the idea of somebody having them who would look after them' as well as him and the people who had preserved them before him.¹⁹⁷ His relationship with these objects has changed over time, from actively seeking and purchasing them to add to his collection, then after some time appreciating them he considers their long term future.

Often people donate objects to a museum to create a tangible connection between the museum and the donor resulting in a level of prestige.¹⁹⁸ However, I did not get this impression from speaking to Russell as he seemed more determined that other people enjoyed his collection as much as he had. Regardless of his intentions, this donation has created a link to Russell where the amateur donor and the professional museum have a relationship based on 'trust and data exchange.'¹⁹⁹ Furthermore, as Richard Handler describes: 'the temple of authenticity is the museum', implying that objects donated to a museum collection is a method of confirming their value, but also is a way of representing their creators or previous possessors.²⁰⁰

¹⁹⁶ Callum Russell, interviewed by Sarah Harper, 17 May 2021.

¹⁹⁷ Callum Russell, interviewed by Sarah Harper, 17 May 2021.

¹⁹⁸ Szczepanski, "Understanding Donor Motivations," p. 274.

¹⁹⁹ Alberti, *Nature and Culture: Objects, Disciplines and the Manchester Museum*, p. 100.

²⁰⁰ Richard Handler, "Authenticity," *Anthropology Today* 2, no. 1 (1986): p. 4.



Fig. 5.13: Russell's collection carefully displayed in his home. ©National Museums Scotland.

Although Russell gave a significant part of his collection to the museum, he still retains some badges and other Gagarin related objects which he decided to keep or that the curators did not acquire for the museum.²⁰¹ Russell clearly cared for his collection and wanted to ensure it had a positive future in a museum rather than being discarded. Although these objects were mass produced and are now readily available to purchase online, it is an unusual collection to be in Scotland without any previous connections to the Soviet Union. One of his motivations for donating the objects was in an effort to 'even the balance a wee bit' against more common American examples of Space Race material culture.²⁰² Russell approached the museum to ask if they would be interested in this collection.

After an initial phone call with the curators of Modern and Contemporary Design, they agreed to visit Russell at his Edinburgh home in 2018 to view his collection and select items for the museum. He showed them the contemporary crafts he regularly collects such as ceramics, furniture, and souvenirs and offered some of these to the museum. The souvenir collection was separate to the contemporary craft collection in terms of how these items were collected and used or displayed in Russell's home.²⁰³ He had the Space Race souvenirs especially laid out on a table runner with the badges at the

²⁰¹ Callum Russell, interviewed by Sarah Harper, 17 May 2021.

²⁰² Callum Russell, interviewed by Sarah Harper, 17 May 2021.

²⁰³ Email correspondence between Sarah Harper and Clare Wilson, 17 May 2022.

front and the bigger items at the back (Fig. 5.13). This attention to detail when displaying them to the curators is intriguing as it had clearly been well thought out with the badges in their own themes, from the early Space Race on the left to Gagarin and the first Vostok mission towards the right. He wanted to encourage the curators to accept his badges and appreciate their design. This is a key part of the biography of this collection as this is the point where the curators have the power to accept or reject these items into the museum. By carefully curating his collection and by emphasising their themes through grouping them and playing to the visual appeal of the objects, Russell is attempting to highlight the value of his objects and how they would be an asset to the museum.

To formalise the donation, the assistant curator completed a Proposed Acquisition (PA) form where she detailed why she felt these items were important to collect and what makes them significant. The PA form is a key museum process which marks the official beginning of the object's museum life or could stop an object becoming a museum artefact. Although curators justify the acquisition, senior museum staff scrutinise these forms to ensure these objects fit into the museum collections policies. From the museum Collection Development Strategy relating to collecting priorities for the Art and Design department, these badges would not be deemed a priority as they are not relevant to weak areas of the collection such as furniture and stained glass.²⁰⁴ However, Russell's collection relates to themes from the Eileen Crawford collection and overlaps with collection priorities with the Scottish History and Archaeology department. This process is key in museums to ensure museum issues with the profusion of collections are manageable and that items entering the collection are justified for acquisition by their object history, place within the wider collection and potential for future display and research.²⁰⁵

As an Art and Design curator and the department responsible for these objects, the PA explains the influence of the Space Race on design and decorative arts produced in the 1960s and 70s as a key reason for collecting these objects. The PA also explains that the badges offer 'an interesting counterpoint to mass produced commercial

²⁰⁴ National Museums Scotland, Collections Development Strategy, 2017-2022, p. 7. Available: <https://www.nms.ac.uk/about-us/our-organisation/policies-and-reports/collections-policies/>, Accessed: 31 January 2022.

