BUSINESS PLAN TO SAVE AND RELOCATE THE USS CLAMAGORE SS-343

CLAMAGORE RESTORATION AND MAINTENANCE ASSOCIATION

A plan to relocate the CLAMAGORE SS-343 submarine from Patriot's Point, Mount Pleasant, South Carolina to a land berth communal with the CSS HUNLEY museum in North Charleston, South Carolina.

Contents

EXECUTIVE SUMMARY

MISSION STATEMENT – To save, relocate and restore the *USS CLAMAGORE SS 343.* To relocate submarine from Patriot's Point, Mount Pleasant, South Carolina to a land berth communal with the *CSS HUNLEY* museum in North Charleston, South Carolina. And to preserve the last of her kind of World War II submarine to a condition suitable to serve as a submarine museum and memorial for future generations.

ORGANIZATIONAL INFORMATION – The *CLAMAGORE* Restoration and Maintenance Association (CRAMA) is a 501.c (3) dedicated to saving the *USS CLAMAGORE SS 343,* a national historic site (June, 1989), from destruction. The organization is located in North Charleston, South Carolina. The organization wishes to maintain the submarine as a museum where visitors can experience life onboard a WWII submarine. CRAMA is connected directly to local organizations: United States Submarine Veterans, Inc., World War II Submarine Veterans, Fleet Reserve Association, the American Legion, Veterans of Foreign Wars, Disabled American Veterans, Charleston Shipyard retirees and other professional organizations with similar interest.

GROWTH HIGHLIGHTS – Over $35,000 have been collected to 'SAVE THE CLAMAGORE'. CRAMA is currently working with other individuals and groups to continue fund raising. There are thousands of interested citizens in the tri-county area willing to get this goal achieved. Until a land site is identified, CRAMA is not raising any additional funds.

ORGANIZATIONAL SUPPORT REQUIREMENTS – CRAMA envisions a land locked USS *CLAMAGORE* complementing the park where *CSS HUNLEY* will be displayed. All that is required is an acre of land where the *CLAMAGORE* will be placed ashore for display. The organization requires political coordination in obtaining this land allocation. Moving the submarine and getting her ashore is estimated to be between one and two million dollars.

ORGANIZATIONAL DESCRIPTION – CRAMA members are experienced submariners with thousands of man-years spent in submarines, submarine tenders, shipyards, intermediate maintenance units, submarine overhaul and test teams. With sufficient funds CRAMA is independently capable of supervising the move, restoration, and maintenance of the *USS CLAMAGORE*.

ORGANIZATION MOTIVATION – CRAMA is motivated to save the *USS CLAMAGORE SS 343,* the last diesel submarine of her kind from World War II, as a museum for future generations. Without *USS CLAMAGORE SS 343* a piece of history will be lost and citizens will no longer see evidence of a Cold War submarine designed to transition submarine strategies from diesel power to nuclear power. CLAMAGORE is the last and only remaining GUPPY III submarine. See Appendix. CRAMA strongly believes *USS CLAMAGORE SS 343* should be preserved as a memorial to all those submariners who served during WW II, the Korean War, the Vietnam War, and the Cold War and when collocated with the *CSS HUNLEY,* the Civil War. The public will have two submarines to tour, each unique, each one-of-her kind submarine.

ORGANIZATION FUNDING – CRAMA intends to support this mission financially through donations from individuals, organizations, veteran groups; and through historical preservation grants. Other sources of income not yet identified will be approached for donations. CRAMA's model for fund raising will be based on the model that was used to get the Cold War Memorial built in Mount Pleasant, South Carolina. Also, federal grants will be sought for restoration and maintenance of a National Historic Site.

ORGANIZATIONAL NEED – The most pressing requirement other than funding is finding a suitable site and obtaining signed agreement to provide the space needed to berth *CLAMAGORE* ashore.

PRODUCT AND SERVICES

PRODUCT – CRAMA's product will be a restored, land-locked, fully maintained GUPPY III Class WW II submarine.

SERVICES – CRAMA will provide all the restoration, maintenance, customer services, logistics, docents, technical support and all like services in the maintenance of a land-locked submarine museum.

PRODUCT AND SERVICE MODEL – CRAMA will construct their product and services model after the one successfully used by Mobile, Alabama to bring together the *USS DRUM SS 228 /USS ALABAMA* BB 60 into a single park. See Appendix. CRAMA's model will be designed to increase the attendance and enhance the financial gain of the *CSS HUNLEY* museum. The *USS CLAMAGORE* SS 343 is a favorite tour site for visitors to Patriots' Point. CRAMA predicts an increase in park attendance, once *CLAMAGORE* is paired with *HUNLEY*. Each vessel represents a one-of-a-kind submarine, both consisting of top-notch technology for her time of service.

PRODUCT AND SERVICE SHIP STORE – CRAMA envisions a ship store similar to those found at Patriots' Point and the current *CSS HUNLEY*'s restoration site. Revenue received from sales of *CLAMAGORE* items will be used to off-set operating cost. It is believed that sales synergy would be obtained if each store were housed together.

COMMUNITY BENEFIT FROM PRODUCT AND SERVICE - CRAMA's plans call for long-term community participation, including the boy scouts and girl scouts. CRAMA will hold free cookouts, supervised overnights for small groups like the *USS YORKTOWN*'s program. This would provide additional recognition for North Charleston's commitment to military veterans and memorials. Submarine reunions, national, local, Southeastern conventions will be encouraged to include *HUNLEY* Park in their planning and to stay in North Charleston resulting in increased tourist dollars.

