

## *Regional responses to fiberglass revolution: The case of Italian and Finnish boatbuilding industry*

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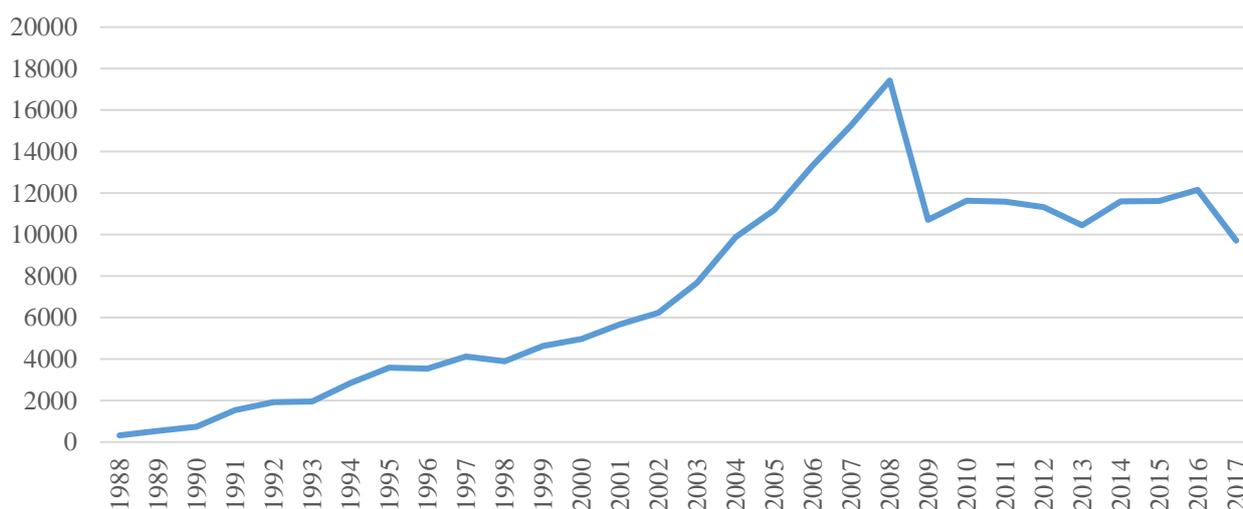
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### **1. Introduction**

The story of boatbuilding industry is an unwritten chapter in business history, even though today the industry is an important one with global exports of roughly ten billion US dollars (Figure 1). The industry has grown significantly since the Second World War and especially after fibreglass (glass reinforced plastic (GRP)) emerged as the major building material of boats. This GRP revolution, in turn, lowered the production costs, enabled serial production, and together with increased free time created fast growing markets for leisure yachts and boats of various kinds. This growth has continued during the last decades: only in 1995 to 2008 (from which we have more reliable figures), the value of world boat and yacht exports grew 5-fold (Figure 1). The business has though, always been cyclical, as can be seen in the deep decline after 2008 recession in Figure 1.<sup>1</sup>

*Figure 1. Value of world boat and yacht exports, 1988 – 2017 (US \$, current prices)*



Source: United Nations Commodity Trade Statistics Database.

<sup>1</sup> See also Glass & Hayward 2001.

There is a vast amount of popular literature dealing with history of motor boating and sailing. These include detailed descriptions of various boat and yacht models<sup>2</sup>, biographies of famous ship designers<sup>3</sup>, and company histories of the most influential boat building firms<sup>4</sup>. Among rare books to describe the history of GRP revolution from industry point of view are more journalistic – though valuable – works such as *Heart of Glass* by Daniel Spurr (2004). The academic literature in the field has by so far concentrated either to chemical/science part of GRP production<sup>5</sup>, and effects of GRP to health of boat builders.<sup>6</sup> Among few academic works that we were able to identify to analyse the industry from business and history point of view are works by Ala-Pöllänen (2006), Blackman (1974), Blundel & Thatcher (2005), Chetty (2004), Chetty & Agndal (2008); Dess (1987), Glass & Hayward (2001), Larsson & Lindström (2014), and Meikle (1995)<sup>7</sup>. These studies mainly analyse boatbuilding industry in national or regional level. Putting this literature together, with complementary source data from magazines and trade journals, interviews, reports by authorities, databases and archives, the aim of this paper is to give an overall picture how GRP technology has affected boatbuilding industry. We will use two important boatbuilding and exporting countries, Italy and Finland, as cases to study this particular industry. Namely, how did GRP revolution change the boatbuilding industry?

In the following, we will first introduce and contextualize Italian and Finnish boatbuilding industry. The third section analyse interaction between increased free time, tourism and boatbuilding industry, while the section 4 focuses on the development of fiberglass technology and its impact on leisure boats' production system. Section 5 describes the development of boatbuilding industry in Italy and Finland and compare two Italian and two Finnish case studies. In conclusions, we aim to conceptualize and contextualize the boatbuilding industry from business history perspective: what does the evolution of this particular line of business offer us to better understand the changes and continuities in businesses?

## **2. Italy and Finland and boatbuilding industry**

This article compares two important boat producing, exporting and consuming countries: Italy and Finland. Though different, both countries had also striking similarities in their development paths in this particular line of industry. Moreover, for both the introduction of GRP technology made a blooming industry for domestic and export markets.

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<sup>2</sup> E.g. Serafini 2003

<sup>3</sup> E.g. Kauhanen 2012

<sup>4</sup> TBA

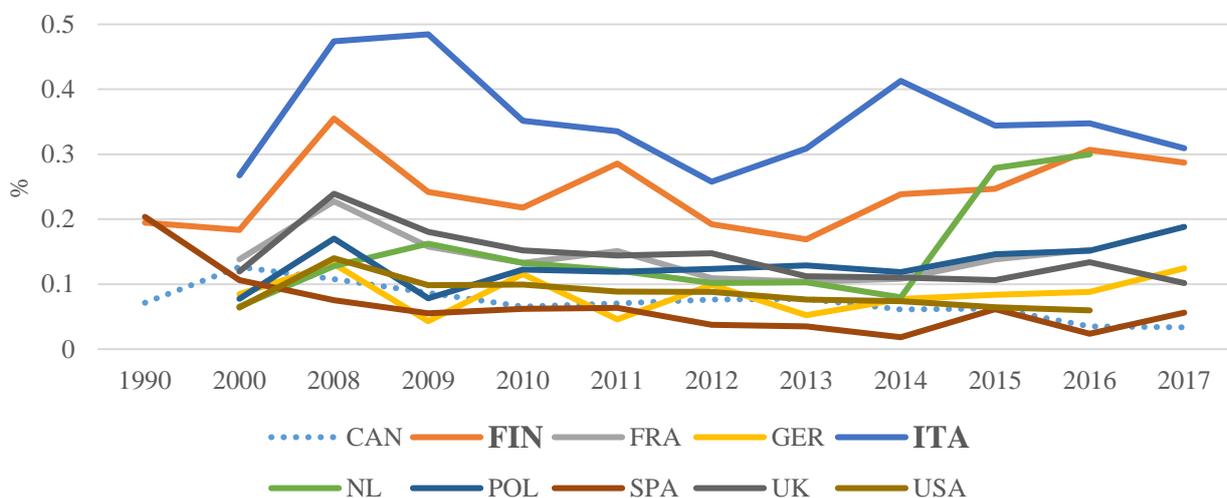
<sup>5</sup> For example, Agarwal & al. 2017; Job 2013; Marsh 2006; Milewski & Rosato 1981

<sup>6</sup> E.g. Ruder & al. 2016.

<sup>7</sup> PLEASE ADD FEW WORDS ABOUT THE CONTENTS OF THESE

Italy and Finland are among the major boat building countries today – and have been since the GRP revolution. From the top-10 boat exporting countries Italy and Finland are the leaders when comparing value of boat exports to total exports, as can be seen in Figure 2. Still though, the shares from all exports are still rather low: between 0.2 to 0.5 per cent from all exports. Moreover, both countries have large domestic markets. In Finnish case it has been estimated that there is a boat for every five Finn in the country; that is, over one million boats. In 2005 there were roughly 600 enterprises operating in the boat business in Finland, employing 2 700 persons and nearly as many indirectly.<sup>8</sup> In Italy .. (...)

Figure 2. Boat and yacht exports from all exports (%), top-ten boat exporting countries, 1990 - 2017



Sources: United Nations Commodity Trade Statistics Database (boat exports) and World Bank (total exports), [<http://databank.worldbank.org/data>]

As Tables 1 and 2 show, Italy was the largest exporter of boats and yachts during the last 25 years – but also one of the main importers with over 17 per cent market share. The Finnish share from world markets is much lower, two per cent, but from Finnish total exports boats made a considerable share as seen in Figure 2. Top-ten exporting countries made up to 80 % of world markets in 1994 – 2017, whilst the share of top-ten importing countries was at the same time roughly 70 %. An interesting fact is that from top-ten exporters altogether 8 are also among the largest importers; thus, these countries also had large markets for boats and yachts. We do not unfortunately, have global data on the size of markets as a whole. From top-10 exporting countries, only Finland and Poland are not among the top-10 boat importers.

<sup>8</sup> Räsänen & al. 2005.

*Table 1. Top-10 export countries of boats and yachts (combined shares 1994 – 2017, %)*

Country	%
ITA	17.3
USA	14.6
GER	10.1
FRA	9.6
UK	8.9
NL	6.7
CAN	4.8
SPA	3.9
FIN	2.2
POL	2.0
Top-10 share from world total	80.1

Source: United Nations Commodity Trade Statistics Database.