²⁰⁵ Macdonald and Morgan, "'How Can We Know the Future?' Uncertainty, Transformation and Magical Techniques of Significance Assessment in Museum Collecting."

product design being manufactured in the post war era in the West which is already represented in the National Museums Scotland collection.²⁰⁶ This statement mirrors Russell's reasoning for his donation and confirms his original suspicions that the Museum did not have any objects like the ones he had to offer. The form does not mention the connections these objects have to the Cold War and the key part the Space Race played in generating international tensions. This supports the argument that there are a wide range of 'Cold War' objects held by NMS, but their identity is somewhat hidden by their surface value and obvious connections to art, military or other themes. This means that their Cold War connections are waiting to be realised. This could be in the form of inclusion in an exhibition related to the Cold War, utilised for further research into the Space Race and its influence on the Cold War.

The museum life of the Space Race souvenirs began once the PA had been approved, as the assistant curators hired the NMS van to carefully transport the collection to National Museums Collections Centre, Granton on 24 March 2018. As a standard NMS procedure, the items were immediately quarantined and examined by preventive conservation staff to ensure no pests were brought into the museum. Then the badges and souvenirs were accessioned with numbers K.2018.32-56, labelled, and mounted in a box and given a secure location to be stored permanently. This is a gradual process of the museum effect where they enter quarantine as regular objects but leave as accessioned treasures of the museum. Similarly, as Carys Wilkins describes in relation to the Eileen Crawford collection: 'in the museum context, the collector's hand becomes obscured as the personal collection is fractured through hierarchies of categorisation, separating objects by material and type.'²⁰⁷ This is also true for Russell's collection as these objects are now meticulously categorised and labelled which contrasts to the more relaxed environment of Russell's home.

From this point the objects will no longer function as badges to be worn but instead they will be appreciated for their other values: aesthetic, historical and political. As museum objects, they enter a new phase of their lives where people can assign their own meanings to them and view them in a different light to those who originally owned them. Through this process the objects gain new layers of authenticity as they have

²⁰⁶ Proposed Acquisition form PA000203, National Museums Scotland 2018.

²⁰⁷ Wilkins, "Holidaying Behind the Iron Curtain: The Material Culture of Tourism in Cold War Eastern Europe," p. 22.

entered a new environment where their status has changed from a cheap, mass-produced pin badge to being an object protected and preserved for posterity.

This does not mean the life of these objects has ended, rather it gives them new opportunities for research and display, and they are ascribed new kinds of values. Displaying this collection was also something Russell had mentioned, not in terms of projecting his name or status to the public through this donation, but to ensure the Russian side of the Space Race story is told through his objects. He remarked, 'I thought I wonder when the time comes to put on an exhibition which looks at the start or beginning of the Space Race whenever it appropriate to do, I thought to myself I bet they haven't got much where they can show the Russian side of things, it was just a thought and obviously it hit the nail on the head I suppose.'²⁰⁸ This shows his satisfaction in identifying a gap in the collection but also his delight at the thought of his objects being displayed if a relevant exhibition was planned. They so far have not been displayed to the public. Apart from use for public display, these souvenirs are a rich source for research for their design and artistic merits, connections to the Space Race and the Cold War as well as for considering the popularity of badge collecting which still continues today.

Conclusion

The biography of the Space Race souvenirs starts with the demand for *znachki* and their production in the Soviet Union to satisfy citizens so they can show national pride and preserve and collect a tangible piece of the Space Race era. Then as the Soviet Union broke up, the passion for collecting these souvenirs and badges declined. However, with the advent of the internet, the world of *znachki* collecting has opened up to people internationally and has led to new collectors gathering these fascinating objects. Furthermore, through amateur collectors like Russell, these ephemeral objects are now appearing in museums.

