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# Herreshoff Marine Museum: Historical Analysis

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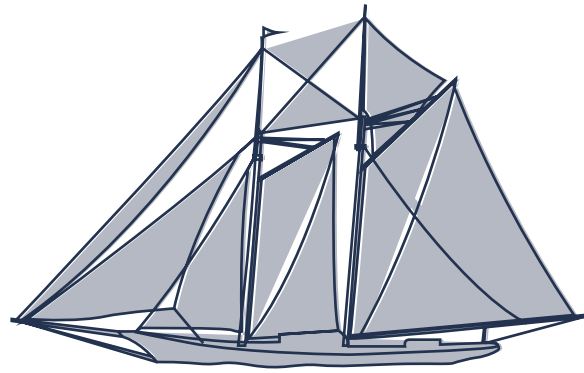
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Herreshoff Manufacturing Company  
Roger Williams University  
CPC Independent Study

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## Introduction

The legendary Herreshoff Manufacturing Company began operation in the year 1878 in the tiny harbor town of Bristol, Rhode Island. The company was founded by two brothers, John Brown Herreshoff, a blind boatbuilder who had been in business since 1863, and Nathanael Greene Herreshoff, a naval architect and steam engineer. The two decided to form a partnership since together they shared a passion for boatbuilding and a thirst for competition. Over the years, J.B. and Nat singlehandedly put both their small town and new company on the map thanks to their keen eye for technological innovation. Together they created a flourishing business by producing luxury steamboats as well as outstanding racing and cruising vessels.

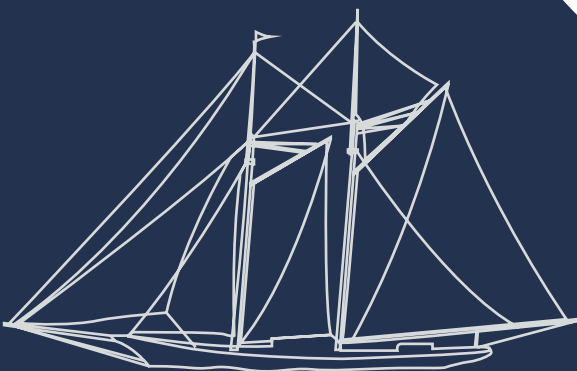
After years of successfully producing hundreds of custom design boats to some of the world's most elite customers, things began to change for the company. In 1915, J.B. Herreshoff passed, causing the company to have a brief setback. As a result, within a few years Captain Nat decided to retire and sell the company to a new owner. In 1924 the Herreshoff Manufacturing Company was sold to R.F. Haffenreffer, whose family owned the Narragansett Brewing Company. Unfortunately, after Haffenreffer took control, yearly sales began to decrease which ultimately led to a complete liquidation of assets and an end to the company in 1947.

## Focus of This Project

One of the goals of this independent study was to gain a fuller understanding as to why the company was so successful. We decided to focus on a specific time period for the bulk of our research and ultimately chose the years 1880 through 1920. The reason this specific time period was chosen is because it was a period of rapid growth for the company. Some of the elements we investigated that led to the company's overall success were the elite customer base they manufactured for, as well as the technological advancements they achieved by revolutionizing the methods for vessel manufacturing.

## Initiating Sales

During the time period researched, the Herreshoff Manufacturing Company hardly advertised. The magazines that were used later on in the company's life to advertise had not yet started publishing. This brings up the question, how did HMCo. generate sales, and how did they establish the loyal customer base that kept their business alive? For example, people such as J.P. Morgan, the Vanderbilt family, and H.P. Whitney were customers of HMCo. These wealthy



## HMCo. Independent Study

and powerful people, who help shaped business in our country as we see it today, owned at least one vessel from HMCo., and many owned more than one.