*Table 2. Top-10 import countries of boats and yachts (combined shares 1994 – 2017, %)*

Country	%
USA	17.7
SPA	9.5
FRA	8.0
CAN	6.7
ITA	6.4
UK	5.6
GER	4.5
AUS	3.9
NOR	3.2
NL	3.2
Top-10 share from world total	68.6

Source: United Nations Commodity Trade Statistics Database

There are three categories of vessels: recreational boats, merchant or fishing or passenger ships and military vessels. Shipbuilding production has traditionally focussed on passenger and military ships, with recreational vessels remaining in the margins until the second half of the twentieth century. The same can be said also on academic interest towards boatbuilding industries: there hardly are any studies focussing on this industry in business or in maritime history. These yachts were generally built in small shipyards along the coast by the same shipwright who built the fishing and merchant ships. The number of yachts and boats built was small, they were hand-made and customized – and only well-off could afford them.<sup>9</sup>

<sup>9</sup> Marsh 2006

Until the 1960s recreational boatbuilding was a craft industry both in Italy, Finland, and elsewhere, based on the wood-working skills transmitted from generation to generation: a business model dating back to Medieval times – or even earlier. Towns near the port or lakes each had their own craftsmen producing fishing boats or small vessels for the local market. In the second half of the 19th century when recreational yachting stimulated a new demand for leisure sailing boats, boat builders began catering to this kind of customers. The first recreational motorboats were built at the beginning of the 20th century, yet despite the evolution of yachting and motorboat racing, the business model didn't begin to change until the second half of the 20th century, when yachting became less elitist. In the meantime, two key technological developments had taken place: the wooden hulls were replaced with moulded fibre-reinforced plastic, and consequently, serial production was introduced. These marked emergence of boat and yacht production within a scale that was not possible for boats made out of wood.

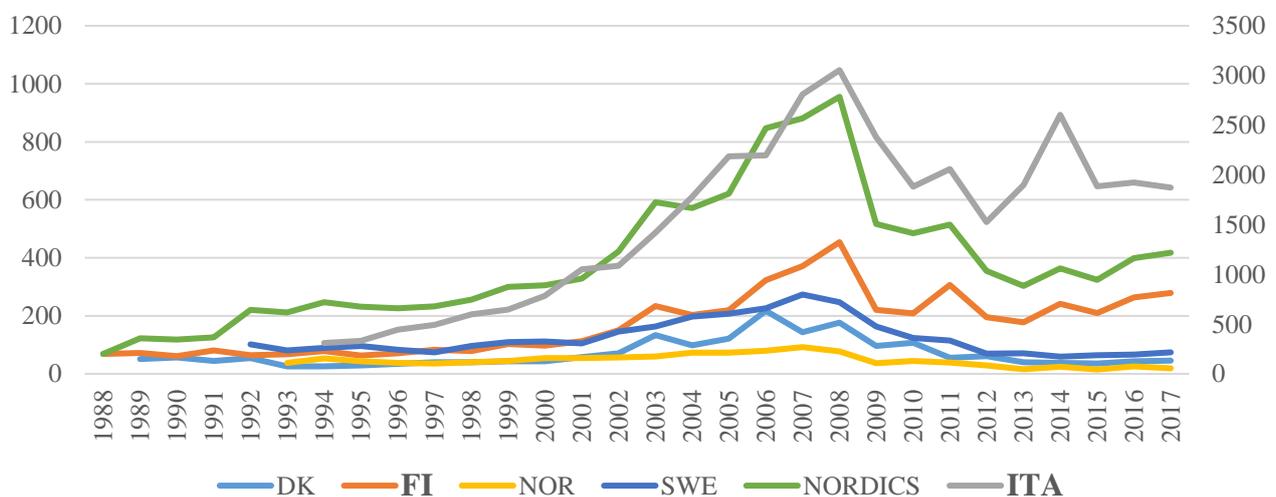
In Italy, this new direction allowed new enterprises and a new type of entrepreneurs who came from a completely different cultural and training background to emerge. The age of shipwrights had effectively come to an end, as these new entrepreneurs generally were not tied to the world of shipbuilding but were tradesmen. Also in Finland, the early entrepreneurs experimenting boatbuilding by using GRP usually came outside the traditional boat builders: strong path dependence in older techniques delayed the change. Moreover, various boating magazines were rather negative towards fibreglass constructions. Therefore, it took roughly two decades before the superiority of new material made breakthrough in boatbuilding industry – and also created new, fast growing markets.

The availability of fiberglass spurred new nautical districts into existence (for example between Forlì and Pesaro on the Adriatic Coast in Italy), which produced and assembled components. In Finland, on the contrary, the boat building districts were the same as before, though entrepreneurs were most cases the new ones. However, labour force hired in Finnish case to new boatbuilding firms in most of the cases did have earlier experience from wooden boat building. Design became a strategic element and boatbuilding turned into one of the most important “Made in Italy” and “Made in Finland” industries – even though in Finnish case the first boat designers were usually hired from abroad, especially from Sweden and US. As the culture based on design and image grew stronger, Italian boat builders shifted towards luxury production, whilst in Finland the focus was on the low cost rowing and motor boats. However, Finnish boatbuilding was known abroad especially from its few luxury brands both in sailing and motor boat segments. The low cost production of “boats for people”, that had initially been very successful, started to decline in Italy during the 1990s and did not survive the 2008 crisis. In Finland, a number of boatbuilding companies vanished already during

the 1990s depression, and many have had difficulties since 2008 – only in 2018 some known brands (such as Siltala Yachts/Nauticat) have closed their operations.

Over the long run, the fibreglass revolution in Italy created a legacy of several large enterprises such as the Ferretti group (bought by a Chinese conglomerate in 2012), a variety of small enterprises specialized in high quality products (ex. Il Cantiere del Pardo) and many companies that export intermediate products. In Finland internationally most known brands are probably Nautor (Swan Yachts) that is nowadays owned by Italian Leonardo Ferragamolle, Baltic Yachts, Bella Boats, and Finn-Marin (with e.g. Grandezza boats). The fibreglass revolution also affected the location of the shipyards, which had traditionally been located in Italy along the Tyrrhenian Coast. The rise of fibreglass production allowed the Adriatic Coast to enter the game and many successful enterprises were set up. In Finnish case, in turn, the old Ostrobothnian region that was noted from it's shipbuilding already during the 16<sup>th</sup> century gained more importance in boatbuilding after GRP revolution. However, a major regional change in Finland was that industry scale boatbuilding emerged also in inland lake districts, whereas before most of the “industrial” boatbuilding had concentrated mainly to coastal areas.

Figure 3. Boat and Yacht exports: Italy (right axis) and Nordic countries (left axis), million US dollars, current prices



Source: United Nations Commodity Trade Statistics Database

Today, Italy is the most important yacht and boat exporter in the world. (Figures 2 and 3) Its market share from global exports is roughly three times larger than the share of combined Nordic exports – even though there are recognisable brands in the industry both in Finland, Denmark, Norway, and in Sweden. From Nordic countries, Finland has been during the past decades the most important producer and exporter of boats – though in Sweden especially the boat building has traditionally been

dominated by domestic markets. Thus, the size of boatbuilding industry in Sweden is at least as large that the one in Finland – especially if many related activities are taken into account.

### 3. Increased free time, mass tourist revolution and leisure boat demand

“No-one needs a boat...” (Bill Shaw, Pearson)

“...but millions of people want them” (Daniel Spurr)

In the beginning, yachting was an experience in its own right. It could be considered as a niche market centred on people with considerable funds who liked sailing and designing their own vessels. Throughout the 19<sup>th</sup> century, this sport symbolised an exclusive and international aristocracy; an image that was partially maintained during the 20<sup>th</sup> century when entrepreneurs, lawyers and the Nouveau riche became the new ambassadors of yachting and motor-boating. Consequently, a part from the production of crafts and small boats, it was a restricted and high quality product market.<sup>10</sup>

The word regatta was first used in 1315 to describe gondola races in Venice<sup>11</sup>, though Italy has not traditionally played a significant role in the world of yachting<sup>12</sup>. The first evidence of a regatta dates back to 1850<sup>13</sup>, and the first yacht clubs were set up on Lake Maggiore (also called Lake Verbano) and Lake Como, respectively in 1858 and 1872. By the beginning of the 20<sup>th</sup> century the sea had taken the lead over lake areas and of the 46 Italian nautical clubs in 1914, 29 of them were based on the Tyrrhenian Coast ( ??? ), 9 on the Adriatic Coast (1 in Trieste, 4 in Venice, 1 in Bari and 2 in Brindisi)<sup>14</sup> while only 8 (???) were near lakes. It seems that English lords had a hand in developing the sport of yachting in Italy<sup>15</sup>: from the poets Percy Bysshe Shelley, who died in an accident involving his sailboat on the Tyrrhenian Sea in 1822, and Lord George Gordon Byron to the boat-owner Fred Brown and Yeats Brown (English Consul), who sailed on the Italian sea<sup>16</sup>.

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<sup>10</sup> See e.g. Spurr 2004, p. 110.

