Documenting the last surviving traditional boats on the Maltese Islands: a case study on the *firilla*

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This report focuses on research carried out on the collection of firilli *boats found at the Maritime Museum in Vittoriosa, Malta. The objectives were to document and record this boat type, by collecting knowledge from oral traditions and literature, paintings and photographs, tools and materials and ideologies. An environmental and historical background is outlined at the beginning of this study, providing the context for the* firilla *boat. Following this, previous literature dealing with documentation of traditional craft is presented. The methodology applied to document the primary sources is explained, along with a brief description of the secondary data collection. The subsequent section describes the results of the boat documentation, leading to a discussion of the most prominent differences.*

Introduction

Project Background

The following report is based on a study conducted as part of a Master's thesis in Maritime Archaeology at the University of Southern Denmark, titled *The Firilla: A Case-Study of a Maltese Traditional Boat* (Said 2015). The study aimed at collecting primary and secondary data on the *firilla*, a local traditional boat that is no longer being constructed. The study included the following:

i). The documentation of three examples of *firilli* boats to archaeological standards, including two-dimensional plans and three-dimensional models

ii). The extraction of naval architectural line plans from the above data

iii). The extraction of hydrostatic analysis from the three-dimensional models, and

iv). The carrying out of ethnographic research on local boats and their construction sequence, with a focus on the *firilla* type.

The time frame being discussed covers the late eighteenth, nineteenth and twentieth centuries in Malta.

Maltese Local Wooden Boats

Environmental and Historical Background

One need not expand on the fact that the Maltese Islands have long been influenced by the surrounding waters. Traditional wooden boats are a phenomenon of an enduring maritime culture and their survival reflects the island's inevitable need for some form of water transport. Unfortunately, the tradition of constructing wooden boats is a diminishing one, with modern fibreglass replicas being preferred. The wooden fishing fleet has drastically decreased, whilst the few remaining passenger boats ferry tourists around the harbour areas. There is a lack of interest in the art of wooden boat building, boat builders now opting for a more efficient means of earning a living. Furthermore, the older generation of boat builders has gradually passed away, taking with it the knowledge of this craft. The handful of still active boat builders form part of regatta clubs, taking care of and maintaining regatta racing boats, whilst the few boat building families are limited to restoring boats rather than constructing new ones. The realities have resulted in a dying tradition of building local wooden boats, with a radical loss of the knowledge and skill, which has been present for centuries.

Received 31 August 2015, Revised 18 July 2016, Accepted 1 September 2016

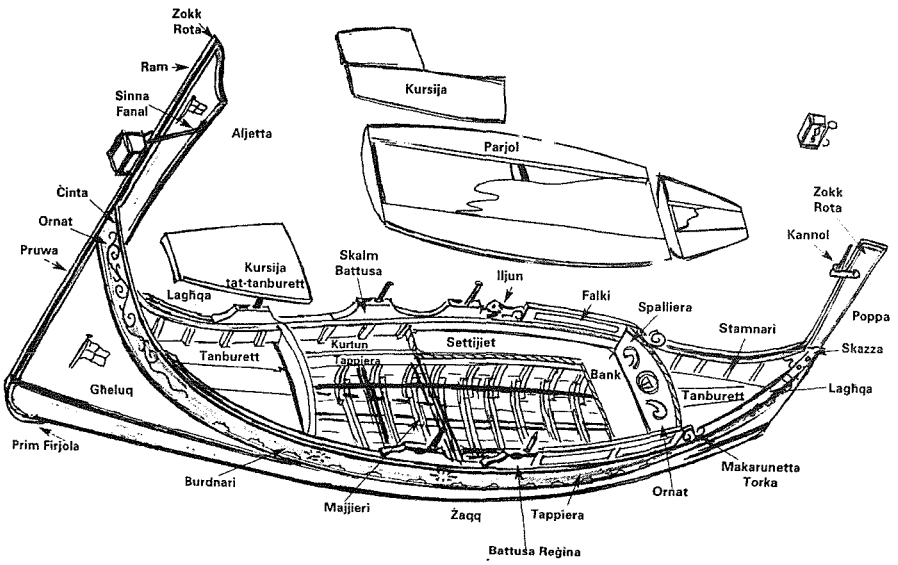

Figure 1. Maltese *dgħajsa* with its respective elements: from top left; stem or sternpost (*rota*), forefoot or gripe (*zokk*), brass or copper fittings (*ram*), lamp fitting (*sinna, fanal*), rubbing strake (*ċinta*), decoration (*ornat*), stem/fore (*pruwa*), keel (*prim*), 'false keel' (*firjola/ kurriġġa*) can also be made of brass or copper, planking (*għeluq*), scuppers (*burdnari*), floor frames (*majjieri*), mid-section (*żaqq*), rowlock (*battusa*), sheer strake (*tappiera*), fitting found on the gunwale holding in place a washboard (*makarunetta*), gunwale (*bardnell/lagħqa*), stern/aft (*poppa*), lamp fitting (*kannol*), futtocks (*stamnari*), triangular fixed deck (*tamburett*), back board (*spalliera*), bench (*bank*), washboards (*falki*), side benches (*settijiet*), horizontal plank that forms part of the waterway (*kurtun/trinkarin*), triangular removable deck (*kursija*), floor boards (*parjol*) (after Pulè 2000).

The characteristics defining the *firilla* are its high stempost and shorter sternpost. They are open, double ended boats, exhibiting a U-shaped central cross-section and a V-shaped fore and aft cross-section. (Fig. 1). Initially the *firilla* was used as a multi-purpose boat, but later is was solely used as a fishing boat. The *firilla* boat also took part in regatta races after it was modified to perform faster, with a much lighter and shallower hull.