We've determined through our research at the Herreshoff Museum that the marketing and sales process used to grow the company stemmed from word of mouth. Many of these gentlemen and their families were from New York City and Newport, RI. More importantly, they belonged to the same club, the New York Yacht Club (NYYC). J.P. Morgan, a member of NYYC, and later the Commodore, had a yacht named Navette (the French word meaning Shuttle) built by HMCo. This yacht was Morgan's main way of transportation to Wall Street through the Long Island Sound and the East River from his Center Island Estate. This vessel later became the flagship vessel while J.P. Morgan was Commodore of NYYC. H.P. Whitney was an extremely wealthy member of the prominent Whitney family of NYC. In 1904, Whitney inherited \$24,000,000 from his father and later, in 1917 he inherited approximately \$12,000,000 from his uncle. Whitney's wife's cousin was William Kissam Vanderbilt II, which provides a means by which Whitney and Vanderbilt eventually shared their successful experience with HMCo. Within two years of each other, Whitney had two sailboats built, Dorothy and Dorothy II, with a total cost to Whitney of \$4,150.00 in 1894 and '95. Whitney later went on to build a 19 ft 4 in sailboat in April of 1910, entitled Bibelot which cost \$2,400, and a 50 foot vessel in 1912, which cost \$14,520.

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As a result of the relationships with prestigious members of the New York Yacht Club, and with J.P. Morgan as commodore it was inevitable that HMCo. would become involved as well. Members of the yacht club banded together to form a syndicate that financed the vessels that would race for the glorious cup. These members were connected to HMCo. in a personal manner as well. For example, within the ledger that recorded sales contracts for the sailboats, the Vanderbilt family shows up seven separate times for boat orders. The names included Cornelius, William and Henry Vanderbilt. Appendix A, shows a graph of the time period during which HMCo. built America's Cup yachts. Every vessel was funded by a syndicate from the NYYC with men like J.P. Morgan, William, Cornelius and Henry Vanderbilt, and Charles Oliver Iselin as managers of these financial backers. These syndicates funded and managed the build of the vessels in cooperation with the company hired to build the sailboat. The relationship between these individuals and HMCo. continued with the purchase of personal vessels, thereafter.



With six America's Cup victories in its portfolio, as a result of contracts from the syndicates from NYCC the manufacturing company of HMCo. earned free and valuable press.

During the process of the builds, the sailing community was curious as to the progress of the vessels. Various publications of the times included articles about this topic. For example, in Museum archives, we discovered articles from different publications relating to the manufacturing of Reliance. The 201 foot America's Cup sailboat which launched in 1903 with a crew of 64 was the fourth America's Cup vessel design and build by Nat Herreshoff and the HMCo. In article RN-18, "Rushing Work on Reliance" from the New York Times it describes the work that was complete, the process, the finish schedule, etc. From, As noted in this article, one key to the success of the project plan was the determination of the workers to meet deadlines. The sailmakers, for example, were working until 9 o'clock at night. When that portion was complete, another department would start their working overtime the following week.

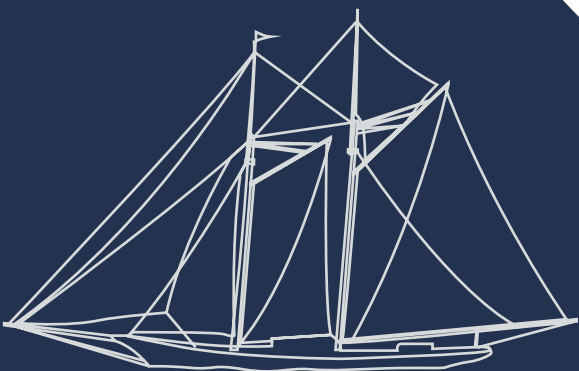
### **The Production Process**

The Herreshoff Dynasty was predominant in the boating industry both domestically and internationally. The powerful figures like Vanderbilt, and J.P. Morgan who purchased their own vessels as well as participated in the syndicate commission, weren't the only source of Herreshoff's fame; it was his managerial mindset that really separated him from all his other competitors. Nathaniel Green Herreshoff's approach towards boat construction, and how materials were handled revolutionized the boating industry. It is safe to say that Nathaniel Herreshoff can be considered an early adapter of this era and left no room for success for the late adapters and laggards of the industry.

Before construction commenced, Herreshoff personally hand-picked the lumber from River Mills and special ordered other types from lumber storage facilities in the area. The timber assortment consisted of all types of wood such as oak, yellow pine, and western fir. He diversified his collection intending to use certain types for specific parts of the boat. After the inventory was established, Nat supervised his production process beginning with the prepping of the wood.