<sup>11</sup> Treccani, Enciclopedia, Regata

<sup>12</sup> It seems that, in England, yachts became vessels of pleasure rather than of State, during the reign of Charles II who organised the first yacht race. The Dutch had already organized regattas and naval sham flights with yachts even before that date. A Summary of Yachting History, *The Lotus Magazine*, Vol. 5, No. 8 (May, 1914), pp. 505-512

<sup>13</sup>“Lario 20 August

<sup>14</sup> Malatesta, *Le élite e la vela*, 2001; Piccinno, Zanini *The development of pleasure boating*, 2010)

<sup>15</sup> Early supporters of the Lake Maggiore yacht club were: Elisabetta of Sassonia, Massimo d'Azeglio, Count Vitaliano Borromeo, Count Galeazzo Visconti and the English Ambassador, Sir James Hudson. The bylaws stated: "This society aims at organizing regattas on Lake Maggiore [...] and stimulating tourists to build boats, improving navigation on the lake and training boaters". *L'industria come continuazione della politica: la cantieristica italiana ...* Di Paolo Fragiaco

Although yachting was a past time for the wealthy and therefore not widely spread, it created an increased demand for new boats. For instance, in 1899 the Verbano Yacht Club and the Regate Club Lariano (based on Lake Maggiore) launched an international competition to construct the eight boats they needed for the sailing school. The winner (of the 27 participants from all over Europe) was an engineer from Venice, Angelo Meloncini. His project design was so well-received that 27 yacht club members decided to buy that model of boat<sup>17</sup>.

In Finland boating and sailing was for centuries a part of daily living for the most: most of the population lived along the sea coastline, rivers and lakes, with poor landward connections. Thus, small boats were used to transport people and goods, and for fishing. Using boats for recreational use, however, is much later phenomena both in Finland as in other Nordic countries. Upper echelon of the society had recreational yachts early on, witnessed for example, in the drawings of famous Swedish naval architect Fredrik Henrik af Chapman in the mid-18<sup>th</sup> century (PICTURE). However, it was not until the mid-19<sup>th</sup> century when the first yacht clubs were established to the coastal towns (Pori 1856, Helsinki 1861), and the first lakeside yacht club dates back to 1894 Jyväskylä. Though most of the active members in these clubs were more or less elite of these towns, also other kind of clubs were established: Turku Workers Association Sailing Club was founded in 1896. A number of similar type of clubs that had members from the working class, mainly using self-made, relatively cheap sailing and motor vessels, followed this club. A peculiar fact is that when Finland got independence (1917), the model for the flag of the new country was taken from a yacht club: thus, the blue-cross/white flag of Finland was originally the flag of a Finnish yacht club NJK. (PICTURE) First sailing regattas emerged simultaneously with yacht clubs during the mid-19<sup>th</sup> Century. Finnish sailors also actively participated regattas organized in Sweden from the 1880s onwards.<sup>18</sup>

Fishing, in turn, has always played an important role for most of the Finns during their free time; thus, rowing boats (and later motorised vessels) were and still are very common. Thus, there hardly is a family in Finland that does not either own, or have otherwise an easy access to a boat. Nevertheless, it was not until after the Second World War when sailing and motor boating became truly “democratized”, as it was called in a Finnish sailing magazine at the time. The economy was in ruins after the war and therefore, even the rich did not have possibilities to build expensive yachts. Small dinghies such as Vikla and Lightning grew popular; they were first imported to Finland but quite soon rather massive self-made production of these models started. Costs of making such a boat was only roughly one thousand euros in today’s value. A bit larger sailing vessels that were used besides in racing but also in family sailing were also most often self-made (such as Hai and Nordic

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<sup>17</sup> Rivista nautica 3 March 1899

<sup>18</sup> Leino & al. 2007, p. 10; Salanterä 2017, pp.12-14/Nautica

Folkbåt).<sup>19</sup> Thus, the “democratization” of boating started in Finnish case already before the GRP revolution. However, GRP gave even to larger audience an easy and affordable access to sailing and motor boating – and without time consuming building of boats.

Whether it was a high-society businessman or a farmer with his or her rowing boat, a similar feature for both in the late 19<sup>th</sup> and early 20<sup>th</sup> century was that the boats were in most cases built in Finland. There were hardly any imports of recreational boats of any kinds to Finland before the GRP revolution. The reason is simple: timber was easily and cheaply available, and there was craftsmanship to build these boats. Thus, these vessels were locally made from local timber – in practise, every man had to be able to build his boat. This tradition went further for building seagoing vessels and even merchant ships: up until the late 19<sup>th</sup> century many of even the largest sailing vessels were built by local agrarian people during the winter time. This, in turn, created a strong tradition for boatbuilding, that to certain extend still exists. Turning this wood-building tradition to GRP production was the key for success to those companies that managed to do it.

On the contrary, in 1902-3 about half of yachts registered by Italian owners had been built abroad, showing Italy had the lowest domestic production, with respect to demand, of the countries listed in the Lloyd’s Yacht Register. While Italian production capability was unable to satisfy its domestic market, the situation was quite different in Norway and Sweden where more people were yachting and more shipyards were building recreational vessels, allowing these countries to provide 83% of domestic demand<sup>20</sup>. Thus, Sweden and Norway had similar, local tradition of building boats as Finland had – though Finnish yachts were not registered to Lloyd’s as country was a part of Russia at the time. (??)

At the turn of the 20<sup>th</sup> century a new nautical activity emerged: motor-boating. By 1907 a large number of small crafts had been fitted with internal combustion engines using various fuels such as petrol, refined oils and heavy hydrocarbon oils<sup>21</sup>. In 1910 the Lloyd’s Register issued rules for petrol and paraffin engines and listed 3,000 yachts fitted with such in the British and American Yachts Registers. According to Lloyd’s, the earliest sea-going vessel, other than small crafts, to be fitted with heavy oil engines, was the Italian twin screw vessel “Romagna”, built in 1910 by the Cantieri Navali Riuniti, in Ancona. The engine was constructed by the Messrs Sulzer of Winterthur Brothers. This marked the beginning of a new recreational activity: nautical races.

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<sup>19</sup> Leino & al. 2007, pp. 26-27, 122-143..

<sup>20</sup> The Yacht Register 1902-3 listed 139 yachts with an Italian owner and 73 yachts produced in Italian yards. For Sweden and Norway the data were respectively 347 and 303 for a percentage of 83%.

<sup>21</sup> Annals of Lloyds register, 1934

The First World War halted the progress of motorboat innovation and gave way to the more established technologies required for military ships. Therefore, motorboats rose up in the 1920s. In Italy motorboats spread quickly and became one of the symbols of Futurism, the artistic movement aimed at expressing the energetic, dynamic quality of contemporary life as embodied in the motion and force of modern machinery. In addition, members of the Fascist government liked being photographed driving sport cars and motorboats as well as navigating airplanes. Cruises and Races<sup>22</sup> brought motorboats to the front pages of national newspapers and helped define a new imaginary for the seaside and lake destinations.

In 1928 the first Italian Boat Show took place in Milan, where both sail and motor vessels were displayed. Since its origin, the Show included small boats, which is evidence that boat producers were attempting to increase their clientele to include the middle class<sup>23</sup> by reducing production costs. However, despite the allure of speed and the diffusion of yachting along the Italian coastline, nautical sports continued to be an exclusive experience available only to the well off.

As sailing yachts also motor boats were mainly built in domestic work-shops in Finland. In Finnish case motor boats built and used were in most cases rather small, and used rather outboard engines than internal combustion engines. Imports of motorized boats emerged really only after GRP was introduced. Since GRP, Finnish motor boat industry has mainly concentrated to small and medium sized vessels that are especially practical in Finnish “thousands” shallow lakes, but are today also the key element in Finnish boat industry and boat exports. Also luxury motor boats were built quite early on: witnessed e.g. in the motor boat built to the first president of Finland in 1921 by Finnish boat building company Andree & Rosenqvist. Since then it has been a tradition to order boats for president from domestic boat builders – the one that is in use today is number 8. Most of these vessels use outboard engines; these engines, in turn, have been imported to the country.

In Italy, middle class holiday-makers at the seaside had to settle for boat trips organized by fishermen and boat-owners. The early years of the 20th century saw fishing and merchant vessels being used for recreational trips during the summer as seen in this photographic evidence.<sup>24</sup> Daily boat trips for tourists provided an additional source of income for the local community.

After the Second World War, when mass tourism developed and millions of Europeans began spending their holidays on the Mediterranean Coast, boat trips were a more regular occurrence, which

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<sup>22</sup> The first motor boat gathering was organized in 1908 on the Po river. *Prima adunata nautica*, *Corriere della sera* 1908, 13th September. Then in 1911 the first stage race was organized from Venice to Rome ( *Premiato il vincitore*, 27 July 2011, *Corriere della Sera*), and many other competitions (*Il motoscafo Eolo affondato*, 29 January 1911)

<sup>23</sup> 7th Aprile 1935, *Corriere della Sera*

<sup>24</sup>

stimulated the demand for vessels outfitted for daily cruises. Mass tourism also gave people the opportunity to discover the world of nautical activities. The Marina at many seaside resorts with its hundreds of vessels of all types and sizes became a favourite spot for evening walks. At this point, middle class families started to dream of yachts and motorboats.