Literary sources regard the *firilla* as one of the earliest types of local boat, followed by the *kajjikk* and later the *luzzu* and *fregatina* (Muscat 1999, 85). Initially, the *firilla* was described as 'a small, swift passenger boat rowed by one or two boatmen, plying between Birgu and Senglea' (Muscat 1999, 85). Later the term *firilla* was applied to a fishing vessel, which became popular amongst local fishermen by the end of the nineteenth century (Muscat 1999, 86). Muscat adds that, 'The name *firilla* remains part of the Maltese language and refers to swiftness as in the expression as nimble as a *firilla*' (Muscat 1999, 85).

The *firilla* is described as an open double-ended boat, carvel built, with a straight keel and stemposts fitted at 90 degrees, a feature that was introduced by the turn of the twentieth century (Muscat 1999, 86). This later feature seems to coincide with the boat's change in function as a fishing vessel rather than a multi-purpose boat. Originally the boat had a rounded fore and aft bow (spoon bow). Speed was not a central criterion and transportation occurred within relatively calm waters (within harbours and bays). The change in design led to a greater hull speed due to a finer entry into the water as the front bow pushed the water gradually away from the hull, cutting through the waves. This resulted in less energy needed to propel the boat and shorter travelling time. Boats could now travel outside of the sheltered areas, in relatively less calm waters.

It was often steered by means of a rudder and a sprit-rig. However, within the limits of the harbour the boat was rowed, 'usually manned by four men and a *padrone*' (Prins 1986, 197). The length of a *firilla* is said to be between 4.70 m and 8.90 m (Camenzuli 1968, 12). According to Farrugia Randon, in the past this boat was used as a 'lamp boat for *lampara*-fishing and for fishing inside bays and creeks' (1995, 87).

What distinguishes the *firilla* from other boats is its tall stempost and a higher free board. The reason for the high stempost was that it functioned as a support and a mooring device. The boatman held onto the stem when he was about to moor the boat to shore. Any passengers coming onto the boat stepped over onto the front deck, holding onto the stempost and then moving to the centre. None of the passengers were allowed to board the boat from the port side as this might cause the boat to heel (Pulè 2000, 59).

The *firilla* boat also took part in the annual regatta races. During the early nineteenth century, the regatta race was introduced by the locals in order to 'compete for a prize as part of the festivities of Our Lady of

Victory and commemorate the Great Siege of 1565' (Muscat 1999, 168). Initially the boats that took part in this race were traditional passenger boats, namely *firilli* and *caiques* (Muscat 1999, 168). Today the races are held with three boat categories and are held twice a year, on the 31st March, celebrating Freedom Day and 8th September, dedicated to Our Lady of Victory.

Previous Research

Theoretical Background

Very often we look at boats or ships as objects in isolation. However, these need to be studied in their broader context. This idea is highlighted by Lucy Blue who states that:

> approaching the boat in its broadest context, communicating with the boat builders and users – asking them questions about their boats and their view of the world: by no longer approaching the object in isolation; *then a far more complex, explicit picture will emerge* (2000, 335).

This idea was already put forward by O. Hasslöf in 1972, who coined the concept of Living Tradition, which includes all matters concerning the survival of traditional ways of living. Hasslöf defines three components that make up the tradition – what is handed over; the handing over taking place between the giver and receiver; and the means of communicating this transfer (1972, 20). He expands the latter to include the various media through which one can transmit information – 'such as the spoken and the written word, pictures, actions and behaviour, objects and equipment (artefacts), social groups and institutions' (1972, 20).

Foreign & Local Literature

Numerous studies reflecting the above views have been carried out around the globe directed at recording traditional wooden vessels. Some of the major foreign published works stem from Scandinavia, the United States and the United Kingdom. The aims of these works were primarily to document traditional local craft which were on the decline, due to the introduction of the engine. Two such works include *Inshore Craft of Norway*, published in 1979 by A.E. Christensen and *Working Boats of Britain, their shape and purpose* published in 1983 by Eric McKee.

Case studies have also been conducted in Oman and the Bay of Bengal consisting of ethnographic works on still living tradition. *A Survey of Traditional Vessels of the Sultanate of Oman – The Omani Dhow Recording Project Field Research* was conducted in 1992 and led by T.A. Vosmer, R.E. Margariti and A.F. Tilley. The project had three aims: to collect data, to analyse the data and to formulate hypotheses and theories (1992, 1), on a still living tradition. Similarly, *The Patia Fishing Boat of Orissa: A Case Study in Ethnoarchaeology*, carried out by L. Blue, E. Kentley, S. McGrail and U. Mishra in 1996 within the North West Bay of Bengal was aimed at assessing the potential of coastal Orissa for archaeological and

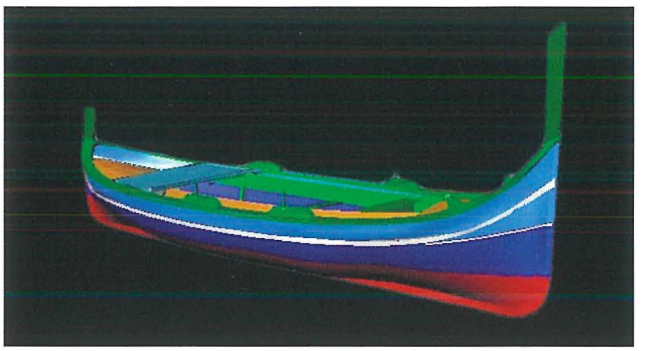

Figure 2. Rowed *firilla* three-dimensional model (after Said 2014).

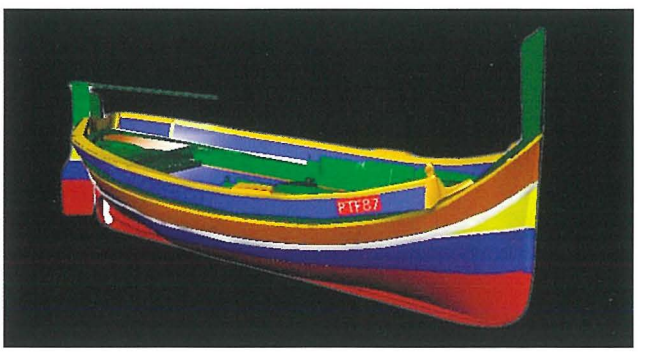

Figure 3. PTF87 *firilla* three-dimensional model (after Said 2014).

