

## Manitowoc Shipbuilding Company History

*By: Gerald Pilger*

The relationship of Submarines to the Manitowoc Shipyard began in 1940 when the Navy Dept. contacted the Manitowoc Shipbuilding Co. for construction of 10 Submarines of the Gato Class. The contract was later expanded to 41 boats of which 28 were completed before World War II drew to a successful close.

How did the Navy happen to pick this small shipbuilding company, located so far from salt water for the most difficult ship construction job known at the time? How successful would they be in building this type of ship? How were the crews trained for their war time duties at such a remote spot, and finally, how were these boats taken from the fresh water of Lake Michigan to salt water? The answers to these questions are a testimonial to the skill and devotion of management, and the workers of this small Wisconsin Company.

When the United States entered World War I, 32 cargo ships of 3500 tons were built to maximum dimensions of the St. Lawrence River Locks. One of these freighters, the Coquina, was the first ship sunk by the Japanese in World War II.

Post World War I the yard was expanded, and with the excess amount of steel plate, they designed and built the first self-unloading freighter. In 1925, they constructed a larger twin screw design which enabled the vessel to navigate small harbors without the use of tugs.

With expanded facilities, they built 8 Car-ferris, dump scows and a large tanker for the Standard Oil Co. Also this time period, they designed and built the Manitowoc Speed Crane, which is world famous today! ***During the lean years, the shipyard built Coast Guard Cutters, one, which later became President Roosevelt's yacht, which was later owned by Elvis Presley.***

In 1936 ships used all welded hulls instead of rivets. This welding skill paid off later in the construction of Submarines. In 1940 work started on the 406' car ferry, "City of Midland". These ferries were built to transport freight cars across Lake Michigan, along with some automobiles. The company at this time was in a very healthful condition. Additions and improvements resulted in a modern, well-equipped plant, located on 35 acres, with a dock space of 4500'. The company had gained experience and skill from having built 306 ships. The shipyard had a group of skillful engineers, a strong management team and a good labor pool. All was in readiness to embark on the greatest challenge in its long history.

Charles West, President of the Manitowoc Shipbuilding Co., was always looking ahead. Because of activities in Europe, the United States Government would be awarding contracts for small ships. Mr. West went to Washington with the possibility of obtaining contracts for his yard. His efforts were limited to small ships because of the St. Lawrence Seaway, and the Welland Canal, a series of locks 270' long and 14' of water. The other route was via the Illinois & Mississippi Rivers. In 1939, it was apparent that war was inevitable. West knew that because of limited facilities in the shipbuilding industry, some small ships would be available. The Bureau of Ships, in its survey knew the capabilities of the Manitowoc Shipyard. Mr. West was thinking of building Destroyers, but how could they be transported to the ocean? The Illinois & Mississippi River route was a possibility, but how could a ship drawing 12' of water over a stretch of water where the depth was only 9'? The answer was in his own yard. He often took walks through the yard, observing and talking to the workers. He knew many of them on a first name basis. During one of his walks along the waterfront the company's floating drydock came into view. A floating drydock whose purpose was to lift ships out of the water, in effect to lessen their draft. This was precisely what was needed to transverse that 9' stretch of water on the Mississippi River. A Destroyer could be placed in such a dock and towed to New Orleans. The Company's Engineers went to the drawing board and when West was convinced his plan would work, and with the necessary drawings and proposals, he headed for Washington to present his plans to the Navy Dept. West left Washington without an answer, but the Navy did seem interested and assured him his plan would be studied!

War broke out in Europe and President Roosevelt declared a limited National Emergency. The Navy shipbuilders were concerned that submarine building capacity was not sufficient to support a long war. The Electric Boat Co. was the only commercial source of submarine construction, and the Navy felt private competition would be beneficial. The navy approached Electric Boat Co. president, Mr. Spear about this possibility. Spear, knowing there would be more submarine construction than he could handle, called Charles West and asked if he was interested in building submarines. West answered that he knew nothing about building submarines, therefore was not interested. In 1940 the war escalated.