OPERATIONAL PLAN

USS CLAMAGORE RELOCATION – CRAMA's operational plan meets two significant goals: 1) It meets Patriots' Point long-term plan to eliminate the *USS CLAMAGORE SS 343* as a historical component of its business operation, and 2) Provides the United States Navy, owner of the submarine, with a significantly improved option over Patriots' Point plan to reef the *USS CLAMAGORE SS 343.* CRAMA's operational plan includes elements to fill all the current short comings *CLAMAGORE* has endured over the past several years while docked at Patriots' Point; zero maintenance, no maintenance funds, limited volunteer maintenance service, advertising neglect, and lack of submarine knowledgeable leadership. Lack of leadership educated in submarines at Patriots' Point has contributed to a general loss of interest in the preservation of the *USS CLAMAGORE SS 343. CRAMA's* organization will provide a fully experienced Executive Director qualified in all aspects of submarine history, operations, and maintenance. CRAMA is composed of dedicated submariners, officer and enlisted, motivated to save the *CLAMAGORE.* CRAMA members will be the service volunteers for the submarine at its new location.

IMMEDIATE ORGANIZATIONAL ACTION – CRAMA's first 'GO, NO GO' action is to obtain the needed land site for *CLAMAGORE*. CRAMA's leadership will present their plan to the Lieutenant Governor of South Carolina and to the City of North Charleston's leadership requesting land at the site where *CSS HUNLEY* is to be displayed for tourist. CRAMA's request from North Charleston is for approximately one acre of land space to bring *CLAMAGORE* ashore. By land-locking the submarine, future hull maintenance requirements will be minimized. CRAMA will provide all future hull maintenance requirements as they do today for the torpedo boat *DAVID* housed ashore in Moncks Corner, South Carolina. *DAVID* is an annual maintenance task for members associated with and a part of CRAMA. The City of Moncks Corner proudly displays the boat and CRAMA is proud to be apart.

SUBMARINE PREPARATION FOR RELOCATION – Once a definite land site is identified and approved, *USS CLAMAGORE SS 343* will be prepared for her move up river. One of the first actions to complete is to call for competitive bids to purchase and remove the submarines' 504 lead-acid batteries. Each of the batteries weighs more than 1000 pounds. Using 2013 U.S. scrap price of approximately $0.50 per pound for scrape lead, generated gross income could exceed $500,000. This evolution would also reduce the surface weight of *CLAMAGORE* by about half a million pounds. Being very much lighter, the submarine will be easier to get ashore resulting in less relocation cost. The additional benefit is eliminating any environmental issues over lead-acid storage batteries stored onboard.

KEY ORGANIZATONAL MANAGEMENT PRINCIPLE – CRAMA's only interest is completing our Mission Statement, SAVE THE CLAMAGORE! The organization supports any organization working toward the same goal. The above mentioned funds will be managed by CRAMA's Executive Board. CRAMA accumulated funds are to be used exclusively to save the submarine, *USS CLAMAGORE SS 343*. CRAMA does not support Patriots' Point's plan to reef the submarine ergo we oppose Patriots' Point Executive Board in any of the board's efforts to reap funds from the salvage of *CLAMAGORE's* batteries and then use those funds in the interest of Patriots' Point whose long-term plans and interest are uncertain.

LOGISTICS OF DAILY OPERATIONS – Once on land *CLAMAGORE's* daily operation will match the operational tempo of *CSS HUNLEY*'s operations. Most labor will be provided by volunteers. As part of *CSS HUNLEY* Park, visitor parking will already be available. Other benefits to collocating *CLAMAGORE* here is the umbrella provided by the *HUNLEY*'s permits, licensing, insurance, bonding, etc. provided by any government organization allowing a public access park. CRAMA will be the key CLAMAGORE operating organization providing all services and volunteers. Submarine volunteers have provided volunteer services over all these years *CLAMAGORE* has been docked at Patriots' Point. Submariners also provide engineering tours onboard the *YORKTOWN* to young Naval Nuclear Power students.

SHORT-TERM PLAN OF ACTION

GAIN POLITICAL SUPPORT – Solicit guidance and support from the Lt Governor of South Carolina in achieving CRAMA's mission of locating a land-based berth.

- **Provide the Lt Governor with a copy of CRAMA's Business Plan**
- **Seek a meeting with the Lt Governor for CRAMA to present their Business Plan's Executive Summary**
- **Seek a meeting with the Mayor of North Charleston and his City Council to give the same presentation as that given to the Lt Governor of South Carolina**

ACHIEVE IMMEDIATE FINANCIAL REQUIREMENTS

- **Use current on-hand funds plus additional collected monies for start-up**
- **CRAMA reimburse individual members for expenditures in obtaining 501c(3)**
- **Create a timeline following submarine location approval**
- **Designate leadership team to negotiate with local firms to move the submarine from Patriots' Point to her new location**
- **Treasurer to hire financial services organization**
- **Advertise local Post Office Box for correspondence and business**
- **Request assistance from *USS DRUM SS 228*/*USS ALABAMA* team**
- **Determine total financial obligation to achieve the goal**
- **Identify major campaign contributors, local and national**

LONG-TERM PLAN OF ACTION

SALVAGE AND SALE – The *USS CLAMAGORE SS 343* contains elements that are not needed or desired to sustain her as a museum. Two items immediately ready for yielding cash are the submarines 504 lead-acid batteries, each

weighing 1008 pounds when new. Taken at current scrape metal market value of $0.50 per pound substantial monies can be generated by salvaging and selling the batteries. All toll, the lead-acid batteries could yield gross income of several hundreds of thousands of dollars.