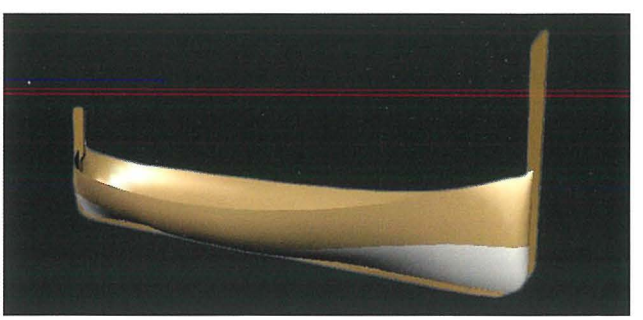

Figure 4. Regatta *firilla* three-dimensional model (after Said 2014).

ethnographic studies of water transport. The ultimate aim of this fieldschool was to create a template for future recording of surviving examples of boat types found along the coastal area of Orissa, as this area has potential for surviving ancient rafts and boats (1996, 191).

Unlike Scandinavia and the UK, there have been no inter-disciplinary studies carried out on this subject in the Maltese Islands. The available literature dealing with Maltese traditional boats is limited to three main authors, namely the publications of J. Muscat, C. Pulè and P.G. Camenzuli. These works are based on personal experiences and networks, and were not carried out with the intention of conducting a systematic documentation of local boats.

Muscat and Pulè published their books in 1999 and 2000 respectively. Muscat's book, *The Dgħajsa and Other Traditional Maltese Boats*, focuses on giving a general overview of the *dgħajsa*, including a tentative evolution, its construction sequence and then a chapter dedicated to the main types of local boats. He provides ample photographic evidence along with paintings, including some of his own drawings (none are to scale). His final chapter concludes with the September regatta. Muscat has published other shorter articles, however the information provided is generally recycled.

Qxur, Biċċiet, u Opri Tal-Baħar written by Pulè, is published in Maltese, as he believes that such heritage should be documented in the local language. The work is a description of a living technology (Pulè, 2000, x). The author starts off with a general overview of timber conversion and the required tools. He then gives a brief introduction to the different boats and how they react to the seas found around the Maltese Islands. In the third section, a chapter is dedicated to each boat type. These are described and hand drawings illustrate each element of the boat. Methods of steering, including oars and sails along with some fishing equipment are also mentioned. Sea ventures are narrated in the last chapter.

These local publications are invaluable studies as they record building methods, function, general characteristics and ethnographic details. The authors have exhausted their excellent access to social groups who are not renowned for their openness with unfamiliar people. However, what has not been done so far is an archaeological documentation of the boats themselves, incorporating a systematic survey which collects data, conducts analysis and then formulates hypotheses and conclusions. This report will attempt to do so, despite the fact that this will be carried out on one specific boat type.

Methodology

The primary data has been extracted from three examples of *firilli* boats located within the stores at the Maritime Museum in Vittoriosa, under the care of Heritage Malta. The secondary sources focused on oral traditions/information, written texts, iconographic material such as paintings and photographs, traditional tools used for boat building and institutions represented as the regatta clubs. A lot of the terminology that is applied to name and describe elements making up the boats, tools used for boat building and fishing techniques and equipment survives in its original form. For practical reasons, the terms will be written in English within this report, unless otherwise stated.

Primary Data Collection

Traditional hand drawings using the offset method, along with electronic/digital tools for three-dimensional recording, were applied to document the boats. The application of electronic/digital recording was found to be a more efficient recording method than hand-drawn plans. However, both methods were applied due to limitations encountered when documenting the interior framing systems of the boats, as these were hidden beneath other elements.

The initial task involved the cleaning of the boats and surrounding areas, which enabled the visual observations of elements, such as scarfs, caulking application, paint layers and wood identification. This was followed by the recording of the boats in the following order, namely exterior, interior and decorative elements, with the final step incorporating any recapturing of data. Post-processing of the data resulted in finalised three-dimensional models, presenting a visual representation of each boat (Figs 2-4). Naval architecture line plans and hydrostatic analysis were extracted utilising other software and techniques. However, limitations of space do not permit going into greater detail here. Boat descriptions were compiled, listing all the elements involved in their construction and their respective dimensions. The features were listed following the construction sequence of the boats, following the skeleton-

based technique. Along with this, the biography of each boat was researched via museum records and museum personnel. Finally, both detail and general photographs were taken of the boats.

Hand-drawings were done using a scale of 1:10, with each element numerically labelled starting from the bow and finishing at the stern. The drawings were then digitized using Inkscape, a freeware vector programme, and retained as two-dimensional plans, making it easier to present the data.

Electronic/digital recording was achieved via the use of a Total Station directly connected to a laptop running Rhinoceros 4.0 CAD software, via Termite interface software developed by F. Hyttel. This method is both functionally and financially feasible, and has a number of advantages. These include real-time recording allowing for corrections to be made instantaneously, as well as relocation and orientation of the total station with minimal effort (Hyttel 2011, 3). The advantage of using Rhinoceros software is its ease of use, and the fact that is can process both two- and three-dimensional curvature (Hyttel 2011, 27), making it easier to create the models from the data collected.

Secondary Data Collection

The most informative sources were the regatta boat builders and their assistants, who were willing to share their knowledge on the construction of wooden boats. Unfortunately, a reserved approach was encountered with a few of the older boat builders. However, retaining knowledge within the family is an old tradition, which still seems to persist.

Archival documents found at the National Archives (Mdina and Rabat), reflected the popularity of local wooden boats, with a handful of instances specifically mentioning the *firilla* type. The decline in use of traditional local boats is clearly seen in the Fishing Vessel Registers retained by the Department of Fisheries and Aquaculture, with only three *firilli* boats being registered in 2014.