President Roosevelt signed the Naval Expansion Bill. The Navy Dept. knew the submarine building capacity would be strained to the limit. West was asked to come to Washington to meet with the Bureau of Construction and Repair. The Bureau asked West to build submarines, and assured him the Electric Boat Co. would provide plans and whatever assistance he would need. Lacking knowledge of this type of construction, West said he would study the plans and reply in a week. In conclusion, and after studying the plan and consulting with Electric Boat Co., the Navy and his staff, he was convinced and headed back to Washington to accept the contract for 10 Gato Class Submarines at a cost of \$2,850,000 each. They were exact duplicates of USS Growler, SS 215. Completion of the first submarine, USS Peto in 34 months, followed by 2 to 3 month intervals. The contract was officially approved December 26, 1940.

Special cranes and a crawler crane were built to lift and haul the 60-ton sections to the building ways. This model 3900 crane was so successful, a special order of 3900 cranes were built and transported to clear the wreckage at Pearl Harbor. This crane is still being built today.

A full size mock-up of the submarine was built with all the details in place. Workers could tour and acquaint themselves with pipes, machinery, valves, gauges etc. The Navy had early doubts about building submarines here and was concerned with the side-launching method. However this had been the method used for as long as ships were constructed here, and company officials had few doubts about this type of launch. To ease the Navy's doubts, a special scale model and launch tank was built to duplicate the exact launch. Some of the Navy's early concerns were that the submarine would roll over. The concluded test results removed any doubt.

Normal employment was 500 workers, but many more would be needed. The combined population of Manitowoc and Two Rivers, a close neighboring city was 34,000. The County had 3,893 farms and farmers were recruited to work at the shipyard. This was sufficient for the time and by March 1941, employment reached 1,700 workers after the start of the program in October 1940. In the months ahead, workers were recruited from the neighboring cities that could supply the needed work force. Farmers milked their cows in the daytime and welded on submarines at night. The magnitude of all the recruiting and training effort enabled the shipyard to reach a peak employment of 7,000 workers. A National magazine paid tribute to West and his shipyard, they said the apprentice course was tougher than a "Navy Shakedown Cruise". The results of which were, custom trained shipbuilders A Navy Inspector at the yard commented, "We lovingly call them "Cheese-workers and Cherry pickers", but Lord what beautiful work they do".

The Defense workers at the shipyard needed housing, so the Federal Housing Authority allocated \$1,400,000 for pre-fab houses. It was named "Custerdale". The houses still stand today and many of the streets were renamed after submarines built here as a vivid reminder of the War Years, and the contribution of successful War patrols.

On June 18, 1941 the first section of SS-265, USS Peto left the Erection Shop and was placed on the building ways. It was an historic event and Charles West gave a short talk to commemorate the event. This section was the submarines' Control Room, 14' long and 35 tons. 5 days later the second section was brought out and by August 8, 1941 there were a total of 7 sections on the ways. By February 12, 1942, 4 submarines were already on keel blocks. When Pearl Harbor was attacked, a new and determined attitude surfaced at the shipyard. The slogan "Uncle needs his Boats" was all the response the workers needed!

The first submarine USS PETO SS-265 was launched April 30, 1942. This historic event was the first time a submarine had ever been side-launched. There is a great deal of detail in this type of launch.

The boat constructed on building ways (keel blocks) was raised 1/2 inch on to a second set of launch timbers, 16" x 24" placed 14' apart and sloped toward the sea wall. The forward and aft three ways were fixed ways and extended to the sea wall but were not tilted. They were firmly in place to take the full horizontal thrust of the submarine prior to launch. A trigger device designed by John West, cut the 8" manila line with 6 cutting knives at exactly the same time to assure the hull would enter the water precisely as designed. Peto hit the water and the wave from the launch traveled across the river dousing some of the spectators there to witness the launch. Peto was launched 6 weeks ahead of schedule and was covered by the major networks. "Picture of the Week," a spectacular picture of the Peto launching was used by Life Magazine.

The original plan for delivery of new submarines to Groton, Conn. changed after the start of World War II. All the submarines were commissioned in Manitowoc, Wisconsin, and all the training operations took place in Lake Michigan. Winter months operating in Lake Michigan were not pleasant. Ice build-up did cause some problems, but all in all it went very well. The Navy leased a commercial building, located across from the main entrance to the shipyard, to house the incoming crews. This building was converted with sleeping quarters and a galley and worked very well. Inside the main gate, and adjacent to the final fit-out berth for the submarines, the Shipyard converted one of their buildings for the Navy to use as a ships office and training class rooms for the crews. This building was also used to store incoming equipment, ships supplies etc.