The activities of pleasure sailing and motor boating took off at different speeds in different countries. For instance in France the middle class was already included in this market in the mid-1970s as they sailed along the coast and rivers: boat owners included white collar workers (16%) and labourers (13%)<sup>25</sup>. In Norway the pleasure boat market was even more inclusive where one fifth of families owned a boat<sup>26</sup>. In early 2000s Finland 14 % of families owned a motorized boat or sailing vessel; even more had access to rowing boat.<sup>27</sup> Boating was long standing local tradition and was the most popular sport after skiing. On the contrary, in the Federal Republic of Germany, there was still “a touch of exclusiveness” in a sport like boating (similar to tennis and horse riding). However, by the mid-1970s working class people also tended towards wanting to want to buy a boat.<sup>28</sup> In Finland, one boat-type alone made a difference in sailing yachts: that was H-boat designed by Hans Groop and introduced in Helsinki boat show in 1968. The price of this GRP hulled, relatively small but fast boat was roughly half to similar made from wood. The boat gained immediately success in Finland, and also abroad. H-boat is today the most sold keelboat in Europe with over 5 000 boats produced.<sup>29</sup> This model was popular in the 1970s – and it still is, as the boat is suitable both for family cruising and racing. However, in total volumes rowing and motor boats were far more important in Finnish GRP revolution. Moreover, the most voluminous vessels built in Finland are aluminium-hulled Buster motor boats, with no more than 125,000 boats sold worldwide from 1976.<sup>30</sup>

Italy was more similar to Germany than France, Norway, or Finland. In the mid-1960s “Yachting [was] not a pastime of the people”, stated the *Corriere della Sera* in an article about the 1964 Milano Boat Show. “Only a few thousand vessels float on our waters. They number fewer than the low number of cars you can find in the smallest provincial town .... People erroneously think that recreational boating only involves massive boats, the ones with an impressive size and astonishing price. However, this kind of boat is made to order, which is as expensive as the customer desires.

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<sup>25</sup> Glasgow University Archive, UGD20586 1977-1979, Correspondence with British Overseas Trade Board, Market Report: France, 15 September 1975

<sup>26</sup> Glasgow University Archive, UGD20586 1977-1979, Correspondence with British Overseas Trade Board, Market Report: Norway,

<sup>27</sup> Räsänen & al. 2005, p. 15.

<sup>28</sup> Glasgow University Archive, UGD20586 1977-1979, Correspondence with British Overseas Trade Board, Market Report: Federal Republic of Germany

<sup>29</sup> Kauhanen 2012, pp. 55, 65.

<sup>30</sup> <https://www.buster.fi/> [cited August 7, 2018]

Who cares about the average man fond of Sunday morning fishing or the small family at the seaside who would like to take a little boat ride?<sup>31</sup>”

Eight years later, the same newspaper, *il Corriere della Sera*, during the Genova Boat Show provides evidence of the increasing popularity of recreational boating with the headline: “The boat for everybody”. By the end of the 1970s the transformation of yachting and boating from an elitist to a popular pastime was complete. The price of the boat was not the only problem to overcome; there were also the Marina fees. At that time, in Italy, Marina services were very expensive regardless of boat size. The most important Marinas focused on large yachts and provided a variety of services consequently their fees were high. The owners of boats under six meters usually needed only basic services such as floating docks and slipways and were asking for cheaper solutions<sup>32</sup>. In Finland, the marina fees have not been a problem as there is vast amount of coastal areas at sea and lakes when compared to number of population. Only in big towns such as Helsinki the fees have been subject of criticism for decades.

At the international level, the “democratization of yachting was supported by ICOMIA (International Council of Marine Industry Associations), which in 1978 launched the “European boating family of the year” involving the national Federation<sup>33</sup>. Each country had to select a national winner then an international Jury would choose the European winner.<sup>34</sup> This campaign aimed at changing the public image of yachting from an exclusive sport for well off people to an inclusive family past time. In the UK it was followed by the “owned a boat get afloat” campaign promoting boating as the way to fulfil leisure time ambitions such as quieter beaches for the family; freedom from doorbells and telephones, water-skiing and so on.<sup>35</sup>

During the 1970s Italian boat-builders began producing a growing percentage of small boats in order to cater to that middle class which was discovering yachting and motor boating. The new strategy was mirrored in the increasing number of boats up to six meters on display at the Genova Boat Show: 45% in 1976, 54% in 1977, and 64% in 1978.<sup>36</sup> As said, in the Finnish case the focus in production has traditionally been in the smaller craft. From all boats in Finland roughly one-third in 2005 and 2016 were small rowing boats, and another third/fourth from boats were motorboats having outboard engine with less than 20 horse power. Sailing yachts and large motor boats made only roughly one-

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<sup>31</sup> Genova\_ la barca per tutti, 30 January 1972, *Corriere della Sera*

<sup>32</sup> *Corriere della Sera* 16<sup>th</sup> October 1976 and 21<sup>st</sup> October 1976

<sup>33</sup> *Icomia Newsletter* 1 (5) 1978

<sup>34</sup> In Italy the winner was the family Giuseppe la Ferla, *Corriere della Sera* 15th October 1978.

<sup>35</sup> Glasgow University Archive, UGD205622, 1977-1978 Shio & Boat Builder Federation, SBBNF, Publicity Information President's Report and Notice of AGM, 1979-80

<sup>36</sup> *Corriere della Sera*, 15<sup>th</sup> October 1978

fifth from all boats. This is also shown in production figures: in 2006 to 2015 roughly 50% from all boats built in Finland were under six meters long.<sup>37</sup>

In conclusion, the last two decades of the 20th century saw a new more popular market niche emerge that was based on lower price family boats even in the countries where yachting maintained its aristocratic feel for a longer period. Luxury production, however, continued to play a pivotal role both in Italian and Finnish boat building industry; though it was far more important in Italy. However, there has been also a change in using and owning the boats since the 1980s. Owning a boat is declining in western countries, as families tend to participate in various leisure-time activities – and will not to be bound to boat alone. This has in turn, increased the demand for charter business in Mediterranean and Caribbean especially. Though the costs of owning a boat today is only a fraction of costs of the early 20<sup>th</sup> century wood-hulled vessels, it is still costly; especially when adding the marina costs in the most popular ports. Also, the prices of new boats have risen more rapidly than, for example, prices of cars: in 1987 to 1997, according to David Spurr, the price of cars in US rose roughly 22%, whilst the price of cruisers and outboard boats rose 51%.<sup>38</sup>

#### **4. The fibreglass revolution and its impact on leisure boats' production**

Glass Fibre Reinforced Plastic (GRP) revolutionized number of industries, boat industry in particular. Today, as George Marsh (2006, p. 18) notes, “there is scarcely a type of vessel, from the humblest canoe right up to warships and fast catamaran ferries, that is not built in GRP”<sup>39</sup>. The revolution started, like most of revolutions do, with small steps back in 1930s, when different approaches were made to strengthen boats made from plywood by introducing various plastic resins.<sup>40</sup> These were though, more or less failed due to the “brittle” nature of plastic at the time. Fibreglass, in turn, was discovered by an accident: Owens glass company accidentally directed a jet of compressed air at a stream of molten glass and produced fibres.<sup>41</sup> The combination of polyester innovated by DuPont and glass fibre together created a composite structure which made the revolution possible.

Moreover, as in many other technological innovations, Second World War marked a turning point also for GRP: US Navy ordered small vessels and other products made from GRP.<sup>42</sup> Also in Finland

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<sup>37</sup> Räsänen & al. 2005; Askola & al. 2017.

<sup>38</sup> Spurr 2004, 345-346.

<sup>39</sup> Marsh 2006, p. 18

<sup>40</sup> Spurr 2004, p. 20.

<sup>41</sup> Marsh 2006; Spurr 2004, pp. 26-27.

<sup>42</sup> Spurr 2004, pp. 18-19; Ala-Pöllänen 2006, p. 73

the first GRP boats were made for military use in the early 1950s.<sup>43</sup> The first dinghy was built in US by using GRP already in 1942<sup>44</sup> and thousands of small GRP boats and surfboards were by the turn of the 1950s. Among the first fibreglass yachts was the *Arion*, a 42 feet ketch, designed by famous American boatbuilder Herreshoff in 1951<sup>45</sup>. US was paving the way with the new technology, though European production emerged already during the early 1950s. During the Second World War Germans already developed technologies to build boats out from plastics, but the breakthroughs were made in US during the 1940s and 1950s. In France and in England the GRP technology was taken to use in boat building in the early 1950s. European boatbuilding companies started to export to US markets in large scale during the 1960s; the Dutch boat builders were paving the way, soon to followed by British and Nordic companies.<sup>46</sup>

Though there were experiments to make also other products by using GRP, such as cars, the boatbuilding sector became by the 1960s the most important user of fiberglass.<sup>47</sup> The first fiberglass boats were dinghies and outboard-powered runabouts, and quite soon also sailboats. Fiberglass suited well to “mould the compound curves of sailboat hulls”<sup>48</sup>. Flat bottom motorboat hulls, in turn, were still more easy to build from wood – thus, the change to GRP in motorboats occurred later.

In the late 1950s New York boat show roughly one third of boats were built from GRP. But the tide was turning: in 1962 in the same boat show 45 per cent of boats built from glass fibre. In same year in Stockholm boat show the figure was 47 per cent respectively.<sup>49</sup> In US the economic growth and increased free time, together with declining costs of boating due to the GRP revolution increased the number of boats dramatically already in the 1950s: the number of boats doubled during the decade from 3.5 to 7 million, by 1970 there were already over 8 million, by 1990 nearly 16 million, and by 2000 roughly 20 million boats in US. Most of these were small powerboats with outboards.<sup>50</sup>

Still however, it was the early 1960s marked the turning point in boatbuilding and boat market, though it still took roughly ten years until the majority of the boats built and sold were made from GRP. Indeed, it was not until the 1960s and 1970s, when the mass-production of fibreglass reinforced boats and yachts really emerged. In US the price tag of a small outboard with trailer and

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<sup>43</sup> Ala-Pöllänen 2006; Kauhanen 2012.