Photographic collections and paintings representing local craft dating to the 19th and 20th centuries have also been looked into. The Malta Maritime Museum in Birgu and the National Museum of Fine Arts in Valletta possess a number of iconographic images depicting local boats, some of which have been identified as *firilli*. Some of these images provide information on changes that took place on the shape of the hull, specifically with regards

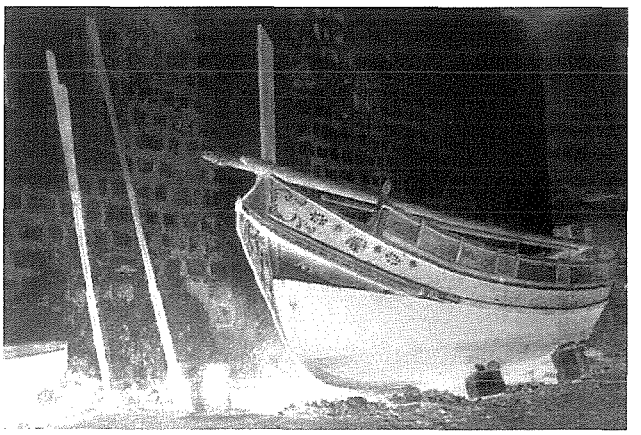

Figure 5. An image of a *firilla*, exhibiting a spur and a raked bow. Image is captioned as follows 'C. R. Jones: A beached Luzzu, (a calotype negative), 1845-6 (Kraus Collection)' (Harker 2000: 8).

to the presence of a spur on the bow and a rounded bow (spoon bow) (Fig. 5). These two features are not seen on examples of *firilli* dating after the twentieth century.

The spur was present on another boat type, called *xprunara* or *sepronara*. In fact the vessel name came from *xprun*, *sperone* or spur which was a sort of triangular wooden element fitted on the cutwater of the vessel. This element was adopted on other local water craft such as the *firilla* and *luzzu* (Muscat 1999, 122). Its function seems to be of a decorative nature.

It is also interesting to note that at the beginning of the nineteenth century the demanding dockyard and harbour activities required a larger labour force, including porters, carriers, coal heavers and other commercial activities (Mallia-Milanes 1988, 95). Fishing within these areas was not possible, therefore fishermen needed to go further afield to fish or change location completely. As previously mentioned, the change in function very likely affected the design of the boat. This possibly resulted in the need to alter the design of the boats in order to withstand rougher sea conditions. The rounded bow would have been altered to a more plumb bow and additional washboards, whether removable or not, would have protected the boat from excess sea spray.

Results

Each one of the documented boats is a unique example of the boat type called *firilla*. The author will be referring to these under the following names: Rowed *firilla*; PTF87 *firilla*; and Regatta *firilla*. The first two examples functioned as fishing boats, whilst the latter boat was used as a racing boat.

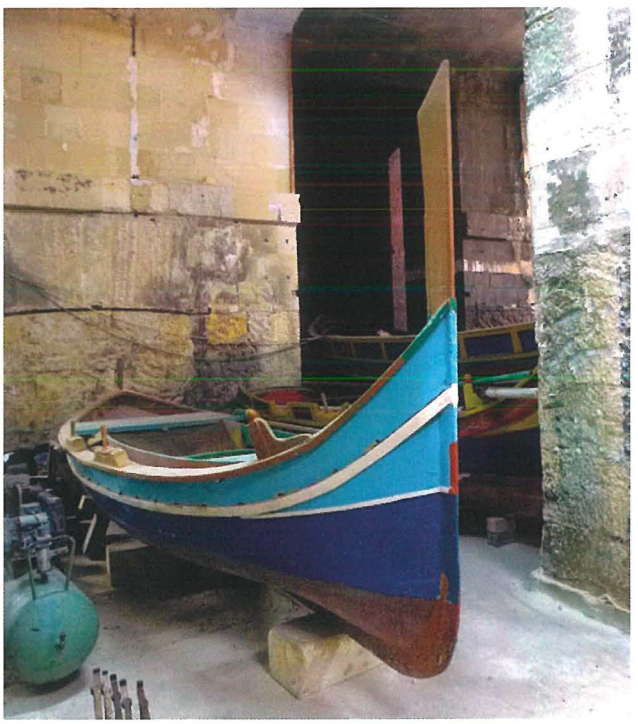

Figure 6. Rowed *firilla* as found in the store at the Maritime Museum (after Said 2014).

General Characteristics

All three boats are double-ended open boats, carvel built, with a tall stempost and a much shorter sternpost. The boats have a straight keel with the posts fixed at 90 degrees to the keel. Overall the boats have a wide hull amidships, with a U-shaped cross-section. The fore and aft ends however are narrow, turning into a V-shape. The sheer line inclines upwards towards the bow, making this end higher than the stern. However, in the regatta *firilla* this inclination is not as steep and does not rise abruptly. They all follow the same construction sequence, referred to as skeleton-based technique, starting with the keel, end posts and apron, followed by the framing system, framing supports, interior elements and ending with the strakes.

Rowed *firilla* (Fig. 6)

This boat is described within museum records as a full size *firilla*, having a length of 17 *palmi* (*palmo* is equivalent to 0.2619 m; see Muscat 1999, 84). As the name implies, the boat was rowed, as there is no evidence for a rudder or sprit rig. The boat was purchased by the Malta Maritime Museum in January 1992, for a small sum of money off a fisherman from Marsaxlokk. Its origin and year of construction are unknown, however it might have been in use as early as the 1880s (*pers. comm.* L. Gauci, Curator of the Malta Maritime Museum, 11.09.13). Originally the *mustaċċ* (triangular part at the bow and stern, often where the oculus is attached) was an ochre colour, corresponding to its provenance, that being Marsaxlokk.

