

German u-boat 505

by N. Eugene Brymer

“In May 1944 the US Navy task force 22.3, known as a “hunter-killer” group, sailed from Norfolk, Virginia to look for enemy submarines. The group was commanded by Captain Daniel V. Gallery, USN, and was comprised of the escort carrier Guadalcanal and five destroyer escorts: the Pillsbury, Pope, Flaherty, Chatelain and Jenks, under the command of F.S. Hall, USN. Their destination was a known U-boat rendezvous area near the Canary Islands.

Although the primary mission of the group was to find and destroy enemy submarines, Captain Gallery had long considered the possibilities of a daring plan to capture a U-boat. Such a prize would be of inestimable value to the Allies, not because of the U-boat itself but because of the equipment and documents it might yield. Standard tactics in dealing with U-boats called for sinking them as expeditiously and efficiently as depth charges, bombs and armor piercing ammunition could accomplish. But Gallery reasoned that if the U-boat could be forced to the surface, it might be possible to get some men aboard her under certain conditions. Since such an opportunity had seemed possible with a U-boat previously brought to

the surface and sunk, he decided to prepare for it.

As the task group proceeded, a boarding party was organized on each ship and rehearsed in a role that few ever expected to materialize. After cruising almost as far south as Freetown, Sierra Leone, the task group headed north for Casablanca. About 150 miles off the coast of Rio De Oro, Africa (Latitude 21-30N, Longitude 19-20W) the group encountered the U-505.

It was Sunday, 4 June, at 1109 when the Chatelain reported sonar contact on an object 800 yards away on her starboard bow. Although sonar contacts are frequent and do not always mean submarines, the



Original Boarding Party.

[...Section omitted] sent to the bottom. When Chicago learned of its story and that one of its native sons had been in command, the Navy was asked if the U-505 could be taken to the city as a war memorial. Getting it to Chicago turned out to be almost as monumental a task as its original capture.

It required the authorization of Congress to secure title to the submarine. It took a group of some 100 enthusiastic citizens of Chicago to plan and affect the task of moving the U-505 from the Portsmouth base to its new home at the Museum. And materially, it took more than \$250,000 in monetary gifts and services from public-spirited individuals and business firms of Chicago to accomplish the task. On 14 May 1954 the U-505 began her last voyage... a 3,000-mile tow trip via the St. Lawrence Seaway and three of the Great Lakes. The trip took about a month to complete with short stops made at various cities along the route.

The U-505 arrived in Chicago on 26 June and was then placed on a floating dry-dock in preparation for the final leg of the journey, an 800 foot trip overland... from Lake Michigan to the east end of the Chicago Museum of Science and Industry Building.”

How the U-505 Was Moved and by Whom

Moving a submarine overland is a unique engineering accomplishment. When the problem of moving the U-505 from the waters of Lake Michigan to a dry-land permanent berth at the east side of the Museum building was first discussed, there were many different plans proposed as to routes and methods. It was not so much a question of “how” it could be done as it was determining which method was the most practical and economical.



K. F. Adair, LaPlant Adair Company, Indianapolis, Indiana, was contracted by the Museum to move the U-505 from Lake Michigan to the Museum site.

On 3 May 1954, almost two months before the U-505 arrived at the beach in Chicago, D. M. MacMaster, Director, Museum of Science and Industry of Chicago, Illinois wrote the E. W. LaPlant Company of Evansville, Indiana indicating the Museum would be receiving a German submarine, U-505, captured by the US Navy in June 1944 off the coast of Rio De Oro, Africa. In his letter MacMaster described the work proposed, “In the event you have the organization, experience, etc., and are interested in this operation, full details will be provided by Seth M. Gooder, 1247 Deerfield Road, telephone Deerfield 261, or the writer.” [A firm, Crowe Brothers, had offered to provide the use of their rollers, rails, saddles, cable and blocking, etc., if required.]

Thirty-seven days later, 9 June, LaPlant responded by letter. “We propose and agree to do the following work on the Submarine U-505: Furnish the necessary labor, equipment (including all rollers) and supervision required to move this vessel from the floating dry dock just off the beach at 57th street, raise to required elevation to cross

South Shore Drive, then move to new location in front of Museum, turn and lower onto new foundation and remove our equipment all for the sum of Eighteen Thousand Dollars (\$18,000) payable on completion.” The LaPlant letter continued, “In view of the nature of this work and the attendant publicity we would like to share our profits, if any, with you. After this work is completed we are willing to divide evenly with you any money left over above our costs.”