At each of these stages, these badges gain valuable authenticity depending on those viewing them. The original *znachki* creators and owners in the Soviet Union produced and bought these as ordinary pin badges which were not destined to be preserved for

²⁰⁸ Callum Russell, interviewed by Sarah Harper, 17 May 2021.

posterity. However, through each exchange between collectors and eventually to Russell's, these souvenirs have gained new meanings from expressing Soviet pride to being valued as an unusual artefact and representative of a moment in history. As they enter the museum, a new range of people can ascribe their own values and meanings to the souvenirs and explore their position in a number of narratives, including their Cold War connections. For Russell and those from the online forums, the Cold War connections to these souvenirs are reluctantly acknowledged. These people primarily view the Space Race and space exploration as a period of excitement and pride, rather than acknowledging what developing this technology meant for the potential for powerful weaponry – a key battle in the Cold War period.

Conclusion

This thesis has highlighted the array of Cold War meanings that have – or have not - become attached to objects within the National Museums Scotland collection. These meanings and values assigned to the objects have been directly influenced by the environments and actors they have interacted with at various points of their lives. When discussing ‘disobedient’ objects, Anna Feigenbaum suggests that objects gather meaning in their assemblages or how they merge with other technologies, bodies, and environments.²⁰⁹ Building on this idea, this thesis has demonstrated how the Cold War also acts as a kind of assemblage as each of the objects discussed intersects with the Cold War in different ways and at different points of their lives, some concrete and obvious, others more diffuse and illusive. The interactions between the objects and the Cold War have developed in a number of ways, such as through the technologies utilised, the symbolism and designs generated, the social movements motivated by shared ideology and the environments they originate from. The objects chosen for examination here demonstrated the range of impact the Cold War had on civilians from a global to local level. From a fast-paced jet aircraft to a Soviet pin badge, we can see how the Cold War filtered into the working and social lives of Scottish civilians in different ways and at different times. As these objects entered the museum, the memories attached to them became less connected to the Cold War and more about the physical use or creation of the objects. In many cases, people did not associate these objects with their Cold War memories at all. However, I have been able to draw out tangible connections between these objects and the Cold War, even where they were previously overlooked.

My argument was supported by the methodology - an object biographical approach coupled with oral history and research of archival and newspaper sources - enabled me to establish which people were key in framing the object’s biography in connection to the Cold War at different points in time. This approach also allowed me to explore the biography of an object in a wider context. For example, this proved especially useful for analysing the context of the Peace March Scotland 1982 as it was the contemporary context in which the rattle bottle was used. Similarly, this perspective has enabled me to examine how the objects under examination and their related

²⁰⁹ Feigenbaum, "The Disobedient Objects of Protest Camps," p. 36.

themes have appeared in contemporary online sources, such as active and archived forums and regularly updated social media groups and pages. Through these sources, such as Royal Observer Corps Facebook groups, aviation and phalerist forums, and former worker groups for Ferranti and Dounreay, I was able to see the evolving nature of these networks with people engaging with each other through shared memories, nostalgia, and knowledge exchange.

Although this study used Scotland's Cold War experience as a backdrop, interestingly, my interviewees did not reflect explicitly on the Scottishness of the objects under examination; they did not highlight the specifically Scottish nature of their experienced and memories. Instead, they implicitly assumed Scottishness to be a function of the geography of where the objects were used, produced, and created or in many cases the nationality of those operating, making, and collecting these objects. The only case where the Scottishness of the object came to the fore is when examining the dispute over the Dounreay Fast Reactor control room's migration to London.

This conclusion discusses my main findings and elaborates on the practical implications of my research in light of the fact that my research was the result of a collaborative doctoral partnership award with National Museums Scotland (NMS).

Key Findings

It is through examining the interactions between objects and the Cold War that I have addressed the question of to what extent Cold War meanings have become attached to the objects I have selected from the National Museums Scotland collection. My thesis has demonstrated how Cold War meanings gain and lose potency as these objects progress through their lives. The interactions between people, places and the object are the most important factor in establishing the extent to which Cold War meanings have become attached.