<sup>44</sup> Spurr 2004, pp. 34-35.

<sup>45</sup> Spurr 2004, pp. 87-88.

<sup>46</sup> Spurr 2004, pp. 123-125, 177,191-193.

<sup>47</sup> Spurr 2004, pp. 54-57; 95-98; Marsh 2006.

<sup>48</sup> Spurr 2004, p. 112.

<sup>49</sup> Ala-Pöllänen 2006, p. 88.

<sup>50</sup> Spurr 2004, pp. 150, 162, 251.

motor was roughly the same as a small sized car in the 1960s; thus, boats were now in reach of many middle-class families. In 1967 roughly 300,000 powerboats and 28,000 sailboats were sold in US, whereas these numbers were 450,000 and 120,000 in 1973-74 respectively. Thereafter, oil crises wiped out the markets for several years, though there was volatility already before: in the late 1960s US boating market crashed due overproduction and poor-quality boats. Oil crises hit especially powerboats, and turned the tide towards sailing. In US luxury tax in the early 1991 together with Persian Gulf crises radically lowered the numbers of boats built: only 8,700 sailing vessels were built at that year.<sup>51</sup> Also in other countries there have been attempts to tax boating by referring to its “aristocratic” and luxurious past. In Finland, for example, the right wing populist party-leader and minister Timo Soini stated in 2016 that “pleasure schooners” of rich out to be taxed and a governmental proposal followed his line of thought. This proposal did not, however, gain much support, as there are hardly any stereotypical rich sailors in the country, but rather middle classed families with old sailing and motor boats that were the ones to be taxed. Therefore, the government withdrew the proposition.

Building costs of one-off GRP boat was about the same as boat made from wood. The difference was, however, the possibility to make boats in series by using same moulds: this mass production lowered the production costs significantly. First serial production yacht was built already in 1957. This first serial production yacht designed by a known company from the wood boat era, Sparkman & Stephens (S&S), which was for the first decades of GRP presumably the most important yacht design firm.<sup>52</sup> The first larger scale production yacht was a 25 footer, with type name New Horizon. It was a S&S design first launched in 1957. Altogether over 120 boats of this type were built in the 1950s and 1960s in US.<sup>53</sup>

The entry cost to early GRP business were low: as Marsh has put, you only need a man, bucket and brush. This meant that there were a large number of new entrants to the industry during the 1950s and 1960s. As Marsh notes, though “There could hardly be a greater contrast than between the ‘bucket and brush’ era of the 1950s and the leading edge of marine composite construction today”.<sup>54</sup> GRP proved to be durable: most of the fibreglass boats that have ever been made have survived to this day. This owes something to the fact that early boats were somewhat over engineered. The large second-hand markets of boats and yachts today are among the most dubious challenges for boatbuilding companies.

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<sup>51</sup> Spurr 2004, pp. 251, 343-344.

<sup>52</sup> Marsh 2006; Sprurr 2004, p. 108-110; 121-122.

<sup>53</sup> Spurr 2004, pp. 121-123.

<sup>54</sup> Marsh 2006, p. 19

New technologies emerged throughout the 1960s and 1990s, as it has been the case in the early 2000s. GRP forms the basis for the industry, but new innovations such as sandwich construction, Kevlar, vinyl, epoxy, and most recently carbon fibres have developed the field further. Moreover, the engines have developed significantly both in terms of power, fuel efficiency and size.<sup>55</sup> Sails were made still in the 1930s mainly from cotton, but old materials were replaced from the 1950s onwards with nylon and other synthetic fabrics such as terylene, dacron, rayon and carbon fiber.<sup>56</sup>

## **5. The impact on the Italian and Finnish production systems**

### **5.1 Italian boatbuilding before mass tourism and fibreglass revolution**

Despite long standing traditions dating back to the middle ages<sup>57</sup>, Italy has never played a pivotal role in shipbuilding. At the time of the Unification of Italy, shipbuilding and boatbuilding enterprises operated in many port cities as well as in the lake districts. A testimony of its importance, can be found in the Lloyd's Register decision to appoint surveyors to Trieste (though it remained part of the Austro-Hungarian Empire until 1918), Ancona and Venice in 1870 (on the Adriatic Coast) and Genoa (on the Tyrrhenian Coast) in 1872. In 1872 Mr. Waymouth visited Genoa on behalf of the Lloyd's Register and reported his comments on the vessel building there. During his inspection he found "a large quantity of shipbuilding in progress at that port" such as he recommended the Surveyors of the London staff be provided with a local Surveyor. According to Waymouth "wood and even iron shipbuilding – but especially the former- was in an active condition at the Italian ports. The materials for wood ship construction were both good and abundant, but the system of fastening was defective. It was extremely necessary, therefore, that the supervision of a Surveyor trained in the English practice should be given in the application of the Society's Rules in the Italian and Austrian ports.<sup>58</sup>". In conclusion, in the years following the Unification of Italy many new ships were built, the use of iron and steel was in its beginning stage and building techniques required some improvements.

The Lloyds' Register inspection coincided with the first merchant ship construction boom (entirely sailing-ships) that lasted until the mid-1970s and was driven by market forces. It would be

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<sup>55</sup> First outboard motors were introduced already in 1887 and by 1915 there were already 300,000 outboards in US alone, made by 18 different manufacturers. The development of outboards co-evolved with GRP revolution since the 1950s. Spurr 2004, p. 43-45..

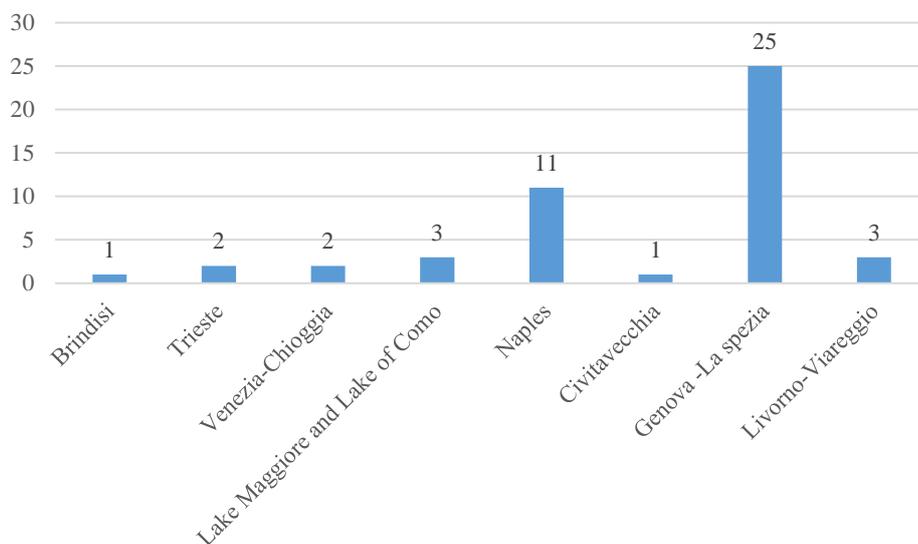
<sup>56</sup> Leino & al. 2007, s. 41.

<sup>57</sup> Davis, R.C. (2007

<sup>58</sup> Annals of Lloyds' Register, 1884

necessary to wait until the mid-1990s for the second boom (this time in steam-ship construction) which, however, rapidly faded. On the other hand, military construction continued growing until the First World War and rapidly became dominant also in Italy, fostered by the pre and post dreadnought European race. Since only a minor portion of Italy's naval works was exported, state contracts became one of the many ways post-Unification Italian governments supported the development of shipbuilding<sup>59</sup>.

*Figure 4. Location of yards for leisure boats (Loyds register of yachting- numbers of Italian boats registered in 1902)*



Source: Our elaboration from the Yachting Register 1902-3.

Geographically the shipbuilding production was highly concentrated: naval works were almost entirely realized in 4 regions (Liguria, Tuscany and Campania on the Tyrrhenian Coast; Venice on the Adriatic coast), which increased to five in 1889, after a new Arsenal was built in Apulia (on the Adriatic Coast); at that time a single region, Liguria, constructed two third of Italian merchant vessels.<sup>60</sup> Italian shipbuilding geography mirrored the map of the arsenals located the former Italian States: the Savoy Kingdom had its arsenal in Genoa and later also in La Spezia (Liguria); the Kingdom of the two Sicilies in Naples and Castellammare (Campania); Venice had its own Arsenal from the 12<sup>th</sup> Century. In the Grand Duchy of Tuscany the old arsenals (Pisa, Leghorn and Portoferraio) were no longer in operation. In Leghorn, a state shipyard had been built in 1857 and sold to a private entrepreneur in 1866. After the Unification of Italy, a new Arsenal was built in Taranto (Puglia) to provide the Southern region with a second unit.

<sup>59</sup>Fraccaroli A. 1970, Bagnasco E. and Rastelli A. 1991

<sup>60</sup> Ciccarelli, Fenoaltea 2009

Even though naval construction had been traditionally concentrated in the Arsenals, by the eve of first world war private shipyards were providing a comparable contribution. In Venice and in Campania the arsenal accounted for almost all of naval construction, in Tuscany there were only private yards, and in Liguria arsenal and private yards contributed equally.