Not only did LaPlant not make a profit for itself or the Museum but worked, more or less, for free due to a decision of the “from out of retirement” Gooder, according to Mike Adair, son of K.F. Adair, the man who performed the historic move. Mike Adair is the present owner of Laplant-Adair Co. located in Boynton Beach, Florida. “Dad wanted to use 50 and 100-ton air jacks to lift the submarine but Gooder wouldn’t allow it for fear of collapsing the hull. Laplant had estimated the lifting would require only ten days. Due to Gooder’s decision, however, Dad and his crew had to use mechanical hand screw jacks that took six weeks, adding more than a month additional time to the job”, Adair continued.

Additionally, according to Adair, on the day of Dedication of the Exhibit, neither his father nor the LaPlant Company were recognized during the ceremony as having carried out the successful move. “And”, said Mike, “the final insult was that no mention was made of the LaPlant Company or his dad in a publication entitled The Story of the U-505, published by the Museum in 1955.”

K.F. Adair and the Laplant Company did receive recognition in International Harvester Company’s publications International Trail and Harvester World, The Indianapolis Star’s Sunday Magazine and Ford Motor Company’s Clues Magazine, among others.

The Museum's version of the move was described in a booklet "The Story of The U-505."

"At this stage a retired Chicago engineer, Seth M. Gooder who had spent forty years in the business of moving huge buildings and a variety of odd-shaped structures, volunteered the suggestion that the U-505 be moved like a house... on rollers. It's true that the U-505, weighing around a thousand tons and 252 feet long by 22 feet at its widest point and about three stories high presented a rather unusual kind of house. Accordingly, under his guidance the U-505's last trip... an overland journey of roughly 800 feet was planned.

When the U-505 arrived in Chicago it was placed in dry dock to prepare it for the overland haul. After removing approximately 30,000 gallons of fuel oil remaining in its tanks and an additional 96 tons of pig iron ballast from the keel, the weight was reduced to approximately 840 tons. The next step was to place it on a floating dry-dock where the U-505 was mounted on a specially constructed steel carriage which would ride on steel rollers and rails. This

carriage consisted of two large "H" beams 135 feet in length placed parallel with the boat's length and these were then strengthened by 21 transverse beams 14 feet long. All intersections of the carriage were welded and bolted for additional strength.

Maximum contact between this carriage and the curved shape of the U-505's hull was provided by timbering, with the last few inches shaped by a cement grout. In this way the weight of the submarine was evenly distributed on the steel carriage that would ride the rollers. While this was being done, the beaching site at a point directly east of the Museum was prepared. A special pier was built 50 feet out into the lake from the shoreline and secured firmly. Then a 325-foot channel, 9 feet below the water line was dredged to accommodate the floating dry dock and its submarine cargo. Four steel rails were laid on heavy timber cribbing extending from the edge of the lakeshore drive to the end of the pier to receive the U-505 on the first leg of its overland trip.

On Friday 13 August the operation began.

The dry-dock was gently nudged into position by a couple of tugs and when all was secured, the dry-dock



Floating dry dock with U-505 is brought in to a specially built pier.



Four of the original Boarding Party from 1944 were on hand for the final move of the submarine they helped capture.

[...Section omitted] nent memorial to those Americans who have lost their lives at sea.

The U-505 is representative of the German undersea raiders which almost drove our ships from the sea. She was boarded and captured off the coast of Africa in 1944 and was brought back intact. This is the first enemy man-of-war captured in battle on the high seas since 1815 in the days of sailing ships. Ironically, the only other naval memorials that come to mind are those to the "Maine" and the "Arizona", both symbolic of US naval disasters, What more appropriate symbol of our victory at sea is there than an enemy submarine itself, beaten in mid-ocean battle and installed in the Mid-West a thousand miles from salt water?

Even in the atomic age the submarine is still the greatest threat to our control of the seas. This captured sub will serve as a tribute to the heroism of our Navy men, as a memorial to the dead, and as a stern reminder to the living that control of the sea, so vital to our existence, has been won at a great price. It will be much more than a Chicago exhibit. It will be a monument of national interest, commemorating the thousands of our lads whose national cemetery is the ocean.