Dimensions

According to the description in the Museum records the boat is 17 *palmi* long, equivalent to 4.4523 m. The description does not specify whether this is the overall length, length between perpendiculars, length of keel or any other possible length dimension. This dimension closely matches the dimensions of the keel, without the forefoot which joins the keel to the posts. Actual measurement of the boat revealed a length between perpendiculars of 5.20 m, a maximum breadth of 1.78 m and depth of 0.60 m.

Wood Used for Construction

Table 1 shows the results observed by a wood conservator. As can be noted, pine was used on most of the hull structure, whilst ash was used for interior elements supporting the hull structure. The use of greenheart, teak and beech were sparely applied to specific elements, which received most wear and tear.

Boat Feature	Wood Genus	Common Name
Keel	*Chlorocardium* sp.	Greenheart
Zokk (forefoot)	*Fraxinus* spp.	Ash
Post Ends	*Tectona* sp.	Teak
Framing System	*Fraxinus* spp.	Ash
Ċinta (rubbing strake)	*Pinus* spp.	Pine
Gunwale	*Fraxinus* spp.	Ash
Sheer Strake	*Pinus* spp.	Pine
Hull Strakes	*Pinus* spp.	Pine
Thwarts	*Pinus* spp.	Pine
Deck Planks	*Pinus* spp.	Pine
Oars	*Fagus* spp.	Beech

Table 1. Wood used for elements making up the rowed firilla (*pers. comm.* J. Aquilina, wood conservator, 30.01.2014).

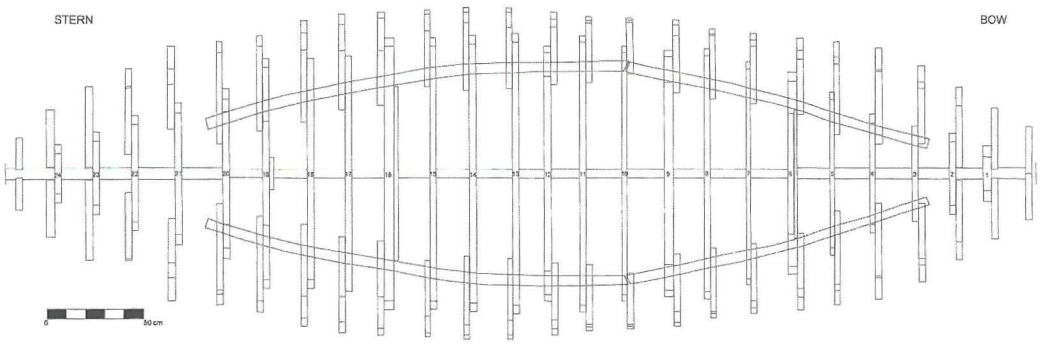

Figure 7. Plan of the framing system of the rowed *firilla* (after Said 2014).

Features

The keel is joined to the posts by means of a forefoot, with hooked scarfs. It measures 8 cm in height and 4 cm wide. An apron sits upon the fore and aft of the keel, accommodating the first and last few frames. There are 24 floor frames (Fig. 7), measuring 2 cm to 3.5 cm sided and 3.5 cm to 7 cm moulded. There are a total of 52 futtocks, divided equally between port and starboard. Of the 26, 24 are found fixed to the floor frames, whilst the last two are found on either end of the boat attached to the apron and referred to as *żengul* (*żniegel* plural). The distance between each frame from front to front ranges from 16 cm to 23 cm, with the narrowest gap located between the central frames. Twenty-six scupper holes are aligned with the 26 futtock frames. The latter keep running up to and through the gunwale, finishing flush with the surface. The gunwale is split into three pieces, joined together by means of Z-scarfs. Five strakes form the hull of the boat, excluding the sheer strake, measuring 1.5 cm thick and 14 cm to 20 cm wide. Features are held together by means of brass nails, with a flattened head or diamond shaped head, riveted brass nails and screw nails. The former are the most common, with a standard measurement of 4 cm in length.

Treatments, Changes and Restoration

The rowed *firilla* has never seen any changes since

Figure 8. PTF87 *firilla* as found in the store at the Maritime Museum (after Said 2014).

it entered the museum collection (*pers. comm.* L. Gauci, 11.09.13). There do not seem to be any repairs carried out on the boat either. The only changes that are visible are the colours painted on the boat and possibly the rowlock found on the aft of the port side.

PTF87 *firilla* (Fig. 8)

The Maritime Museum has no paper record of this boat. It joined the Museum collection in 1995. PTF87 refers to the registration number provided by the Fisheries Department, PTF standing for part-time fisherman. This number is still visible on the washboards. The *mustaċċ* is a bright yellow, reflecting its area of provenance, that being Msida. It was brought over from this town, located on the east coast of Malta, by museum personnel, prior to being scrapped (*pers. comm.* L. Gauci, 8.01.14). Its date of construction is unknown and unfortunately the boat owner is also anonymous. It was used as a fishing vessel, propelled by oar and sail, and later on modified to introduce the engine, which ran on fuel and was sea water cooled. The introduction of the engine to Maltese boats started in the 1920s (Muscat 1999, 84), giving a *terminus post quem* date.

Dimensions

The length overall is 4.80 m with a maximum breadth of 1.84 m (1.77 m at the gunwale) and a depth of 0.78 m.

Wood Used for Construction

Table 2 shows the extensive use of pine wood, whilst ash was only applied for the supporting elements, along with the keel. Teak could only be identified on the post ends.

Boat Feature	Wood Genus	Common Name
Keel	*Fraxinus* spp.	Ash
Żokk (forefoot)	*Fraxinus* spp.	Ash
Post Ends	*Tectona* sp.	Teak
Framing System	*Fraxinus* spp.	Ash
Ċinta (rubbing strake)	*Pinus* spp.	Pine
Gunwale	*Pinus* spp.	Pine
Washboards	*Pinus* spp.	Pine
Hull Strakes	*Pinus* spp.	Pine
Sheer Strake	*Pinus* spp.	Pine
Thwart	*Pinus* spp.	Pine
Deck Planks	*Fraxinus* spp.	Ash
Rowlocks	*Pinus* spp.	Pine
Oars	*Pinus* spp.	Pine
Rudder	*Pinus* spp.	Pine

Table 2. Wood used for elements making up the PTF87 *firilla* (*pers. comm.* J. Aquilina, wood conservator, 30.01.2014).