Other income generating elements are the lead weights found in the ballast tanks of submarines. Taken onboard for additional ballast, removal and sale of these lead ingots produced $140,000 (several years ago) for the *USS DRUM SS 228* preservation and restoration team. Using local submarine volunteers for labor and expertise, these funds contributed significantly to the complete restoration of the *DRUM*'s hull.

LONG-TERM MAINTENANCE – Once the *CLAMAGORE* is out of the water and restored, CRAMA will provide all the maintenance necessary to keep the museum ship shape. CRAMA's plan is to house the submarine in such a way that preservation can be achieved all around the boat. One idea is to set her upon catenary-shaped concrete forms. This method was chosen for the *DRUM.* By designing the method of berthing for easy underneath access (off the ground), maintenance cost should be reduced to annual upkeep. Maintenance of inside the boat will be accomplished as routine field-day cleaning.

POWER AND UTILITIES – Since it is anticipated that activities will be provided onboard the submarine (as they are onboard the *YORKTOWN*); tours will be given, groups will visit, and shopping in the site store will occur as it does in the *CSS HUNLEY*'s store today. Electricity, lighting, and air conditioning will be required onboard the boat. These plans will be negotiated later.

SUBMARINE SECURITY – CRAMA will provide a security system and locking mechanism to secure the submarine. The *CLAMAGORE* will be closed and secured commensurate with the *CSS HUNLEY*'s end of business day.

INVEST IN SHIP'S STORE INVENTORY – CRAMA will negotiate with Patriots' Point to purchase their entire CLAMAGORE inventory currently housed in the *YORKTOWN*/Patriots' Point store. Ideally, this inventory will be located within the *CSS HUNLEY*'s Ship Store. Tourist and visitors will have the opportunity to

purchase items from a larger (combined) inventory. CRAMA will add many new items for sale in the store, e.g. challenge coins, specialized shirts, jerseys, hats and lots more. Profits will be used to offset operating cost of the store and to provide maintenance funds.

MARKET THE CLAMAGORE – Create new business opportunities for the relocated *CLAMAGORE*. Provide services never offered at Patriots' Point. Important submarine celebrations could be held at the park with fund raising cookouts; boy and girl scouts supervised sleep overs with meals, etc. Provide *CLAMAGORE* as a shooting site for future Hollywood filming in the North Charleston area where such a site is suitable. Aggressive marketing will bring in funds not yet identified.

ADVERTISE CLAMAGORE's NEW LOCATION – Place national advertisements in veteran group's newsletters, magazines, and clubs announcing the *CLAMAGORE*'s new location. Encourage boat reunions to North Charleston taking advantage of nearby hotels, restaurants, and facilities. Emphasize that *CSS HUNLEY* museum is a fun, safe, family oriented site. Visitors will find visiting the *CLAMAGORE* a fun way to spend a morning or an entire day. Anyone touring the *CLAMAGORE* should allow a minimum of one hour.

COMPONENT ADVERTISING - Today the submarine is advertised as a component of Patriots' Point visitor center. A tour of the boat is included in the total cost of a ticket to the *YORKTOWN* historical site. It is anticipated that *CLAMAGORE* will be a component unit of the new *CSS HUNLEY* historical site and benefit from the applied advertising given to this site. Patriots' Point drew 750,000 visitors to the YORKTOWN museum last year.

USS CLAMAGORE SS 343 RESTORATION AND RELOCATION BENEFITS

CLAMAGORE THE SCHOOLHOUSE – At any one time, the nearby Navy Nuclear Power Training Command has several hundred students awaiting classes. These students are in a state of limbo. The Commanding Officer of the school command has expressed an interest in providing some of these students the opportunity to meet with submarine veterans and to experience what

submarine life was like on WW II and Cold War era submarines. The restored and relocated *CLAMAGORE* with her volunteers, and docents, is the perfect solution. *CLAMAGORE* would provide the U.S. Navy with the perfect free training aid just a few miles from the NNPTC facility. Students could experience:

An exciting hands-on tour of a WW II/ Cold War submarine for the first time

Talk to sailors who served on these type submarines and when possible speak to actual WW II submariners

Learn about systems onboard submarines and how they work. They will discover that most modern submarine equipment are related to the equipment found onboard *CLAMAGORE*…only the power plants are different, a GUPPY III power plant versus a nuclear power plant. Principles remain the same.

CRAMA would provide submarine history videos to the students like *Victory at Sea*, *Thunder Below, Run Silent Run Deep, etc.* Just like movies were enjoyed 50 years ago on this submarine.

Knowledgeable tour guides would be available. It's submariners who give NNPTC sailors tours onboard *YORKTOWN today.* The volunteers present the history of the Battle of Coral Sea and then give tours of the engine rooms. The possibilities are numerous. And, the experience would be educable and fun.