Besides its sentimental and historic appeal, this memorial has great dramatic impact. Official Navy motion pictures, taken by combat photographers during the actual capture, are shown to visitors as part of their trip through the submarine. These films recapture the heroic mood of the battle itself. They show how our young Americans perform when the chips are down and the fantastic chances they took in the face of unknown dangers to board and capture this U-boat. Visitors can now see where members of the boarding party won a Medal of Honor, two Navy Crosses and nine Silver Stars.

The U-505 will be an inspiration to future generations of American, bringing home to them the realities of war and the chances their fathers took to preserve our liberties".

Submarine U-505 Takes Second Voyage in 50 years

On 8 April 2004 The Museum of Science and Industry made history again when it launched the U-505 German submarine on its final voyage to a new underground climate-controlled exhibit hall designed to preserve the aging war relic. Present for the celebration were Chicago's Mayor Richard M. Daley, Navy Commander Craig Selbrede, Navy Chaplain LCDR Kay Reeb and the four surviving veterans from the original boarding party in 1944.

Phillip Trusheim, a coxswain on the USS Pillsbury in 1904, was only 19 years of age at the time of the capture. "People always asked if we were scared," said Trusheim. "We didn't have time to be scared. People will be talking about the U-505 capture 100 years from now. Now 79, Trusheim and his fellow mates sat in awe of the massive vessel for one last time with the sky as its backdrop.

David Mosen, president and CEO of the Museum of Science and Industry, said, "This day has been years in the making. It required a great deal of vision, hard work and the very generous support of so many from Chicago and around the world. It is an honor to be in the company of so many people who care for the preservation of this submarine, especially our courageous veterans, their families and the countless donors".

The U-505 is the only maritime vessel of its type on display in the United States and will be the first to be moved indoors. The remaining four U-boats in the world in Germany and England are outdoors. The restored and relocated sub will be the centerpiece of the new U-505 experience, an exhibit that will immerse visitors in the dramatic story of the search for and heroic capture of the U-505. The new exhibit will open in the spring of 2005.

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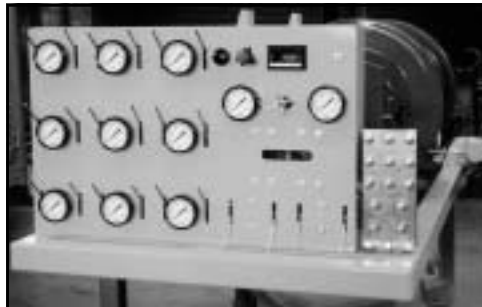


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Some Interesting Statistics About the Submarine and Second Move

- Actual planning for the move occurred over two years.
- Age of the U-505 is 63 years.
- The vessel was lowered four inches at a time into a new four-story deep hole.
- The original life expectancy of a World War II submarine in years was five.
- The vessel was moved on 144 tires on 18 dollies.
- The weight of the submarine was 700 tons.
- Cubic yards required covering the roof of the new exhibit hall, 15,000.
- Cost to install the U-505 in 1954, \$250,000.
- Cost of restoration, new exhibition hall and relocation of submarine in 2004, \$36,000,000.

The Principles are the same, only the Equipment is New.

In an April 9, 2004 article by Andrew Herrmann, Staff Reporter, Chicago Sun-Times, reported David Mosen, president and CEO, Chicago Museum of Science and Industry, “joked that the museum previously moved two trains, a 727 jet and a NASA space capsule “and we haven’t dropped anything yet”. That probably is true since the Museum has made it a practice to engage “professional structural moving companies” to do the actual moves.

Just as the LaPlant Company from Indianapolis, Indiana was contracted fifty years ago to move the submarine originally, the Museum issued Requests For Proposals (RFP’s) in 2000 for the second move that occurred in April of this year, four years after solicitations were issued. Interestingly the company that ultimately moved the submarine, NORSAR, was known as ETALCO when the RFP’s were issued. When two major contrac-

tors reneged on contracts that ETALCO had completed, a negative cash flow, coupled with litigation costs, pushed ETALCO into Chapter 7 bankruptcy. Greg Nordholm, owner of ETALCO, formed a joint venture, NORSAR, between himself and Sarens, a European heavy lift and transport and crane rental company. The equipment used to perform the second move of the U-505, dollies, jacking and sliding, was the property of ETALCO, a company that has been providing engineering, equipment and supervision to accomplish heavy lifts and transport projects in the United States and throughout the world since 1976.