Features

The keel is made of one straight wooden timber, measuring 8 cm in height and 4 cm wide. The keel is connected to the stempost by means of a forefoot, with two hooked scarfs, whilst an L-shaped element connected the keel to the sternpost, in order to accommodate the propeller. An apron is also present on the inside of the keel, at the fore and aft ends of

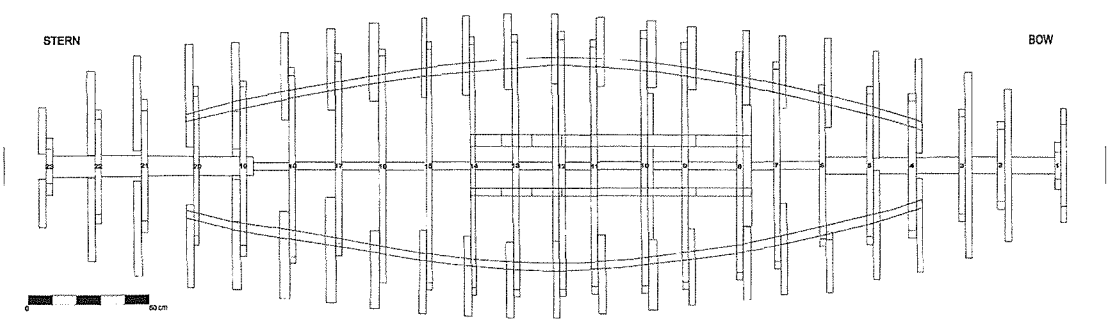

Figure 9. Plan of the framing system of the PTF87 *firilla* (after Said 2014).

Figure 10. Regatta *firilla*, after being brought down from its storage place (after Said 2014).

the boat. There are 23 floor frames and a total of 46 futtock frames (Fig. 9), one on either end of the floor frame. The former measure 2.5 cm to 3 cm sided and 3 cm to 5 cm moulded, whilst the latter measure 2 cm to 4 cm sided and 3 cm to 4 cm moulded. The distance between each frame from front to front ranges from 13.5 cm to 23 cm, the average being 18 cm. The narrowest gap is located between frames nine and ten, and the remaining small gaps are located towards the fore part of the boat. All futtock frames run up and through the gunwale, which is split into three parts and joined together by means of two butt joints and a diagonal joint. A total of 5 strakes make up the hull, excluding the top washboard. The thickness of the planks measure 1.5 cm and varies in width, from 22 cm to 27 cm. The elements are held together by means of brass nails, measuring 4 cm in length, however screw nails are also present but limited in use.

Treatments, Changes and Restoration

No changes have been made to the boat during its storage in the Malta Maritime Museum. However, some changes were definitely made during its lifetime, namely to the engine and the addition of washboards to make the sides higher and reduce water intake. The rowlocks were therefore moved from the original gunwale and attached to the added washboards. However, these seem to have received no strain as there is no depression where the oar would have rubbed. There seems to be a repair on the starboard hull and along the interior side of the hull. Some of the plank seams have been covered over with a white paint filler, or white lead paint. This might have been a later treatment in order to keep water from seeping in.

Regatta *firilla* (Fig. 10)

This boat has *Victoria X* engraved on the sheer strake, likely indicating its dedication to Our Lady of Victory. Although the regatta *firilla* has been assigned a museum number (MM 0047), its fascinating biography has not been recorded. The regatta *firilla* was originally from Senglea, and it took part in the annual regatta race, competing for the Senglea regatta club. It was propelled by four rowers, the method used for steering the boats during the races. The red and yellow colours, which are still visible on the regatta *firilla*, represent the club colours. After it stopped competing, it was placed in the outdoor courtyard at Fort San Lucian in Marsaxlokk, along with a couple of other wooden boats. During the winter of 1989, strong north-easterly winds managed to lift the boats lying out in the courtyard and smash them against the tower, reducing them to fragments. The regatta *firilla*, which was already in a fragile state had little chances of surviving this storm (*pers. comm.* A. Espinosa Rodriquez, Curator of the Malta Maritime Museum at the time of acquisition, 12.08.13).

From the above information we can definitely say that the regatta *firilla* ceased to take part in the annual races prior to 1989. In fact from newspaper records the last two participating *firilli* hailed from Senglea and last took part in the 1957 race (Serracino, Vol. 2, 90). It has been confirmed that the regatta *firilla* at the Museum was one of the last *firilli* to take part in the races (Muscat 1999, 169), and is possibly identified with the *firilla* named *Forti St Mikiel* as seen in the image (Fig. 11) provided by Serracino (1988). This photograph depicts the boat along with its crew of four men after the race of 1922. The name *Victoria X*, is also visible on the sheer strake of the boat, along with the floral decorations and the winged creature found on the fore part of the sheer strake. These match those found on the smashed regatta *firilla* that is now part of the Museum collection.

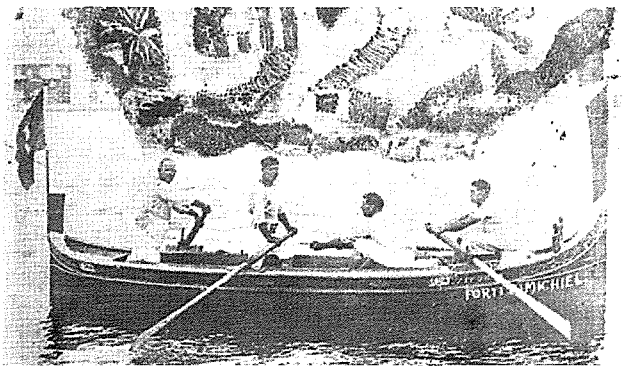

Figure 11. Image present by Serracino captioned as "'Forti San Mikiel', another famous Ferilla from Senglea, with her crew" (Serracino 1988).