CRAMA sees this as one of the greatest benefits gained from saving the submarine, and a great opportunity for the United States Navy. Sailors will actually experience what life's going to be like onboard their first submarine.

CLAMAGORE THE SCHOOLHOUSE II – Another benefit of restoring the submarine *is to* accommodate students of local NROTC Programs. NROTC students thinking of national service in submarines can get aboard a submarine and experience what actual conditions are like on a submarine. NROTC commanders could arrange a day at the park with scheduled tours of both submarines. Guided tours of the *CLAMAGORE* would include the same curriculum used for the NNPTC students. They too could enjoy onboard movies.

CLAMAGORE/HUNLEY A WINNING COMBO FOR NORTH CHARLESTON - *USS CLAMAGORE and CSS HUNLEY* can become the future for an unparalleled national museum dedicated to the history of the Navy in North Charleston. Since Patriots' Point position is known with regards to the *USS CLAMAGORE SS 343*, the City of North Charleston can plan now to integrate the *CLAMAGORE* with the HUNLEY. Visitors and tourist interested in submarines and the Charleston Naval Shipyard would include this museum during their visit to the area. This park has a solid foundation for expanding on Charleston Naval Shipyard history. By adding the *USS CLAMAGORE SS 343* to the museum's attractions, tourist and visitors will actually see, walk through, feel, and hear about a Cold War submarine. Although the *CSS HUNLEY* is the main attraction, visitors and tourist can only 'look-n-read' about the actual vessel. The *USS CLAMAGORE SS 343* adds to their experience by providing access to an actual submarine where they can walk around in it, see films about it, talk to those who sailed in her or other submarines, and purchase submarine memorabilia. CRAMA's leadership believes the contributions provided by collocating *CLAMAGORE* with *HUNLEY* will add to the bottom line of the City of North Charleston's financial statement.

UNEXPECTED BENEFIT – The sheer beauty of the *USS CLAMAGORE SS 343* silhouette once she is berthed ashore will astound all those within viewing distance. CRAMA envisions a beautiful design using the Cooper River as the backdrop. It is also the *CLAMAGORE* visitors and tourist to Patriots' Point wish to see and tour once they learn she is moored there. The general public fined submarines interesting and will spend money to be given a guided tour on one.

CRAMA's ADVANTAGES

CRAMA EXPERIENCE AND LEADERSHIP – CRAMA is an organization dedicated solely to the preservation of the *USS CLAMAGORE SS 343*. Leadership's focus will be singularly concentrated instead of dispersed over numerous units as is required of Patriots' Point leadership. Whereas Patriots' Point leadership has zero submarine experience, CRAMA leadership and members have extensive experience in every type of submarine evolution. Many retired submariners

finished another full career at the Charleston Naval Shipyard completing all aspects of submarine maintenance requirements. CRAMA leadership has access to larger submarine maintenance resources including the local United States Submarine Veterans, Inc. Charleston Base. Within this group, CRAMA has access to thousands of man-years of experience.

CRAMA LOCATION – CRAMA is located in North Charleston ready to support and respond immediately to outside issues involving the *CLAMAGORE.*

STABLE LEADERSHIP – CRAMA will provide a stable leadership structure. Patriots' Point has had numerous Executive Directors and over the years. Turnover has caused problems for Patriots' Point as important maintenance issues fell through the hole. Other paid staff is not navy nor are they submarine preservation oriented.

KNOWLEDGEABLE LEADERSHIP – CRAMA leadership is entirely composed of experienced submariners. This leadership has access to other submarine organizations experienced in every aspect of submarine operations, maintenance, and repair. CRAMA is entirely motivated and focused on relocating, preserving and restoring the *USS CLAMAGORE SS 343.* CRAMA's ability to call upon its assets of likeminded submarines leaves no doubt the mission will be completed on time and within budget. CRAMA leadership and submarine experience is our greatest asset.

CRAMA's DISADVANTAGES

POLITICAL INFLUENCE – CRAMA requires political involvement and support in relocating the *USS CLAMAGORE SS 343* to a suitable site, preferably a land site where the *CSS HUNLEY* is to be located. Without completing this first milestone of identifying and gaining approval for a land site the mission is in jeopardy.

FUNDING SHORTFALL- CRAMA has about one year to come up with sufficient funds to accomplish their mission. Patriots' Point estimate to save the *CLAMAGORE* is advertised to be around three million dollars. But, this plan included a complete overhaul of *CLAMAGORE* because Patriots' Point estimate

is based on the assumption that the *CLAMAGORE* would return to Patriots' Point and remain waterborne. CRAMA's plans to berth *CLAMAGORE* ashore which eliminates the requirement for a complete submarine overhaul. Ashore the submarine only requires superstructure cosmetic maintenance. Being cradle housed ashore, structural corrosion leading to a sinking will never again be an issue. Once ashore, restoration and maintenance can then be accomplished at a reasonable pace.

LACK OF FUND RAISING EXPERIENCE – CRAMA lacks high-level fund raising experience. There are members on CRAMA's board experienced in high-level briefs, but not directly related to fund raising. CRAMA will approach retired high-level navy leadership to help in this area. CRAMA will also seek the help of those who raised the funds necessary to build the Cold War Memorial. Another option is to hire professionals in the field of fund raising.

LACK OF MARKETING EXPERIENCE – CRAMA will investigate 'pro-bono' help in this area from SCORE's retired business executives and Charleston professional organizations.