The Ferranti Meteor and the Dounreay Fast Reactor control room share Cold War connections through their link to Cold War advancements in science and technology research and development. This is a key Cold War theme echoed by historians such as David Edgerton, Robert Bud, and Jon Agar, who propose the scientific field was as much a 'campaign' front as a military equivalent during this period. The Meteor aircraft

and the DFR control room are brought together in the museum setting as an assemblage of Cold War science and technology.

By recognising the contributions of the Meteor and the DFR control room to Cold War science and technology, we can see how these meanings have become attached in their use lives. Both Ferranti and Dounreay workers were proud of their achievements in developing advanced machinery and equipment with new and exciting capabilities. Ferranti workers were aware that their efforts were contributing to the British defence system, whereas Dounreay workers did not see any correlation between their work and the wider Cold War. My thesis has demonstrated that some of those who continued to interact with these objects recognised a Cold War connection and valued these objects as Cold War objects. Others, by contrast, did not. For the latter group of interviewees, it was my research that brought the Cold War into focus. It made my interviewees consider where and how these objects have been entangled with Cold War ideas, networks, and practices.

The Dounreay Fast Reactor control room is valued by people as a scientific achievement, but it is also recognised in terms of its heritage and social value. The controversy surrounding the DFR control room potentially moving to London enlivened the local community and brought them together in opposition to losing a part of their local history. The removal of the control room from Caithness impacted on the shared identity of local people as it moved to a place where it would not be appreciated to the same extent. As time goes on, fewer people will remember Dounreay in production and instead will recall the long decommissioning process. However, the control room will act as a tangible reminder of the achievements of Dounreay in Caithness during the Cold War.

Understanding what happens to objects as they enter the museum is important in explaining how the meaning of objects change as they transition from their use lives to museum lives. I was able to demonstrate that the social lives of objects did not simply end when they joined a museum collection, but that their meanings changed. For example, the meaning of the collection of Soviet and Space Race souvenirs alters as it transitions from being a carefully curated collection of cherished objects by an individual, until their acceptance into the museum placed them among a collection of literally millions of other objects. This is not to say that the museum does not appreciate the uniqueness or quality of the collection, but they are now viewed for their

artistic and design merits rather than for evoking childhood memories. In contrast, as the Ferranti Meteor, the DFR control room and the ROC equipment entered the museum collection, their functioning or use lives were already to some extent over as each had already been made redundant or decommissioned from their original roles.

For objects pertaining to political and social organisations, my research found a different set of relationships between their pre-museum lives and their lives in the NMS collection. I examined objects relating to the Royal Observer Corps and the Scottish Campaign for Nuclear Disarmament. Both organisations took on different ideological stances to the Cold War: the former endeavoured to take practical action to prepare the nation for a nuclear attack and survival, whereas the latter took a political stance against the root of the issue - nuclear weaponry.

During the use lives of ROC and CND objects, those interacting with them were aware of the influence of the Cold War on their activities. For example, former ROC Observers recalled that during their active service they knew that their role would come in to play after a period of rising international tension and that they were trained specifically to assist the civilian population in the event of a nuclear attack. Both ROC and CND campaigners mentioned their pride in their efforts during the Cold War period. This pride is presented now by ex-ROC members and enthusiasts' efforts to preserve objects and ROC posts to ensure their connection to the Cold War period is recognised. Similarly, Kate Barnet shared her sense of achievement in taking action against the proliferation of nuclear weapons by protesting on a local and national level. By speaking to Barnet with the objects present and hearing her first-hand accounts of CND activism, it was apparent that she plotted her CND journey through these objects. This collection in NMS is inextricably linked to Barnet, both in a literal sense as her name is attached to many things, and also intangibly through the stories connected to the objects. This enriches the authenticity of these objects as they embody the relationships and places Barnet engaged with while campaigning throughout the Cold War period.