Each kind of timber would receive a special prepping procedure before being assemble. The western fir was ordered to be used for planking. Once in the shop it was further resized and shaved down for the desired thickness.

The yellow pine was air-seasoned and then stickered which is the process of neatly stacking the wood after sawing occurred. This was to make sure that



there was no warping, which would could later lead to a defect in the final product. Oak was the largest timber used in Herreshoff's boats. The oak made up the majority of the boat's structure. Nat put the oak through a very detailed preparation process, which took around 48 hours. First, he would season the oak in saltwater for 24 hrs. to kill any worms that might have been living in the logs. Next, kerosene liquid was injected into one side of the lumber until it leaked out the other side. This was called lubricating the lumber. It was necessary to pay close attention to this process because a piece of oak that was not fully lubricated could potentially snap during the molding of the hull. The kerosene injection helped with the malleability of the wood. Finally, when Herreshoff began the framing process, he developed mastery in the art of steam heating which made the process a lot easier when mounting the wood onto the ribbands.

In addition to the intensive care given the lumber, Nat put thought into other components of the boat that increased its lifespan. In 1914, Nat began using silicon bronze screws instead of brass screws to increase the durability of the boats. The brass screws would rust and oxidize from the saltwater.

Another advancement incorporated into the Herreshoff Manufacturing Company's process was its mean of transporting materials from shop to shop during construction. The company had railways that ran throughout the property making the transportation of boats and other large materials a lot easier and reduceing slack time to move the raw material. Another interesting point that we came across was that Nat based almost all boats on a single mold. The luxury designs we simple additions to that base model. This put the company at an advantage because they were able to cut time and cost in production thanks to the original model they started out with.

These methods that Herreshoff utilized can be classified as early stages of the LEAN manufacturing concept which is used today in a majority of America's leading manufacturers. Herreshoff made sure that his entire inventory was used and nothing was wasted. By reducing/eliminating waste, Nat preserved the value of his products and increased the efficiency of operation.

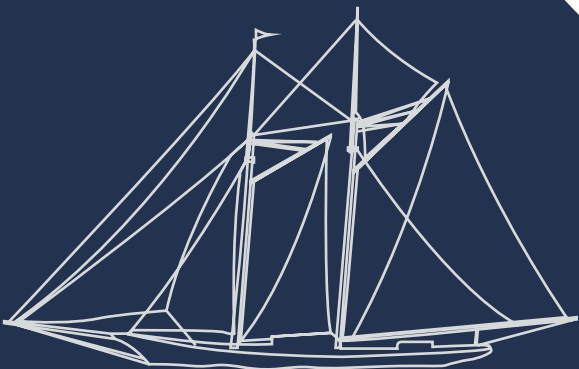
### **Conclusion**

Although The Herreshoff Manufacturing Company was considered to be the number one manufacturer in the world of boats during its existence and specifically during its peak years of 1880s through 1920s, producing large or small, custom or basic, and steam or sailing vessels, eventually sales began to decline. Many external



aspects contributed to this decline, one major event being the depression, which led to a tough economy, as well as the discontinuation of production of America's Cup Boats. During the end, the company was still producing hundreds of boats through their naval contracts, however the revenue that was coming in could not outweigh the cost that was needed in order to keep the company afloat.

The Herreshoff Manufacturing Company was one of the most influential success stories in early America. All thanks to two brothers who had a love for what they did, using techniques no one had seen before. J.B. and Nat Herreshoff showed innovation in everything they did, and as a result, although not well documented, helped shape the way modern manufacturing companies work today. Thanks to the Herreshoff Marine Museum bordering the beautiful harbor of Narragansett Bay in small Bristol, Rhode Island, the legacy of both brothers and the history of their successful company will always be remembered.



## References

Hasselbalch, Kurt, Frances Overcash, and Angela Riddin. Guide to the Haffenreffer-Herreshoff Collection: The Design Records of the Herreshoff Manufacturing Company, Bristol, Rhode Island : The Francis Russell Hart Nautical Collections. Illustrated ed. Boston: Francis Russell Hart Nautical Collections, 1997. Print.

Evidence found on Microfilm Reels from Herreshoff Marine Museum. Pictures in attached appendix.

Evidence found from Thomas Brightman interview from the Herreshoff Marine Museum.