FINANCIAL PLANS

CURRENT FINANCIAL PLAN

CRAMA's relocation, restoration and maintenance financial planning is on hold until an approved land grant is procured to berth *USS CLAMAGORE SS 343.* Without a berth ashore, fundraising is moot. Once the land grant is obtained, CRAMA's financial plan is designed to seek assistance from highly qualified, professional fundraisers. Additionally, CRAMA's Board of Directors will request donations from major civilian and military corporations. Individual donations will be requested. Applications for grants will be written. Preservation of historical landsite grants will be sought as well.

FUTURE FINANCIAL PLAN

It is CRAMA's contention that co-locating the *CSS HUNLEY and USS CLAMAGORE* at the same site will yield a financial synergy to *CSS HUNLEY* Park's bottom line. Not only will *USS CLAMAGORE* complement the *CSS HUNLEY's* submarine history, she will add to the attraction by peaking public interest to visit the park. Once *USS CLAMAGORE SS 343* is placed upon land, CRAMA foresees all financial assets and obligations being included in the operational budget of *HUNLEY* Park. It is predicted that about 250,000 visitors would visit the park during the first year of operation. The financial sheet from Patriots Point is provided in the Appendix as an example of net income North Charleston's City Council could expect to gain from a multi-ship (submarines) museum.

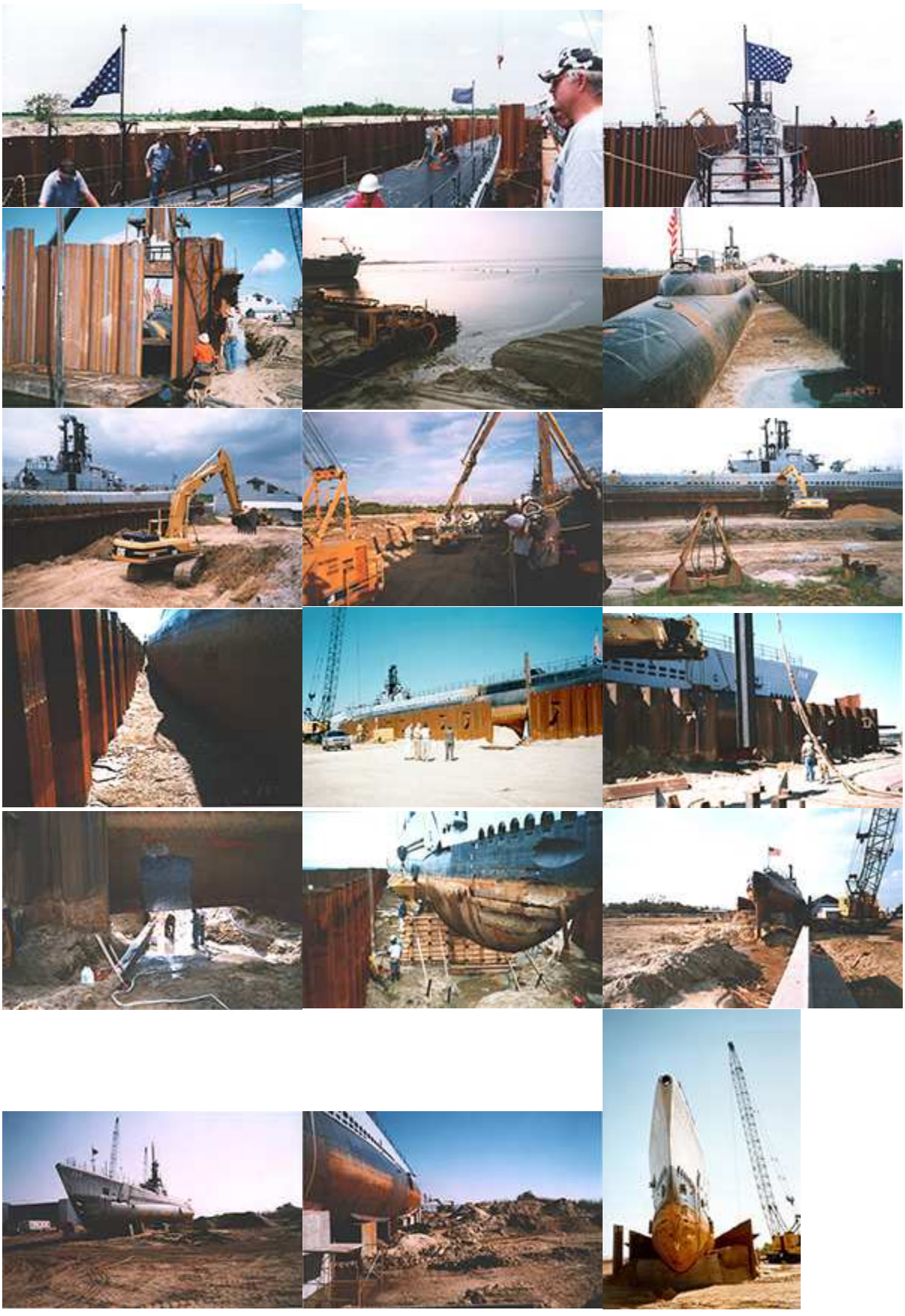
THE MOVING PLAN

CRAMA's MOVING PLAN MODEL IS BASED ON THE PROVEN USS DRUM MOVE –

Total cost of this move in 2001 dollars was only $1.4 million ($1.8 in 2012 dollars)

Beginning in the early summer of 2001, the *Drum* was moved from the muddy Gulf of Mexico waters beside the USS *Alabama* battleship and placed on dry land on a permanent fixture beside the newly constructed pavilion. Volkert & Associates, Inc., an engineering design firm, handled the move. This was done by digging a small canal, flooding the canal, floating the boat into the canal with the help of tugboats, and then draining the canal. Then she was placed upon and chained to large, concrete cradles. The approximate cost of this move was $1.4 million. The feat earned numerous awards for engineering.