Dimensions

The current state of the boat can only provide hypothetical overall dimensions. The length of the keel is 5.50 m, from scarf to scarf. To this, one has to add the length of the forefoot, to get an overall length. According to Muscat (1999, 170) 'the fancy *firilla* or the specially light boat, which was introduced in 1925 had a length of 6.13 m, beam 1.74 m and depth of 0.56 m.'

Wood Used for Construction

A combination of wood types was used to construct this boat (Table 3). Pine wood was only used for the hull planking, whilst ash was again used in the framing system and other retaining elements. Teak was used on both the post end and sheer strake, the latter being finely decorated, and once again, greenheart was specifically used for the keel.

Boat Feature	Wood Genus	Common Name
Keel	*Chlorocardium* sp.	Greenheart
Zokk (forefoot)	*Fraxinus* spp.	Ash
Post Ends	*Tectona* sp.	Teak
Framing System	*Fraxinus* spp.	Ash
Ċinta (rubbing strake)	*Pinus* spp.	Pine
Gunwale	*Fraxinus* spp.	Ash
Sheer Strake	*Tectona* sp.	Teak
Hull Strakes	*Pinus* spp.	Pine

Table 3. Wood used for elements making up the regatta *firilla* (*pers. comm.* J. Aquilina, wood conservator, 30.01.2014).

Features

The existing keel measures 5.50 m in length, 7 cm in height and 3 cm wide (Fig. 12). It is still connected to the stern post by means of a forefoot, with a hooked scarf joining the post to the forefoot and a flat scarf joining the forefoot to the keel. A hooked scarf is present on the fore part of the keel. The apron is also present on the fore and aft part of the inner keel, measuring 4.5 cm sided and 4 cm moulded. The apron accommodated the first four and last six floor frames. There are a total of 28 floor frames and a total of 56 futtock frames, the latter being equally divided between port and starboard sides. From the existing examples of the framing system, measurements range from 2 cm to 3 cm sided and 2.5 cm to 4 cm moulded, with futtock frames all measuring 2 cm sided and 2.5 cm to 3.5 cm moulded. The distance between frames from front to front ranges from 15.5 cm to 23.5 cm, with the narrowest gap being between frames 14 and 15. Like the former two boats, the gunwale is split into three parts, joined by means of a flat scarf. Roman numerals are engraved on the inner side of the gunwale. These are found marking rectangular slots, which retained the futtock frames in place. A total of 6 strakes formed the hull, including the sheer strake, their thickness being 1 cm to 1.2 cm and their width measuring 10 cm to 15 cm. Brass nails are present throughout the boat, as the means of fastening elements together. Caulking is also visible along the edges of some strakes, consisting of twisted cotton which was wedged between seams.

Treatment, Changes and Restoration

A large bulk of this boat still exists, however only a few parts are still in their original position. The stern end of the boat is the best preserved part, along with the keel and to some extent the stempost. The sternpost is still fixed to the keel along with some of the planking and framing system. The port side is in a much better state of preservation than the starboard side. Identifying any changes or restoration activities is impossible, however the boat was definitely constructed for racing and retained this function throughout its lifetime.

Discussion

The characteristics that make up a *firilla* boat have been confirmed and clearly identified. However, the differences between the three studied examples are

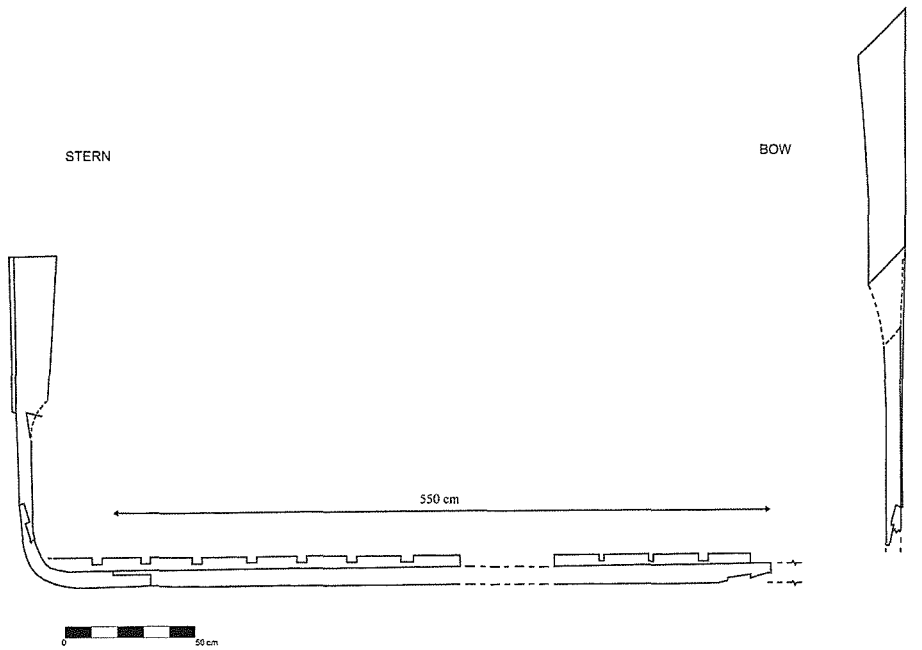

Figure 12. Side elevation of the regatta *firilla* (after Said 2014).

still quite striking. It is hard to define an evolution in these three boats related to the advancement of technology from the use of oars and sail to the instalment of the engine. It is also unlikely that one can date the boats. The closest that could be achieved was from the information available for the regatta *firilla*, whereby historical, oral and archaeological data were combined to provide a wider biography of the boat. It is clear that this boat was constructed specifically to be utilised in races, as clearly seen by the shape, the plumb bow, the low sheer line and slim, shallow hull, and materials used, relatively thin hull planks, providing a light hull and the use of teak for the sheer strake, which was super thin and finely decorated. Teak was and still is an expensive wood, therefore used sparingly for specific parts which would be most prominent. Teak also features on the post ends for all three boats. Greenheart was also used sparingly, as it only features on the keel of the rowed and regatta *firilla*. This is extremely hard to fashion, but resistant to rot and durable in marine environments. These two *firilli* share the same wood type for all the elements making up the boats, with the exception of the sheer strake. The PTF87 also shares the same wood type, with the exception of the keel, made from ash, and the gunwale and oars, made from pine. Ash is not resistant to rot, whilst pine is durable and easy to work, the reason it is utilised to shape the hull strakes. Unfortunately, the use of different wood types is also not a good working base to date the boats, for the simple reason that boat builders often had to work with what they found.