Evidence found from newspaper clippings on Reliance. Located at the Herreshoff Marine Museum, and dictated RN- 1, RN-18, etc.

## Websites Used

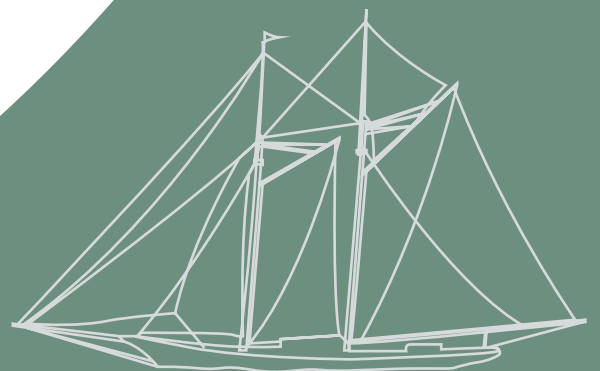
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[http://en.wikipedia.org/wiki/America's\\_Cup](http://en.wikipedia.org/wiki/America's_Cup)

<http://www.britannica.com/EBchecked/topic/20399/Americas-Cup#ref107081>









[http://en.wikipedia.org/wiki/Harry\\_Payne\\_Whitney](http://en.wikipedia.org/wiki/Harry_Payne_Whitney)

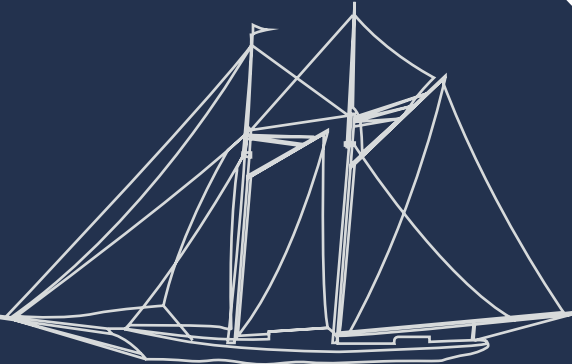
[http://en.wikipedia.org/wiki/J.\\_P.\\_Morgan](http://en.wikipedia.org/wiki/J._P._Morgan)



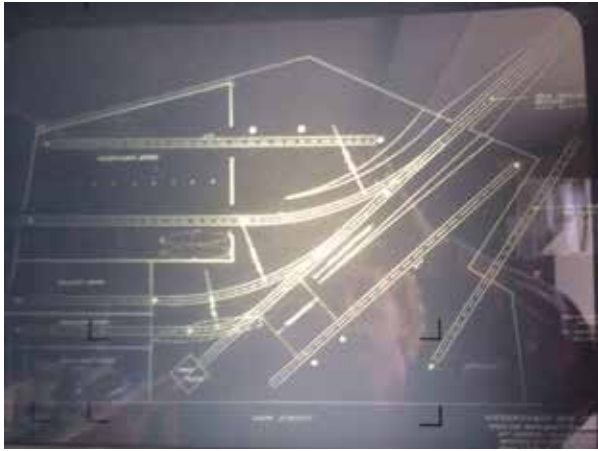


### Appendix A - Graph of America's Cup Vessels produced by HMco.

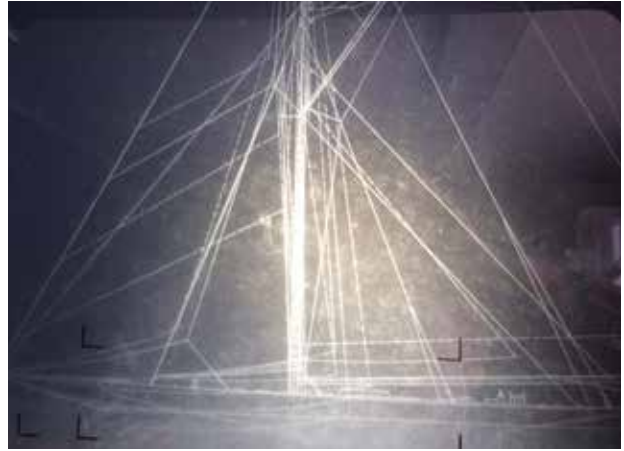
SCYC 85'	1893	New York City	 New York Yacht Club	Charles Oliver Iselin syndicate, <i>Vigilant</i>
SCYC 90'	1895	New York City	 New York Yacht Club	William K. Vanderbilt syndicate, <i>Defender</i>
	1899	New York City	 New York Yacht Club	J. Pierpont Morgan syndicate, <i>Columbia</i>
	1901	New York City	 New York Yacht Club	J. Pierpont Morgan syndicate, <i>Columbia</i>
	1903	New York City	 New York Yacht Club	Cornelius Vanderbilt III syndicate, <i>Reliance</i>
Universal 75'	1920	New York City	 New York Yacht Club	Henry Walters syndicate, <i>Resolute</i>
Universal J-Class	1930	Newport	 New York Yacht Club	Harold S. Vanderbilt syndicate, <i>Enterprise</i>
	1934	Newport	 New York Yacht Club	Harold S. Vanderbilt syndicate, <i>Rainbow</i>