In the beginning, leisure boats were produced in the Tyrrhenian shipyards especially in Genoa and in Naples (Figure 4).

Shipyard location did not change in the following decades. The most important companies producing yachting and finally motorboats were Sangermani, Baglietto, Cantieri Costaguta (near Genoa), Riva (on Lake Como), and Benetti (Viareggio).

### **5.1.1 The Franchini case study.**

The Adriatic coast was not an active participant during the early stages of ship and boatbuilding. Each middle-sized town on the coast had its own shipyards creating vessels for their local markets. The main features of these enterprises didn't change until the end of WWII<sup>61</sup>. Wood was the only raw material used, each shipwright had its own yard creating one ship at a time with the help of two to five workers. It usually took one and a half years to complete a ship. Along the 177 kilometre coast from Ravenna to Ancona, the only exception to this picture was Ancona itself, where a branch of the Cantieri Navali Riuniti was set up in 1906. The company belonged to one of the largest Italian steel producing groups, the Odero Orlando, based in Terni and in Genoa. After being managed by the Piaggio family until 1966, the Cantieri Navali Riuniti was saved from bankruptcy by the state-owned holding company, Iri. The Ancona shipyard is still operating for Fincantieri, a state owned holding company among the largest ship producing companies in Europe. On the Adriatic coast, yachting became a popular hobby during the 1930s, when the first nautical clubs were created: 1933 in Riccione and 1934 in Rimini. Ravenna and Pesaro followed in 1949, while Senigallia and Cervia in 1952.

Despite the historic lack of shipbuilding in the area, in the 1950s and 1960s, a district of small and middle size enterprises specialized in wooden recreational boats developed along the Central Adriatic Coast, including the Franchini yard. It was set up in 1947, in the Riccione Marina, by the shipwright Michele Franchini (called Guido)<sup>62</sup> using an old hangar built during the war. The workshop took the

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<sup>61</sup> Luana Carcano, *Challenges for Italian boating industry*, 2011

<sup>62</sup> Forlì Chamber of Commerce Archive

shape of a sole proprietorship specialized in wooden fishing and merchant vessels. Before the war Riccione had already become an important seaside destination with a variety of hotels, including the luxurious Grand Hotel (155 rooms) in 1929 and Hotel des Bains in 1916. In the interwar years the city became a focal point for the Italian upper class thanks to the presence of the Italian dictator Mussolini and his family on their summer holidays. Their villa was located very near the seaside (now owned by the Municipality). Tourist arrivals recovered very soon after the second world war, and in the 1950s all tourist activities experienced rapid growth. Tourism influenced shipwrights and stimulated the building of new boats, more suited to the needs tourists. Since the beginning of the century many fishing and merchant vessels had been used for recreational trips during the summer. It was a way for fishermen and traders to earn additional income.<sup>63</sup> These activities became more and more important during the 1950s when mass tourism brought hundreds of thousands of people to Riccione. This was the context, at the end of the 1950s, that led Guido Franchini to realize his “seaside cutter”, whose flat bottomed hull was particularly suitable for the shallow water in Riccione and allowed tourists to board near the beach. It was based on a model of Flying Dutchman (A “seaside cutter” is included in the permanent collection of the Maritime Museum in Cesenatico). Production moved from fishing vessels to recreational boats; the Schooner Falco Nero was also launched during these years.

Throughout the 1960s, Riccione was a fashionable tourist destination attracting a glamour clientele of actors, entrepreneurs and well off people in general such that some important brands decided to display their boats in this town. For instance, the Riva motorboats were displayed in two Marinas: Saint Tropez and Riccione. At the time, the “Guido” Franchini yard was in front of the Riccione Marina and next to the Savioli Dancing Hall, the most important meeting point for well off tourists.

“Here there were villas, the right people .... The Savioli dancing itself was very attractive from this point of view ... Every year someone knocks on the door of my father’s yard asking him “Guido will you make a boat for me?”. The demand for boats was extremely local and spontaneous. There were potential clients, a promising target .... Clients proposed their own idea of boat, their own project design. It was a symbiotic relationship because as my father used to say, “My clients stop having fun, when I deliver the boat ...<sup>64</sup>”.

The Franchini yard employed up to 15 workers and when the demand exceeded this size, they used third party suppliers.

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<sup>63</sup> Rimini Yacht club Archive: pictures

<sup>64</sup> Interview with Massimo Franchini, 17th October 2017, Riccione Marina

The introduction of fiberglass was a watershed in the company's history. Even though the elder Franchini continued to create wooden boats until 1985, at the end of the 1970s the company also started producing fiberglass vessels. In 1978, Franchini's son, joined his father, bringing design competencies and attention to new materials. The two issues were strictly interconnected.

"Fiberglass ..made design extremely important.... Wood has a shape while fiberglass is amorphous substance... You can create anything you are able to imagine".

In this way the shipwright's tacit knowledge was substituted by a mix of industrial design and the industrial production system.

Franchini wasn't the first to use fiberglass in that district. Already in 1961 Sipla (later called Comar) had been set up near Forlì to produce fibreglass Flying Juniors; the hull was painted brown a sort of faked wood.

"It was the Fiat of the Italian Marina ... Later Comar built also large boats, but in the beginning it produced the boat for people: a six meter partly cabin sail boat. You can sleep there with a sleeping bag, you can use a camping gas cooker. At the time it was a great innovation. Still now you can see many of this boats in the Rimini Marina.. The economic miracle of the 1960s made possible the success of the boat. People approached sea. They thought it was usable not only for the beach but also for sailing"<sup>65</sup>.

The entrance in the fibreglass market was very satisfying for Franchini too, particularly after the import of SCRIMP (Seemann Composites Resin Infusion) technology from the USA in 1993, which allowed for increased quality and reduced pollution. Until 2002, the company remained a small sized producer, which helped keep a direct relationship with its clients, although it employed some dealers and agents in foreign markets.

In 2005, in a context of increasing demand, an Italian equity fund provided fresh capital to support the company's growth. In less than three years the turnover grew to 25 million, yet it was the beginning of the end. Despite the 2008 crisis, the equity fund chose not to reduce production and the company quickly flirted with bankruptcy. The passage from a direct relationship with its clients to mass market production was realized without organizing proper marketing and selling investments and the company didn't survive to crisis.

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<sup>65</sup> Interview with Aleandro Maria Cingolani, Rimini, 19th September 2017.

### 5.1.2 The Ferretti group case study

Among Franchini's various clients, there was a car dealers' family based in Bologna who used to spend their holidays in Riccione, the Ferretti. At the end of the 1960s one of the son, Norberto, knocked on Franchini's door to have an old wooden fishing ship transformed into a pleasure boat. The result was good and in February 1970, the motorsailer was brought to the Genoa Boat Show. It was the beginning of a three-year collaboration which mixed the Franchini shipwright abilities with Ferretti marketing competencies. They produced 10-12 metre wooden motorsailers and made the first experiments with fiberglass. The collaboration ended in 1973 due to a difference in strategic vision.

During the 1980s a set of strategic decisions provided a new shape to the company: in 1982 the company entered the motorboat market and in 1989 set up a distinct engineering division as well as a research centre and debuted in offshore competitions.

It was both a rational and an emotional choice: " Our job is not like an hobby. It was when we built 5 boats a year and we had time to sail...Today with 150 employees and 4 yards, it is not anymore, but we are passionate about our work. We thought about motorsailers when we sailed on motorsailers. We focused for a while on sailing boat when I participated in regattas. Then we saw a change of trend and above all we felt the need to live the sea on motor-boats. So we began to built them<sup>66</sup>" The synergy between research and races contributed greatly to the company's success, specifically in the international market. Offshore races were the vehicle to earning a reputation in the international market.

Norberto Ferretti himself liked to participate in races such as he won the Class 1 Offshore World Championship title in 1994. Then Ferretti team won the European Offshore Championship in 1995 and the European and the World champion titles in 1997.

It is easy to recognize in this strategy the same choices and attitudes at the origin of the Ferrari myth. It is well-known that Enzo Ferrari was a motor racing driver and a sportive director before founding Ferrari spa in 1947. This is also the story of Alfieri Maserati, which set up his workshop after he had won many races. To sum up during the 1980s the Ferretti family not only moved towards the motor-boat market but also used races to position their products in the high-end segment. The Sales Department used a network of selling and service centres. Again it is easy to find the similarity with the car industry.

They brought in the nautical industry the new image culture on which the Made in Italy based its success in the 1980s. However, they expanded the concept of Beauty in order to include lifestyle.

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<sup>66</sup> 1987 Boat builders Alessandro e Norberto Ferretti, *Questione di impegno*, Nautipedia, 1987 (11).

“The Altura is beautiful... because it is easy to sell a beautiful thing. Beautiful is not an aesthetic concept ..It is more The boat is a tool for travelling and living.... For travelling .. it must be reliable and sufficiently fast. For living ...it must be liveable and functional.”

The second watershed came in the 1990s when Ferretti acquired many national brands as Riva, Pershing and many others. After acquisition each brand maintained its style and features. At that time the company was already a leader in the luxury mega-yacht's segment. The 2008 crisis surprised the company in a phase of further expansion and to avoid bankruptcy, in 2013 the Ferretti family sold their shares to the Chinese multinational heavy machinery and automotive manufacturing company Weichai Group. Although Norberto Ferretti continued to serve as honorary president, a new chief executive officer and new managers were selected, while Tan Xuguan became the new president.