The photos of the move to land below were provided to me by Volkert & Associates, Inc. to use on this website. Please click on any of the images below to see a larger version.



Top: 2001, Bottom: 2009

A major reason for the move was for preservation. Not long after being placed on land, the *Drum* was sandblasted and painted.

Besides the exterior concerns, the interior also has maintenance and restoration issues. She is showing her age! Volunteers are always needed to help in any way they can.

You may not know that Battleship Memorial Park operates independently from tax funds. Therefore, revenue from visitor admission to the Park and proceeds from sales in the gift shop are spread around thinly. Visitor traffic and awareness are vital for the future of the *Drum*!

Thanks to NavSource.org for many of the photos you see on this page.

III The USS MARLIN SST 2 Story

The *USS MARLIN SST 2* submarine is so much smaller than USS CLAMAGORE SS 343 that no valuable data about cost of relocation, restoration and maintenance could be extracted for CRAMA's use. Her move to Omaha, Nebraska included train expenses. The cost to place her on land was not comparable to the cost expenditures of the other land based submarine memorials.

ENGINEERING DESIGN APPROACH

CRAMA's Engineering Director will contact the Engineering School of Clemson University, in Greenville, South Carolina to investigate if the

school would participate in providing engineering designs for the project. As an initial approach, Clemson University Engineering professors would be given presentations on what engineering is required to move the USS C*LAMAGORE SS 343* from Patriots' Point to an identified site. CRAMA's Engineering Director's design approach is to create a design similar to those proven designs produced by other engineers who successfully engineered submarine land-based memorials . There may be cost savings using this engineering approach. Hopefully, the university may take this project on free-lance; or, assign the project to graduate students as their project under his guidance, direction and approval. Possibly the university could receive a grant to fund the engineering design. By using this approach, significant relocation cost reductions are possible.

LESSONS LEARNED FROM *USS DRUM SS 228's* MOVE

- **The actual cost of the move was $1.4 million in 2001 dollars ($1.8 million in 2012 dollars)**
- **The submarine is pristine, not like the corroding submarine found at Patriots' Point**
- **Moving the *USS CLAMAGORE SS 343* ashore is doable and much less costly than first estimated**
- **An experienced engineering company has already executed an exact move within an affordable budget**
- **Once CRAMA salvages and sales the 504 lead-acid batteries aboard *USS CLAMAGORE* sufficient funds will be available to start this move**
- ***USS CLAMAGORE SS 343* is going to be a beautiful addition to the *HUNLEY mesum***

- ***USS CLAMAGORE SS 343*** **will not require an extensive dry docking overhaul**

- **Most repairs are only cosmetic in nature given *CLAMAGORE* is on land**

- **Other submarine mounting is possible, but this method is hurricane proof**

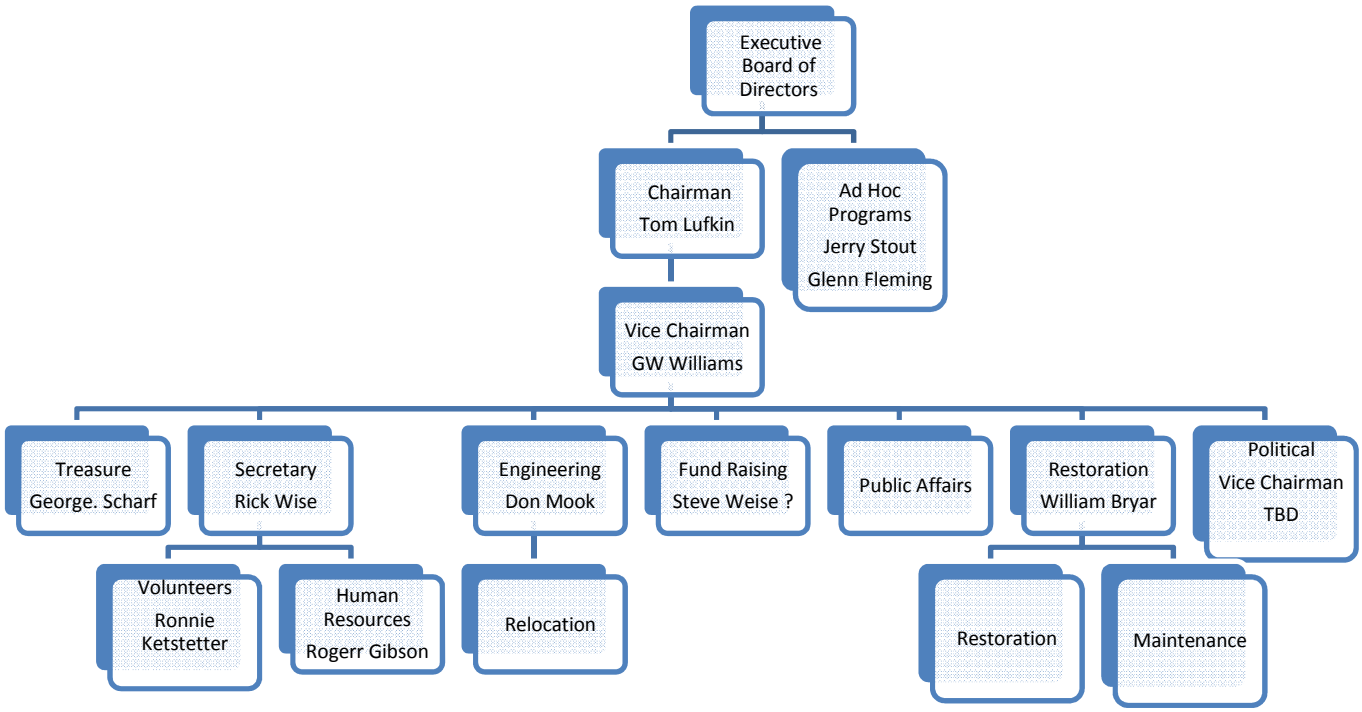
- **Volkert & Association, Inc. is a Mobile, Alabama company. CRAMA should find a local engineering company to do the work at a comparable cost. CRAMA should keep the funds and jobs in the local economy**