Previous literature has already demonstrated how the Cold War influenced the creation and use of the built environment and art and design. For example, symbols which have Cold War meanings span across the collections as shown by the CND collection and the iconography of the Soviet and Space Race badges. Each symbol

such as the hammer and sickle or the iconic CND logo have somewhat outgrown their original messages and have become internationally recognised as symbols for peace campaigners and communism independent of the Cold War context. Many of these symbols may be recognisable to museum visitors. However, this poses challenges for the ways in which different demographics might make sense of such objects if they are moved from the museum collections into the exhibition. Younger generations are less likely to understand the connotations of important symbols such as the CND logo, instead basing their interpretation of the Cold War on more modern sources such as films, television series and exhibitions.²¹⁰ At present, only the Ferranti Meteor is on permanent display, with all other objects discussed in long-term storage. However, the curators I interviewed implicitly placed more value on collecting objects which had the intrinsic potential to be displayed due to their attractive appearance or the messages they portray. National Museums Scotland did not collect these objects for their Cold War connections. They were acquired for their value as examples of unusual art and design ephemera and examples of Scottish social history. Through this research shining a light on these objects for their Cold War associations, I encouraged my interviewees to consider these objects this way. My interviewees agreed that these could be considered Cold War objects, even if they had not thought of them in this way previously.

My thesis has shown that it is not only personal and communal connections around the objects that have influenced the way in which value is ascribed to them. The location from which these objects are viewed can also influence how they are ascribed with various meanings and layers of authenticity by different actors. Taking objects like the CND rattle bottle or badges from an activist and putting them into a museum collection dramatically changes their meaning as they go from protest objects to being subdued in a museum store. Although such objects maintain their characteristics as use objects when entering the museum, the rattle bottle is silenced as it enters the museum: it will no longer be shaken in protest, and the CND badges will remain unworn.

There are also differences in how various people have ascribed value and authenticity to Cold War objects not only because of location generally, but also, specifically,

²¹⁰ Marshall, "The Cultural Memory of Britain's Cold War," p. 23.

between viewing movable objects in their original setting or in the museum. In restored ROC posts, objects are shown in curated displays or are brought to life in their original contexts through demonstrations of functioning equipment which produce movement and sounds. Viewing these objects in the ROC posts helps in understanding their original function, their reason for existence and shows how people interacted with them - all aided by ex-Observers sharing their lived experiences. By learning about secret underground bunkers and high-technology environments like a nuclear power station from which these objects originate, Cold War connotations become apparent. The ROC equipment and the DFR control room are inextricably linked to their former environments and are a key element of the object's biography.

As well as considering the original environments of these objects, my research has found that the museum, as an institution governed by policies, protocols, and accepted procedures, influences how people ascribe objects with authenticity through key practices such as cataloguing, accessioning and display. The absence of a Cold War category at NMS has meant that there has been a missed opportunity to encourage others to recognise the Cold War associations of these objects or to consider other potential Cold War objects. As well as these museum protocols, the acquisition route of each object is pivotal in the object's biography as we can identify specific actors who assign their own meanings, values, and layers of authenticity onto the object through the act of donating. The objects under examination here each have different donation stories with key individuals and organisations supporting and encouraging their acceptance into the National Museums Scotland collection. For example, the donation of the Meteor was supported by Ferranti Ltd as a way to connect with the local Edinburgh community and to preserve their heritage. However, it was Tom McIlwraith, who had personally flown and worked with the Meteor, that was the driving force to organise the donation and subsequently donations of his own personal items, thus permanently linking him to the museum. This act of donating clearly shows how much McIlwraith saw value in preserving Ferranti related items for posterity.

The meanings and values museum professionals attach to objects in the museum context are as important as understanding how the people who were involved in the use lives of these objects ascribe meanings. Each of the objects selected here are under the care of multiple curators at NMS. Each associates different meanings with them and assigns different values to them. Although many acknowledged the

connections between these objects and the Cold War, most attribute value to the objects for their original function or significance in their field. The accepted protocols and procedures of National Museums Scotland, places the curators in a position where the meaning and values they assign to objects are inherently influenced by these procedures. In the acquisition proposal phase, curators are asked to justify why objects should be accepted into the collection and what the object could bring to the museum in terms of likelihood of display or opportunity for further research. In some ways this leads to curators viewing objects as more or less valuable depending on their potential for future display. For example, one of the reasons Dianne Child, curator of Modern and Contemporary History, supported the acquisition of the rattle bottle was because of its attractiveness for display, especially as three-dimensional objects are given precedence in displays over print culture.