In conclusion, mass tourism brought to the seaside a multitude of people, creating new potential clients for pleasure boats. In the meantime, fiberglass made it possible mass production. This context stimulating the emergence of a new generation of entrepreneurs which didn't have particular craft skills. The first one was Comar. Then little by little a district took shape made of boat-builders and suppliers. After Comar, many other new companies were set up and the older one started to move from wood to fiberglass. One of them, the Ferretti group, during the 1990s pursued a strategy of growth becoming an International player specialized in mega-yachts and luxury boats

## **5.2 Finland**

Motor boats have been most important products in Finnish boatindustry – though a number of globally known brands in sailing segment have been produced as well, most important ones being Nautor's Swan and Baltic Yachts. In volumes, though, aluminium built Buster motor boats and GRP resin Bella boats have been far more important. Indeed, in 2005 Bella boats created as much profits as rest of the Finnish boatbuilding firms combined.<sup>67</sup> Though the super-yachts produced by Nautor and Baltic are mainly exported, quite a share of motor boat production is sold to domestic markets. In total, roughly half of the Finnish boat production is exported. Indeed, it has been estimated that in per capita terms Finland probably has more boats than any other country: with one million boats there is, thus, one boat for every five Finn.<sup>68</sup>

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<sup>67</sup> Hulkko 2005.

<sup>68</sup> Askola & al. 2017, p 15-16. It is, though, highly arguable whether these figures do reflect the reality as the number of registered (larger) boats is much lower. Thus, these numbers are more guesstimates than even estimates.

The wood boat building was for a long time craft industry; boats were either produced in small workshop or they were self-made. First industrial boat production companies emerged in the early 20<sup>th</sup> century. The most important ones were Turun veneveistämö (Turku Boat Yard) that was founded already in 1889, and Porvoon veneveistämö (Porvoo Boat Yard) founded in 1911. Both produced boats in (small) series, but mainly using wood (and plywood) as the material. In high quality yachts also imported mahogany and Oregon-pine were used, whereas less expensive boats were built by using domestic pinewood. After the Second World War, plywood grew in importance in boatbuilding. Porvoo yard produced also motor boats and even engines to boats.<sup>69</sup>

Turku Boat Yard was closed in 1954. However, “new” Turku Boat Yard was founded only two years later to build small rowing boats, dinghies and motor boats from GRP, lately also some larger sailing yachts. During the late 1950s, Turku Boat Yard built a 4.5 ton sailing yacht – largest GRP boat built in Scandinavia by so far.<sup>70</sup> In the late 1960s this yard built hulls to minesweepers for Finnish military: these 27 meter long constructions were at the time among the largest ones made from GRP. The strength and endurance of material is witnessed in the fact that after 50 years from original construction these boats are still in use. Turku Boat Yard remained to be as the most important Finnish boat builder using GRP as material; indeed, it was the only Finnish boat yard that was listed by Lloyd’s.<sup>71</sup>

The first serial produced GRP vessels in Finland were, though, rowing boats made by Sarvis plastic company from 1956 to early 1960s. These boats did not gain much success in Finnish markets where most of the rowing boats at the time were still self-made from wood.<sup>72</sup> In motor boat segment one of the early entrants was Marino Oy, established in 1958. Interestingly, the founder of this company was engineer in chemistry and could thus use his knowledge on new fibres and plastics. However, first GRP boats built by Marino were dinghies, but fast outboard motorboats built since the early 1960s were the main products of this family owned company that still exists. Marino is today, the oldest boat building company in Finland.<sup>73</sup>

Turku Boat Yard (new) and Marino were, thus, the first Finnish companies established to build entirely boats from GRP. The other companies were mostly small workshops that only made few samples of boats from GRP, or firms that had experience with plastics and turned this knowledge to boat building (like Sarvis, Nars, and Latextil). The old wood boat builders, however, did not turn to GRP in the 1950s and early 1960s, though many workers in GRP boat building had previous

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<sup>69</sup> Leino & al. 2007, pp. 34, 40; Leino & Saarinen 2011.

<sup>70</sup> Ala-Pöllänen 2006, p. 77.

<sup>71</sup> Kauhanen 2012, pp. 33-35; Ala-Pöllänen 2006, p. 77.

<sup>72</sup> Ala-Pöllänen 2006, p. 75.

<sup>73</sup> Ala-Pöllänen 2006, 78 – 79.

experience in building wooden boats. By the late 1960s, though, a number of old wooden builders started to build GRP boats as well – or used GRP partly in the boat constructions. Whereas still in the late 1950s customers were cautious on GRP boats, by the early 1970s, the tide had turned, and the customers preferred more durable (and cheaper) GRP boats.<sup>74</sup>

It has been estimated that in 1980 there were c. 160,000 motor boats in Finland; in 2005 this figure was already 450,000 and in 2016 ca. 550,000.<sup>75</sup> The shallow coastal waters and lakes are especially suitable for small outboard motor boats. Thus, Finland has been one of the major markets in per capita terms for outboard engines. In mid-1960s roughly 10,000 outboards were sold annually, whereas in peaking years in the late 1980s this number was about 30,000 respectively.<sup>76</sup>

A number of early Finnish boatbuilding companies first started as independent firms, but were lately acquired by conglomerates. Many of these acquisitions did not make sense in business point of view, as they were unrelated to acquirers earlier businesses both in terms of vertical or horizontal integration. Rather boat building was in a number of cases favoured by CEO and management team to support their own hobbies. Some of these acquisitions, though, were rather profitable and were later in the 1980s and 1990s sold out when diversified structures were dismantled. Thus, Turku Boat Yard was acquired by a conglomerate firm Fiskars<sup>77</sup> in 1963; Shipbuilding company Holming, in turn, owned Baltic Yachts in 1977 – 1991, whereas Nautor (with brand Swan) was owned for a long time by forest industry company United Paper Mills.

In the following, we will shortly introduce two notable Finnish companies: Nautor's Swan and Bella boats.

### **5.2.1 Nautor's Swan<sup>78</sup> (TBA)**

Nautor was established in 1966 by Pekka Koskenkylä who was an entrepreneur from outside the boatbuilding business. He had education background both in Sweden and USA, and succeeded to convince Sparkman & Stephens to design a boat for the newly formed company. The first yacht was an enormous success both in terms of quality, new innovations introduced, and most importantly, it's success in racing especially in British isles. Thus, Nautor's Swan rapidly established its reputation as the foremost manufacturer of high performance racing yachts.

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<sup>74</sup> Ala-Pöllänen 2006, pp. 84-87.

<sup>75</sup> Räsänen & al. 2005; Askola & al. 2017.

<sup>76</sup> Askola & al. 2017, appendix F.

<sup>77</sup> Today, among the main products of Fiskars are aluminium hulled Buster boats.

<sup>78</sup> Sources: Koskenkylä 2009.

- Use of local (ancient) boat and shipbuilding tradition
- Used best designers in the field (S&S, German Frers, Ron Holland.)
- Made it “big” early on in US markets
- Success in racing further strengthened the position (especially Whitbread Round the World Races)
- Ownership to forest industry conglomerates in the early 1970s (first to Schauman, then to UPM),
- some of the most capable engineers formed a new company in the early 1970s, Baltic Yachts that is today known as one of the most prestigious sailing brands in the world (e.g. built the largest carbon fibre sloop in the world, 175 foot Pink Gin, launched 2017),
- Today owned by group of investors lead by Italian Salvatore Ferragamo (also a number of Finnish businessmen belong to the team)
- 98 % of production exported
- Since the beginning, over 2,000 Swan yachts have been produced, ranging from 36 to 131 feet.

### **5.2.3 Bella boats<sup>79</sup> (TBA)**

- Strong entrepreneurial background, no direct link to wooden boat building
- Founded in 1970
- Changed the focus of Finnish boatbuilding to inland lake district, head-quarters in Kuopio
- Focus of production small and medium sized motorboats and daycruisers (Bella, Flipper, Aquador)
- Among the largest producers in Europe today – and the most profitable boatbuilder in Finland.

## **6. Discussion and conclusions: Italy and Finland in comparison**

The technology changes in boating and yachting was as deep and profound as the change for wood to iron and steel in the late 19<sup>th</sup> and early 20<sup>th</sup> century ocean shipping. In recreational boating and yachting the change was even more profound: it created an industry and markets that did not exist before. Since the early years of GRP in the 1940s, as Daniel Spurr has noted, the boating industry has “grown a thousand-fold” to be a “multibillion-dollar industry, but not always profitable one”, as “boat sales rise and fall seemingly with the tide, though never as predictably”<sup>80</sup>.

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<sup>79</sup> Sources:

<sup>80</sup> Spurr 2004, p. 328, 343.

How then, can we contextualize more in-depth the GRP revolution and its consequences? What implications the story has to our current knowledge on businesses and business history in particular?