- ***CLAMAGORE*** **will require a smaller cradle than that shown for USS DRUM**

Volker & Associates, Inc. has an office in Columbia, South Carolina:

1201 Main Street, Suite 1980 (803) 788-6648

CRAMA NONPROFIT ORGANIZATION CHART



Board of Directors

Chairman	Don Mook	Jerry Stout
Vice Chairman	William Bryar	Ronnie Ketstetter
Secretary	Glenn Fleming	George Scharf
Treasurer	Roger Gibson	Jack Harden

Board of Directors Resumes

Mr. Jack Harden has extensive operation, repair, overhaul and test experience in submarine cryptographic systems. Mr. Harden's managerial experience while assigned to Naval Security Group Activity, Charleston, South Carolina included responsibility for highly classified submarine

Communication Security Material Systems. Following his navy retirement, Mr. Harden was employed by TDS, Inc. in Charleston, South Carolina. He served TDS, Inc. as a cryptologic compliance officer and adviser on national communication security.

Mr. Ronnie Kerstetter is a trained industrial and environmental chemist. He was employed as a manager for Dupont/DAK America, LLC where his responsibilities encompassed all aspects of the safe operation and maintenance of surface and wastewater treatment plants. Mr. Kerstetter's background correspondingly included shipboard piping design while employed by the Charleston Naval Shipyard. Mr. Kerstetter applied years of naval training as a nuclear trained submariner. His piping designs met all the stringent requirements of naval regulations for shipboard use.

Mr. Rick Wise is the Director of Maintenance for the **CSS DAVID** replica located as part of the Berkeley County Museum in Moncks Corner, South Carolina. As Director, he is responsible for ensuring that ***CSS DAVID*** is maintained in appearance suitable for 24/7 outside display. Maintenance is performed to keep this historic torpedo boat in top-notch condition for public visits to the museum. The City of Moncks Corner has acknowledged Mr. Wise and his team. Without them, the future of the little **DAVID** would be in doubt because of the deterioration she would experience. Additionally, Mr. Wise has in excess of 30 years naval employment with the USN and the Charleston Naval Shipyard.

Mr. Jerry Stout spent more than 20 years in the United States Navy supervising and managing electronic teams responsible for completing complex engineering shipboard installations, alterations and acceptance testing. Mr. Stout completed three major shipyard overhauls and is experienced in all phases of submarine rip out, restoration, installation, testing, and maintenance of submarine electronic equipment. Mr. Stout managed technicians as Officer-in-Charge of a highly classified submarine project. His leadership led to the successful delivery of the specialized electronic system.

Mr. G.W. Williams retired from the United States Navy. Following retirement, he spent 20 years as an engineer and engineering program director for major defense contractors. While employed by Lockheed Martin Government Systems Division, Mr. Williams led a team of 275 engineers responsible for back fit engineering and overhaul of Aegis Weapon System equipped ships. As a company director he managed contracts in excess of 30 million dollars annually. He briefed high ranking officers including PMS 400.

Mr. Tom Lufkin is a retired nuclear trained submarine leader. Following naval service, Mr. Lufkin was employed by the Charleston Naval Shipyard as a submarine test engineer and submarine type desk planner. Mr. Lufkin's career responsibilities increased as he continued his service to the United States Coast Guard as director of software engineering. Mr. Lufkin has long-term experience interfacing with high-level government officials. His position as White House IT Program Manager brought him in contact with all levels of government, leading to Mr. Lufkin's last position in government as CIO for Health and Human Services. Mr. Lufkin is the Chairman of CRAMA.

Mr. Donald Mook is a 20 year, nuclear trained navy electrical engineering technician. During those years, Mr. Mook supervised three (3) nuclear refueling overhauls. As a senior nuclear trained engineer, Mr. Mook managed every aspect of submarine power engineering. In addition, Mr. Mook was a ship superintendent at the Charleston Naval Shipyard. In this role he managed the conversion of two active fleet submarines to Naval Nuclear Power Training Units currently located at the Naval Weapon Station. Mr. Mook is a volunteer at Patriots Point.