My research has also highlighted the differences between museum objects and those collected and displayed by amateur enthusiasts and heritage groups. These networks of people, many of whom are private collectors and enthusiasts, are not connected to traditional museums meaning objects are not subject to bureaucratic and professional protocols like those of a museum. For example, there is clear difference between how former ROC Observers and enthusiasts interact with ROC material culture in comparison to those held by a museum. This is demonstrated by the restoration of ROC posts and the importance of material culture in furnishing these spaces and being physically demonstrated to visitors. Furthermore, these sites are under less obligation to limit the number of objects they collect, meaning these amateur museums are full of objects, many of which are duplicates or only tangibly related to their site or topic. By engaging with these amateur historians and enthusiasts, I have been able to establish connections between informal and lived experiences of using the objects within the collection – information which was not previously linked with the array of museum documentation held in the object files at NMS. Speaking to ex-Observers who have real world experience of using ROC equipment, albeit not the specific items within the NMS collection, tells us more about the everyday practicalities and even emotions attached to these objects. My research has shown that there is no fixed collective memory of the Cold War that museums could display, nor a shared view on the Scottish Cold War experience. However, objects like those examined here show a range and diversity of memories attached to them. Some did associate their Cold

War memories with these objects, where others rejected this and did not see the connections. In each case study, the personal emotions and experiences of the interviewees influenced their memory of the Cold War rather than a shared collective memory of the period.

Practical Implications

My findings have shown the different ways people have ascribed a variety of meanings and values to these objects. This has practical implications for museum work at National Museums Scotland. Through my privileged position as a Collaborative Doctoral Partnership student working with NMS, I had unlimited access to the collections and collections management information. This gave me the opportunity to develop a close working relationship with a number of curators and museum staff.²¹¹ As I was embedded within the Science and Technology Department at NMS, I participated in monthly department meetings, received updates on department news via group email and was invited on several department trips and social events. I felt like a member of the department and began to think with the science and technology collections in mind as I became particularly familiar with the objects under the supervision of curators within this department. This to some extent influenced my decisions on which objects to study as staff suggested objects from their specific section. This also created a mutually beneficial opportunity as curators shared their personal experience with the objects and offered suggestions on sources to consult, but also, I highlighted the potential for new perspectives for them and discovered new information. This was relevant in a number of ways: classification, information on the objects and connecting the museum with people linked to the objects. This was the case for the ROC objects as, building on Euan Green's knowledge, I found out further information about their donation and some technical details about the objects, as well as finding former Observers who had first-hand experiences using these objects. Similarly, Dianne Child from the Scottish History and Archaeology Department shared

²¹¹ As the Covid-19 pandemic hit in March 2020, this access was significantly reduced with only a few visits to the museum in late 2020, then more frequent but limited access permitted in 2021. I had remote access to the museum's collections management database, Adlib, and staff within the Science and Technology department kindly assisted in providing access to saved digital images, correspondence, and information on objects under investigation.

her memories of originally acquiring the Kate Barnet collection and her interview with Barnet. Expanding on this, I composed questions for Barnet to build on Child's interview meaning I could gain additional information from my interview. I also was involved in cataloguing the Kate Barnet collection and learned more about the acquisition process through the donation of the rattle bottle.

In some ways, by following these museum practices and through my research, I have written myself into the biography of these Cold War objects by influencing their museum life and how others now view them. Furthermore, by bringing attention to the objects mentioned and earmarking others with potential Cold War connections, I have increased their chances of being considered for display or further research as part of the *Materialising the Cold War* project led by my doctoral supervisors.²¹²

As I came at their collection from a different angle, I noticed a slight, but productive, tension which generated new knowledge about objects. For example, several items within the ROC collection were incorrectly described on the collections database or required clarification to differentiate them between similar objects. Although I was attached to the Science and Technology department, I also considered objects from other NMS departments to attempt to bring together military and civilian objects under the Cold War theme.

By taking an object biography approach, I was able to share new in-depth information with curators about their collections to improve categorisation and highlight points for further research. For example, there was little information in the Ferranti Meteor's object file pertaining to its life prior to joining Ferranti which linked the aircraft to Cold War era defence contracts. Additionally, by conducting thorough research of individual CND objects, I was able to share more about the context in which these items were produced and showed how the Cold War influenced their creation. Prior to this research there was no *Cold War* category on the NMS collections management software, and consequently there were no objects designated as *Cold War*. This category was created following my research, highlighting the practical impact my research has had in changing assumptions about the value of museum objects.