**Appendix B - Photos from Microfilm Reels**



HMco. Railroads



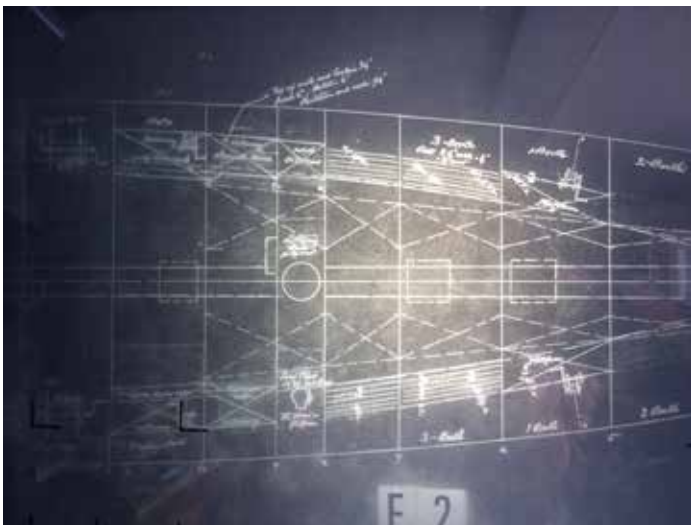
Reliance #605



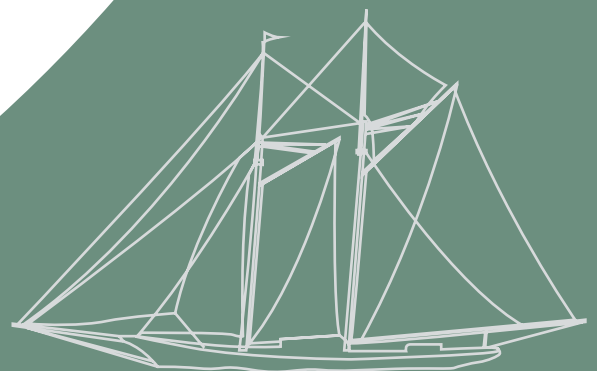
Reliance #605 Deck Layout



Reliance #605 Deck Layout

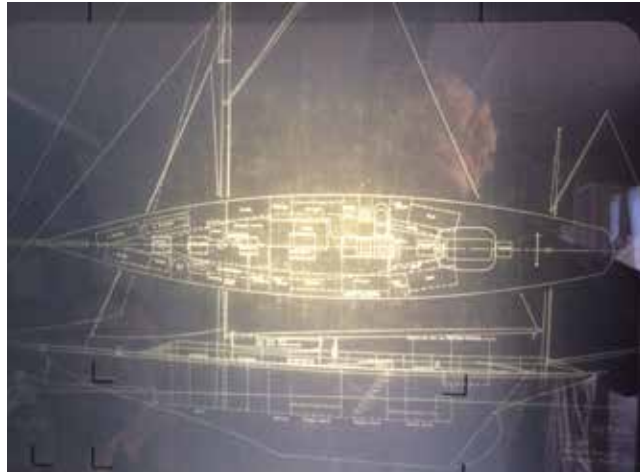


Reliance #605 Interior Layout



## Appendix B - Photos from Microfilm Reels Continued

Petrel #510 Deck Layout



Petrel #510 Interior Layout