The overall dimensions of the three boats are different, with the longest the regatta *firilla* and the shortest the PTF87 *firilla*. The PTF87 is the beamiest of the three boats, and also the deepest, making it a far more stable boat. The other two boats are relatively shallow boats, with a more faired hull shape. The PTF87 clearly is different from the other two boats. The installation of the engine meant that it could travel further afield in open waters. However, this resulted in the addition of the washboards to reduce the risk of water intake. The sail must have been retained as a backup in case of engine failure. The rowed *firilla* exhibits a plumb bow, yet it was still being rowed. Probably this is an early example displaying the new change from rounded to vertical bow. This boat would still have kept relatively close to the shore as it relied solely on oars. Several photographs dating to the early twentieth century show examples of rowed *firilli* with a plumb bow, within sheltered areas. One particular model of a *firilla* (82 MM/4 (MOD) 6607/8; Malta Maritime Museum) exhibits the plumb bow and is propelled by sails and four oars and dates to c.1920. Such an example would have sailed further away from the coast, taking advantage of our prevailing winds.

As mentioned earlier, increased activity in the harbour areas restricted fishing within these protected areas. Legislation related to fishing was established in order to either restrict fishermen from fishing in certain areas, or to promote fishing away from local shores (Muscat 1999, 80). Apart from this a number of boats accompanying the larger British men-of-war

were being launched in Maltese waters. These boats must have had some form of impact, whether visible or not, on local water craft. Undoubtedly, further research would be necessary to define the boat's evolution and probable influences from incoming water crafts and neighbouring designs.

Acknowledgements

I would like to take this opportunity to thank the staff of the Maritime Archaeology Programme at the University of Southern Denmark, with special thanks to my supervisor Thijs Maarleveld, for his corrections and encouraging remarks which helped me shape the thesis on which this report is based. I would also like to express my gratitude towards my course mates, whose evening dinners, insightful discussions and leisure activities made my stay in Denmark an unforgettable experience. Many thanks to the curators at the Maritime Museum, Vittoriosa, especially L. Gauci, who were always ready to help me with my requirements. I would also like to thank all those individuals who answered my requests for help either with interviews, data collection, analysis, e-mails and literature. Finally I would like to thank my family for supporting me throughout my studies.

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References

Blue, L. 2000. Maritime Ethnography: The Reality of Analogy, in C. Beltrame (ed.) *Proceedings of the Ninth International Symposium on Boat and Ship Archaeology*: 334-338. Venice: Oxbow Books.

Blue, L., E. Kentley, S. Mcgrail & U. Mishra, 1997. The Patia Fishing Boat of Orissa: A Case Study in Ethnoarchaeology, *South Asian Studies* 13: 189-207.

Camenzuli, P. G. 1968. Is-Sengħa Tal-Bini Tad-Dgħajjes F'Malta u F'Għawdex. Unpublished BA thesis, University of Malta.

Christensen, A. E. 1979. *Inshore Craft of Norway*. Greenwich: Conway Maritime Press Ltd.

Farrugia Randon, S. F. 1995. *The Fishing Industry in Malta: Past, Present, Future*. Malta: Pubblikazzjonijiet Indipendenza.

Filgueiras, O. L. 1988. The Traditional Portuguese Boats in the Context of the Settlement Process: A General Survey, in O. L. Filgueiras (ed.) *Fourth International Symposium on Boat and Ship Archaeology*: 375-413, Porto 1985, BAR International Series, Oxford.

Harker, M. 2000. *Photographers of Malta 1840 1990*. Malta: Patrimonju Publishing Ltd.

Hasslöf, O. 1972. The Concept of Living Tradition, in O. Hasslöf, H. Henningsen & A. E. Christensen (eds) *Ships and Shipyards, Sailors and Fishermen: Introduction to Maritime Ethnology*: 20-26. Copenhagen: Copenhagen University Press

Hyttel, F. D. 2011. Digital Recording in Maritime Archaeology. Unpublished MA thesis, University of Southern Denmark.

Mckee, E. 1983. *Working Boats of Britain their shape and purpose*. London: Conway Maritime Press Ltd.

Muscat, J. 1999. *The Dgħajsa and Other Traditional Maltese Boats*. Malta: Patrimonju Publishing Ltd.

Prins A.H.J. 1989. *In Peril on the Sea: Marine Votive Paintings in the Maltese Islands*. Malta: Said International Ltd.

Pulè, C. 2000. *Qxur, Biċċiet, u Opri Tal-Baħar*. Malta: Pubblikazzjonijiet Indipendenza.

Said, S. 2015. The Firilla: A Case-Study of a Maltese Traditional Boat. Unpublished MA thesis, University of Southern Denmark.

Serracino, J. 1988. *L-Istorja Tat-Tiġrija Tal-Vitorja 1900-1988*. Malta: Printwell Ltd.

Vosmer, T. A., R. E. Margariti & A. F. Tilley 1992. *A Survey of Traditional Vessels of the Sultanate of Oman: The Omani Dhow Recording Project Field Research*, Report no. 69. Fremantle: Department of Maritime Archaeology, Western Australian Maritime Museum.

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