²¹² National Museums Scotland intends to present a Cold War exhibition in 2024 as part of the *Materialising the Cold War* project. National Museums Scotland, 'Materialising the Cold War', www.nms.ac.uk, <https://www.nms.ac.uk/collections-research/collections-departments/science-and-technology/projects/materialising-the-cold-war/>, Accessed 12 June 2022.

One of the main issues NMS now faces is the lack of clarity or definition of what a Cold War object is. How objects are described on the collections database is at the discretion of the curators who appropriately attribute objects to relevant categories and time periods. It is impractical for curators to assign objects with every possible category. Most objects are part of multiple narratives and mean different things to different curators who encounter them. Through this research, I have established some criteria and things to consider when attempting to identify Cold War objects. Objects need to be assessed in terms of their biography as the context in which some objects were created or used may have been directly influenced by the Cold War which is not always apparent on first inspection of an object. When looking for Cold War connections, thinking about the technology used, the motivations for their creation or the political leanings of those connected to the object, could lead to some discoveries. Furthermore, key locations and people connected to the objects could also reveal more about connections to the Cold War.

Overall, my thesis has highlighted the opportunity to discover Cold War objects hidden in plain sight as there are a wide range of objects within National Museums Scotland which are yet to be valued for their Cold War qualities. Discovering these objects needs to be an ongoing process where, through their connections to people and places, Cold War aspects of objects can come to the fore. I identified many more objects within the NMS collection with Cold War associations which would also benefit from further study.

The collections of National Museums Scotland represent significant elements of Scotland's Cold War experience. However, until now these dimensions have been mostly unacknowledged. There are some areas where the collection could expand to address other Cold War themes, such as the influence on popular culture, art and design, and on specific communities in Scotland. Ultimately, this research has demonstrated the effectiveness of using an object biography approach to produce new perspectives on Cold War history using material culture.

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HH51/435- CD: UKWMO 1980-88- Communications equipment for Sector Operations Centres and Royal Observer Corps Group Centres: general.

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Newspapers

Aberdeen Evening Express

Caithness Courier

Glasgow Evening Herald

John O'Groats Journal

The Press and Journal

The Scotsman

Oral Testimonies and Email Correspondence

The names of all those who participated in this research, in the form of interviews or email correspondence, have been changed to protect their identity as far as possible.

Interviewed by Sarah Harper (pseudonyms used):

- Fred Allen – 4 February 2020
- Kate Barnet – 10 April 2019
- John Dunn – 1 February 2021
- Euan Green – 30 January 2020 and 30 July 2020
- Tom Olden – 13 February 2020
- Callum Russell – 17 May 2021
- Gordon Smith – 20 February 2020
- Joseph Victor – 9 November 2020
- Jonathan Yarrow – 14 February 2020

Interviewed by John Dunn:

- David Brought – 14 August 2014

- Don Ryan – 2 December 2011
- David Sprague – 14 December 2011

Interviewed by Dianne Kidd:

- Kate Barnet – 30 April 2009

Email Correspondence between Sarah Harper and:

Fred Allen – 2 September 2020

Kate Barnet – 31 July 2019

Alastair Bennett – 27-29 July 2020

Tom Burrows – 30 November 2020

Daniel Chalk – 29 July 2020

Dean Clarence – 29-30 July 2020

Simon Farmer – 16 August 2020

Carl Henry – 2 February 2020, 30 November 2020, 2 December 2020

Jane Hinch – 2 July 2020

Larry Howard – 24 October 2020

Alan McDonald – 3 February 2020

Albert McKenzie – 3 February 2020

Bill Patrick – 24 October 2020

Tony Rockford – 30 October 2020, 3 November 2020, 10 November 2020, 11 November 2020

James Robson – 24 July 2020

Callum Russell – 28 October 2022

Tim Simpson – 24-25 July 2020

Elizabeth Sinclair – 10 January 2022

Clara Stephens – 9 January 2020, 2 April 2020, 14 September 2020

Aileen Stone – 28 October 2022

Clare Wilson – 17 May 2022

Oscar Woodward – 4 January 2022

National Museums Scotland Objects

A.1990.1174 – Square badge in enamel and yellow metal, depicting the Tsar bell and cannon in Moscow, with four groups of Cyrillic lettering around the frame: USSR, 1960s.