In just 4 days after the launching of Peto, the first section of USS RASHER, SS269 was placed on the keel blocks.

Construction was way ahead of schedule, so the Navy offered the second contract for 20 more submarines. The first 4 were duplicates of the first 10 and the remaining 16 would be a new class (Balao) with a heavier hull capable of diving to greater depths. The contract was let June 6, 1942 with an estimated cost of \$3.1 to \$3.2 million.

The nucleus of Peto's crew began to arrive in June 1942, and by September 5<sup>th</sup>, the remainder of the crew arrived. Builder's trials were scheduled for November 6, 1942, and Peto was underway for the first time. This was a banner day for the workers and people of Manitowoc. Hugh crowds gathered along the banks of the Manitowoc River to watch Peto head up river. People were curious to get their first look at a submarine built by their husbands, sons and boyfriends. Peto passed through the bridges and breakwater and entered Lake Michigan where trials would be conducted. Pumps, valves, hydraulic systems, steering gear and the bow and stern plane operating mechanism would be tested.

Peto made her first dive; everything went well and after a week of testing all the equipment, was ready for trials under the Trial Board.

These tests took place on November 15 and 16, 1942. When Peto entered port, people along the banks noticed a broom lashed to the periscope, indicating Peto had made a "clean sweep" of all her tests. On November 21, 1942, the Commandant of the Ninth Naval District directed the submarine be accepted and commissioned in the United States Navy.

Monday, December 21, 1942 Peto entered the Manitowoc Harbor for the last time and tied up at the shipyard dock for final work and preparations for making the trip to New Orleans. The periscopes and radar masts were removed and crated, and the periscope shears were taken down and bolted to the deck. This was done because of the low clearance of the bridges on the Chicago River.

The Company had made previous arrangements for transporting the submarines to New Orleans. A specialty built dry-dock, 330' in length with a beam of 64', a draft of 7' and wing walls 27' high, powered by a pusher tug would take all the submarines from Lockport, Illinois through the Illinois and Mississippi River to New Orleans.

Peto left Manitowoc December 25, 1942 for Navy Pier in Chicago. It was a happy day for some and a sad day for others, because workers would be seeing Peto for the last time, and people lined the banks of the river to wave her on.

Peto was de-commissioned and turned over to Manitowoc Shipbuilding Company personal. This was routine procedure. Part of Peto's crew along with a special crew from the yard made the trip to New Orleans where she was again commissioned and put in service.

Peto left Navy Pier early the next morning for the 34 mile trip, through 51 bridges to Lockport, Illinois to be loaded on the dry-dock for the trip down river. On December 26, 1942, the 1500 mile trip began with the Tug Kansas City, pushing the dry-dock containing Peto to New Orleans. There were many incidents that happened to submarines on the river trip, one where the sub ended up in a cornfield after a storm.

Strong currents, wind, rain; fog and a tornado were all hazards to cope with. The 12-day trip ended on January 7, 1943 when Peto arrived in New Orleans.

Before the Navy would accept the ship back, all the periscopes and periscope shears, radar masts and antennae had to be reinstalled. With the work completed, arrangements were made for loading fuel, supplies, ammunition and torpedoes. On January 11, Peto was re-commissioned and ready for service. It was on January 16, 1943 Peto finally got underway for the long trip to the war zone.

On October 26, 1943, 52 days short of 2 years, the 10<sup>th</sup> and last submarine of the original contract was commissioned. This efficient shipyard had built boats so fast the Navy Dept. awarded them with a 3<sup>rd</sup> contract for 17 more submarines on June 17, 1943. With the approaching end of the War, this contract was cancelled. The Navy surely got its moneys' worth from this little mid-western shipyard.

The greatest contribution made by the Manitowoc Shipbuilding Company was in providing evidence that a small but well equipped yard, managed by competent engineers' and manned by skilled workers, could successfully undertake the most difficult ship construction job of that period. Not only did they undertake such a task, but turned out such a beautiful product in less time than called for. Their methods of construction were unique and were adapted by other shipyards building submarines for Uncle Sam.

***The Manitowoc-built submarines earned the reputation as the finest in the world. They had a very good record for tonnage sunk and were appreciated by the men who served on them.***

**Manitowoc Shipbuilding Company rests its case!**