The task performed in 2004

Remove a sixty-three years old submarine 262 feet in length and weighing 700 tons from its current pedestal, transfer it 1,000 feet and lower it into a 75 x 300 x 42-foot deep underground exhibit hall.

On 15 March the team removed the steel fencing south of the Henry



Aerial view of submarine moving from a display pedestal on which it sat since 1955 to a new underground home alongside the Chicago Museum (shown at bottom of photo).

Crown Space Center. The path the dollies traveled was leveled to within 10 inches of level for any span of 120 feet using clay, sand and gravel. In areas where surfaces could not support tread pressures of dolly tires; the team used a combination of Dura Mat and road plate. On 30 March the team began jacking the submarine off its existing foundations and transferring weight to dollies. In order to limit the amount of stress on the side structure of the sub's hull, NORSAR fabricated lifting frames that were passed under the keel at each of six jacking points. Once jacking frame and jacks were installed at each support location, the jacks were pressurized to take the load calculated for that support so the existing support pressure became void. With the existing support unloaded, a diamond cutter was used to cut away the concrete foundation.

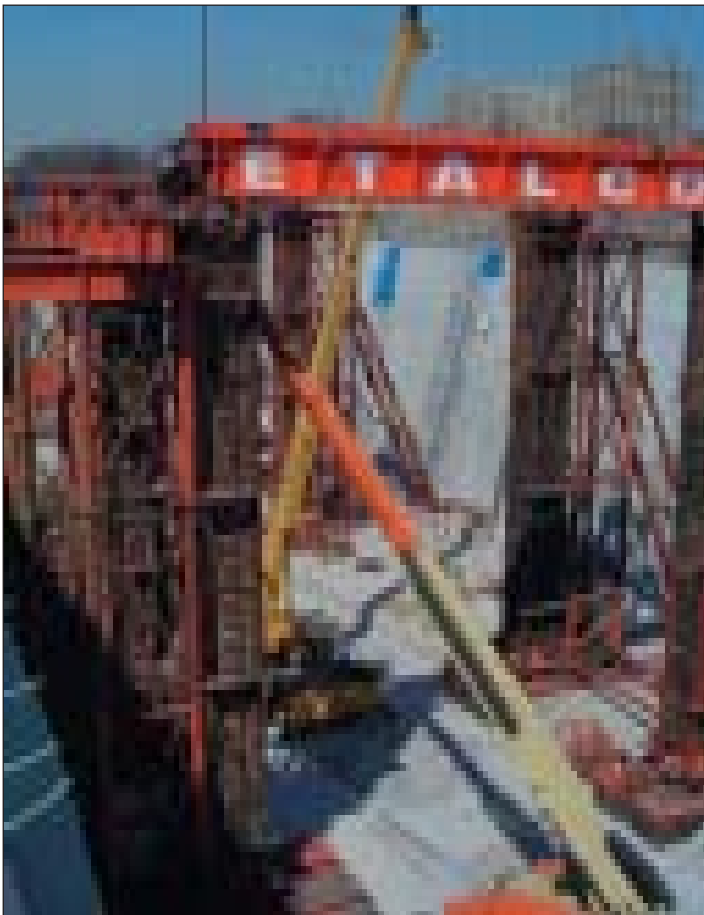
The jacks used were ETALCO climbing jacks. While an established European tool, the jacks have been unusual in the U.S. rigging industry. (NORSAR Project Engineer Ralph DiCaprio explained: "We designed jacking frames that could be inserted under the keel and then would clamp onto the keel when jacking forces were applied. This approach was taken in order to prevent any welding or cutting on the hull. These jacking brackets were then used to secure the submarine during its move on dollies and skidding



Moving from permanent pedestal on ETALCO dollies.



ETALCO dollies carry the load.



ETALCO Jacking System.



Close up of the jacking system.

and then jack down into the final resting place. The jacking towers used in the pit were unique. They were actually guides for our cribbing material. The jacks were positioned at the bottom of the tower so the cribbing material could be pulled at the base. This gave us the most secure jacking system possible”)

On Thursday 8 April the boat began its first leg and traveled south approximately...

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Submarine has been skidded over the pit for lowering.



Moving to new home location.



Ralph DiCaprio, NOR SAR Engineered Transport & Lifting, Project Manger for the relocation.



Submarine lowered halfway into the pit of its new home.