A.1990.1178- Square button/ badge bearing a black and white portrait of Lenin on an iridescent green background: Russian, 20th Century.

EF.1992.95.24 – Fixed Survey Meter, Royal Observer Corps.

EF.1992.95.35 – Fixed Survey Meter Trainer, Royal Observer Corps.

EF.1992.95.54.1 –Post Padlock, Royal Observer Corps.

EF.1992.95.233 – Box of Rations, from Royal Observer Corps.

EF.1992.95.277 - Micklethwait Plotter.

K.2018.32 - Rectangular shaped white metal souvenir Soviet cigarette case with red and white enamel stars, red enamel rocket and blue and white enamel terrestrial globe: USSR, c.1960s.

K.2018.34 - Rectangular yellow metal souvenir Soviet cigarette case, rounded at the corners with raised decoration, depicting a stylised Sputnik and two bands of Cyrillic letters: USSR, c.1960s.

K.2018.41 – ‘Soviet Man in Space’ book, Foreign Language Publishing House, Moscow, 1961.

K.2018.44- Circular white metal souvenir pin decorated with red, blue and black enamel commemorating the Vostok 1 launch in 1961: USSR, c.1960s.

K.2018.45 - Rectangular yellow metal and red enamel souvenir pin commemorating the Vostok 1 launch in 1961: USSR, c.1960s.

K.2018.50 - Badge commemorating the Sputnik launch on 4 October 1957.

K.2018.52 – Five-sided white metal and red and blue enamelled souvenir pin, with central circular cartouche featuring Sputnik 1, commemorating Soviet technological achievements in Space: USSR, c.1960s. Translation: 'The First Artificial Satellite of the Earth History of Cosmonautics.'

K.2018.53 – Yellow metal souvenir pin with red, white and blue enamel, featuring two stars, a hammer and sickle, the face of Yuri Gagarin and his name in Cyrillic letters along with the date 1961: USSR, c.1960s.

K.2018.54- Five-sided white metal and blue enamel souvenir pin, featuring the face of Yuri Gagarin in profile with his name in Cyrillic letters underneath, commemorating Soviet technological achievements in Space: USSR, c.1960s.

K.2018.56- Circular yellow metal and blue and red enamelled souvenir pin commemorating Soviet technological achievements in Space: USSR, c.1960s. Translation: The First Manned Spacecraft.

T.2015.19 – Dounreay Fast Reactor Control Room.

T.2015.24 – Dounreay Prototype Fast Reactor Electrical Control Panel.

T.2011.32 – Apricot F2 Computer, made by Apricot Scotland Ltd, 1985-1989.

T.2011.34 – SOLIDAC Computer, made by Barr & Stroud and Glasgow University, 1964.

T.2011.213 - Dounreay Site Restoration Limited Dose Rate Meter.

T.2011.203 - Dounreay Site Restoration Limited Materials Testing Reactor Element.

T.2011.220 - Dounreay Site Restoration Limited Helium Detector.

T.2007.218 – Sculpture of Dounreay Power Station.

T.1973.88.1 – G-ARCX Ferranti Meteor Aircraft.

T.1967.125 - 'Conquest of Space' record of Yuri Gagarin's space-orbit flight.

W.MS.2000.28.2 – Broken Missile Postcard.

W.MS.2000.28.47 – Greenham Common Summer Newsletter.

W.MS.2000.28.48 - Greenham and Common Autumn Newsletter.

W.MS.2000.28.111 – Protest and Survive Postcard.

W.MS.2000.28.187 - From Nuclear War Games in Your Own Backyard?

W.MS.2000.28.260 – Pram Stall Leaflet.

W.MS.2000.28.282 – Widening the Web Booklet.

W.MS.2000.28.313 – Five CND Stickers.

X.2019.366 – CND Rattle Bottle.

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