First of all, the story is about technological change: how a substitute material compensates and reforms previous methods, lowers the costs of production, and remake the markets.<sup>81</sup> The wooden boat building did not disappear; in fact, it might even have benefitted from the change to GRP in terms of increased demand for boats and yachts. Interestingly, innovators both in Finland, Italy, US and many other countries with GRP technology came outside of the established boat building circles. Old builders were conservative, so were the markets – or at least boat magazines that had rather negative attitudes towards GRP constructions<sup>82</sup>. It took roughly 20 years before obvious strengths of GRP made it market leader in boatbuilding. Today, among the challenges for new boats build from GRP is the fact that the old boats are so durable.<sup>83</sup> Thus, customer might prefer to by a well-conditioned second-hand boat rather than spent four times more money for a new-one. This is especially the case with larger and more expensive motor- and sailboats, but not that much with smaller ones. Thus, it is now wonder that, for example, in Finland the most profitable business has been building small rather than large boats.

Secondly, GRP revolution was not alone able to create markets. The demand for recreational boating and yachting was a consequence of economic growth, increased free time, and wealth. Early entrepreneurs, enlarged by economies of scale and mass production that further lowered the price of boats, created the market. This all enabled recreation for masses, and created tourism around boating (especially in Mediterranean area), vivid second-hand markets, charter and rental businesses, not to mention businesses offering supplies, gear and clothing. Indeed, clothing industry took a lot of influences from yachting. Also, finances and specific insurance companies for boat owners have been established. Moreover, specialized magazines emerged, as well as boat shows. In Sweden the first boat shows were organized already in the 1930s (Alt för Sjön), in UK boat shows started in mid-1950s, as was the case also in Italy and Finland.<sup>84</sup> New communities were built up – often around towns with declining seafaring activities – and the old, elitist yacht clubs were facing a growth, and new boat clubs emerged, offering low cost entry to children to sail with dinghies and motor boats – and induced many middle class families to hobby.

Third, the GRP co-evolved with other technological innovations: outboards to smaller craft, larger (diesel) engines to larger boats and other appliances. New materials were designed and new

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<sup>81</sup> Porter, ...etc:

<sup>82</sup> See especially Ala-Pöllänen 2006, p. 90. – Also in US a number of old wood boatbuilding companies resisted the use of GRP in the 1950s, but were backs against the floor by the late 1960s. Spurr 2004, pp. 173-174; 221-222.

<sup>83</sup> Spurr 2004, p. 328, 341-343.

<sup>84</sup> Ala-Pöllänen 2006, pp 87 -

building methods lowered the costs – though also optimized the use of fiberglass, which was not necessarily good thing for endurance of vessels.

Fourth, demand and desires of customers have affected deeply boatbuilding industry. Low cost sailing yacht and practical but cheap motorboats are a part of this story. However, also concentration of customers have had a deep impact to designs. Especially large charter companies might order dozens of boats simultaneously. For charter companies important is to have yachts that optimize “berths per dollar”<sup>85</sup>. For many, these constructions might not look as beautiful as the older boats. Today, even private persons ordering serial built yacht can usually ask for customizing, whereas small motorboats are usually just bought from the “stock”. In this sense boat and yacht industry does have a similarities with various industries in which major customers have had an impact in technology development.

Fifth, the organizational form of boatbuilding industry has mainly been small and medium sized family firm, though also large and even multinational companies have emerged during the recent years. In US, the consolidation of boatbuilding companies emerged already in the 1960s, in Europe to a larger extend only from the 1990s onwards.<sup>86</sup> In Finnish case we saw a number of conglomerate companies entering to business that was totally unrelated from their core activities. The SME boatbuilding firms, in turn, have formed regional clusters with rather intensive collaboration – that has been the case as well in Finland as Italy as in, for example, New Zealand.<sup>87</sup>

Sixth, marketing of specific sailing yachts especially and motorboats to less extend has been linked to notable “names” in the industry. An interesting feature are the design firms that offer services to various boatbuilding companies. For many companies the driving factor has indeed been the ability to get a notable designer to draw the boat – as was the case for the breakthrough of Nautor’s Swan yachts. Moreover, among the most gifted designers are many that have made their name in sports. Indeed, development of sports, race sailing especially at Olympic level and the deep-sea ocean races have been means for marketing the industry further. Using sports in marketing is certainly not unusual, but in boat industry it has a specific character, as many famous sailors have themselves started yacht design and boatbuilding firms. These include names such as Paul Elvstrom (the most successful athletic in the history of sail racing)<sup>88</sup>, Georg O’Day<sup>89</sup>, Pelle Petterson and Peter Norlin.

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<sup>85</sup> Blundel & Thatcher 2005.

<sup>86</sup> Spurr 2004, pp. 251-253.

<sup>87</sup> See e.g. Chetty 2004; Chetty & Agndal 2008; Larsson & Lindström 2012.

<sup>88</sup> Elvstrom is among the rare that have won four consecutive individual gold medals in Olympic Games (1948–60). He competed in eight Olympic Games from 1948 to 1988.

<sup>89</sup> Spurr 2004, pp. 149-162.



## References

- Agarwal, B. D., Broutman, L. J., & Chandrashekhara, K. (2017). *Analysis and performance of fiber composites*. John Wiley & Sons
- Ala-Pöllänen, Anne (2006). Saippuakuppeja ja kylpyammeita. Lasikuituveneiden alkuvaiheet Suomessa. [Sopa boxes and bath tubs. Early stages of fibreglass boats in Finland] *Nautica Fennica* 2005 – 2006. Helsinki: The National Board of Antiquities.
- Askola, Hanna, Oona Takala & Joni Tefke (2017). Veneilyn määrä sekä sen taloudelliset ja ympäristövaikutukset Suomessa. [Volume of boating and its economic and environmental impacts in Finland]. Helsinki: Trafi.
- Blackman Jr, A. W. (1974). The market dynamics of technological substitutions. *Technological Forecasting and Social Change*, 6, 41-63.
- Blundel, Richard & Michael Thatcher (2005) Contrasting local responses to globalization: the case of volume yacht manufacturing in Europe, *Entrepreneurship & Regional Development*, 17:6, 405-429.
- Chetty, S. (2004). On the crest of a wave: the New Zealand boat-building cluster. *International Journal of Entrepreneurship and Small Business*, 1(3-4), 313-329.
- Chetty, S., & Agndal, H. (2008). Role of inter-organizational networks and interpersonal networks in an industrial district. *Regional Studies*, 42(2), 175-187.
- Dess, G. G. (1987). Consensus on strategy formulation and organizational performance: Competitors in a fragmented industry. *Strategic management journal*, 8(3), 259-277.
- Glass, M. R., & Hayward, D. J. (2001). Innovation and Interdependencies in the New Zealand Custom Boat-building Industry. *International Journal of Urban and Regional Research*, 25(3), 571-592.
- Hulkko, Kustaa (2005). Ilmiö nimeltä Bella. [Phenomenon named Bella]. *Suomen Kuvalehti (magazine)* (46), pp. 45-47.
- Job, S. (2013). Recycling glass fibre reinforced composites—history and progress. *Reinforced Plastics*, 57(5), 19-23.
- Kauhanen, Ilpo (2012). Hans Groop. Suomalainen veneensuunnittelija [Biography of Finnish Yacht Designer Hans Groop]. Moreeni
- Koskenkylä, Pirkko (2009). *Swanien isä. Pekka Koskenkylän elämä aallonharjalla [The Biography of Pekka Koskenkylä, the creator of Nautor comp.]*. Helsinki: Tammi.
- Larsson, A., & Lindström, K. N. (2014). Bridging the knowledge-gap between the old and the new: Regional marine experience production in Orust, Västra Götaland, Sweden. *European Planning Studies*, 22(8), 1551-1568.

- Leino Pirkka, Yrjö Klippi and Juha Aromaa (2007). Purjehtivat klassikot: Suomalaiset puupurjeveneet Saaristoristeilijöistä Optimistijollaan [Sailing classics: Finnish wooden sailing boats from archipelago cruisers to optimist]. Helsinki: WSOY.
- Leino, Pirkka & Jarmo Saarinen (2011). Åbo Båtvarf 1889 – 1954 [Turku Boat Yard 1889 – 1954]. Helsinki: Litorale.
- Marsh, G. (2006). 50 years of reinforced plastic boats. *Reinforced plastics*, 50(9), 16-19.
- Meikle, J. L. (1995). *American plastic: a cultural history*. Rutgers University Press
- Mingfa, C. (2002). Yacht industries of China and rest of world [J]. *Ship & Boat*, 1, 001
- Milewski, J. V., & Rosato, D. V. (1981). History of reinforced plastics. *Journal of Macromolecular Science—Chemistry*, 15(7), 1303-1343.
- Piccinno, Zanini (2010) *The development of pleasure boating*.
- Poser, S. (2009). Speed for a Dated Technology: Rowing Boats and High-Tech in the 19th and 20th Centuries. *Icon*, 119-137.
- Ruder, A. M., Meyers, A. R., & Bertke, S. J. (2016). Mortality among styrene-exposed workers in the reinforced plastic boatbuilding industry. *Occup Environ Med*, 73(2), 97-102.
- Räsänen, Jukka & al. (2005). Veneilyn määrä ja taloudelliset vaikutukset Suomessa [Boating in Finland and its Economic Impacts]. Helsinki: Merenkululaitos.
- Salanterä, Samuli (2017). Purjehdusseurojen liput [Flags of Yacht Clubs]. *Nautic* (2), pp. 12-13.
- Serafini, Flavio (2003). *Vintage Yachts of the World*. Berlin: Feierabend.
- Spurr, Daniel (2004). *Heart of Glass. Fiberglass Boats and the Men Who Built Them*. McGraw Hill Professional.

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