Mr. William Bryar is a retired navy submariner experienced in all aspects of submarine structural mechanics including piping, hydraulics, air systems, compressors, refrigeration, and other hull related systems involving diving and surfacing submarines. Following his naval service, Mr. Bryar was employed by Detyan's Shipyard as a steam propulsion and auxiliary systems

engineer. Mr. Bryar was employed by General Dynamic's Electric Boat as a structural test engineer.

Mr. Roger Gibson is the most experienced diesel submariner on the board. He has extensive knowledge of submarine power, electrical systems and main propulsion. Mr. Gibson is an expert in battery cooling and agnation systems. Serving onboard nuclear power submarines, Mr. Gibson took submarines through shipyard commissioning and nuclear conversion. After retirement, Mr. Gibson was employed by Amoco Chemicals as an Instrumentation and Electrical engineer responsible for electrical power to operational controls. Mr. Gibson is qualified in diesel generator power distribution.

Mr. George Scharf has extensive operation, repair, overhaul and test experience in submarine and surface communication systems. His capabilities include overhaul management at Newport News Shipbuilding & Dry dock Company. During his 20 years naval service, Mr. Scharf served over four years supervising new construction and overhaul of nuclear power submarines. Mr. Scharf continued his managing expertise after naval retirement by creating and operating a successful small business. Mr. Scharf is a certified Emergency Medical Technician

FINANCIAL PLANS

CURRENT FINANCIAL PLAN

CRAMA's relocation, restoration and maintenance financial planning is on hold until an approved land grant is procured to berth *USS CLAMAGORE SS 343.* Without a berth ashore, fundraising is moot. Once the land grant is obtained, CRAMA's financial plan is designed to seek assistance from highly qualified, professional fundraisers. Additionally, CRAMA's Board of Directors will request donations from

major civilian and military corporations. Individual donations will be requested. Applications for grants will be written. Preservation of historical landsite grants will be sought as well.

FUTURE FINANCIAL PLAN

It is CRAMA's contention that co-locating the *CSS HUNLEY and USS CLAMAGORE* at the same site will yield a financial synergy to *CSS HUNLEY* Park's bottom line. Not only will *USS CLAMAGORE* complement the *CSS HUNLEY's* submarine history, she will add to the attraction by peaking public interest to visit the park. Once *USS CLAMAGORE SS 343* is placed upon land, CRAMA foresees all financial assets and obligations being included in the operational budget of *HUNLEY* Park. It is predicted that about 250,000 visitors would visit the park during the first year of operation. The financial sheet from Patriots Point is provided in the Appendix as an example of net income North Charleston's City Council could expect to gain from a multi-ship (submarines) museum.

APPENDIX

HISTORY OF THE USS CLAMAGORE

Specs

dp. 1870 tons (surf.) 2391 tons (subm.); l. 311.7'; b. 27';
s. 20.25k (surf.) 8.5 (subm.); td. 400'; a. 6-21" tt. fwd., 4-21" tt. aft.;
c. 6 officers, 60 enlisted men; cl: "Balao"

Keel Laid down by Electric Boat Division of General Dynamics Corp., Groton, CT 16MAR44;
Launched: 25FEB45 with Miss Mary Jane Jacobs sponsoring;
Commissioned: 28JUN45 with Cdr Sam Colby Loomis, Jr., in command;
Decommissioned: 12JUN75 and struck from the Navy List 27JUN75;
Serving as Museum Ship at Patriot's Point, Charleston, South Carolina.

World War II came to end while *USS CLAMAGORE* (SS-343) was on a training cruise off Panama. In January, 1946, *CLAMAGORE* became Flagship of Submarine Squadron FOUR based in Key West, Florida. *CLAMAGORE* carried the Squadron Flag until 1 August 1959.

The U.S. Naval Shipyard, Philadelphia, Pennsylvania, was the site of *CLAMAGORE*'s conversion to high speed GUPPY II (Greater Underwater Propulsion Power) submarine in the spring and summer of 1948. During this conversion, she received the snorkel installation.

During 1949 Fleet Tactical Exercise, *CLAMAGORE* was accorded the honor of being selected Flagship for Vice Admiral Duncan, USN, Commander Task Fleet, and Rear Admiral Fife, USN, Commander Submarine Force, U.S. Atlantic Fleet.

During 1955 *CLAMAGORE* made two trips to Guantanamo Bay, Cuba, rendering services to the Fleet Training Group for the periods 25 March to 25 April and 22 August to 16 September. Other ports visited during 1955 were Havana, Fort Lauderdale, and Pensacola, Florida. In November *CLAMAGORE* entered Charleston Naval Shipyard for installation of a new battery.

Upon leaving the shipyard in February, 1956, *CLAMAGORE* returned to Key West for operations. She visited Tampa, Mayport, and Miami, and Havana and Guantanamo Bay, Cuba; prior to entering the Charleston Naval Shipyard in September, 1956, for a regular scheduled overhaul.

The overhaul was completed in February, 1957, and *CLAMAGORE* went to New London Connecticut and Newport, Rhode Island prior to returning to Key West. A trip to Guantanamo Bay, Cuba preceded an extended cruise to Portsmouth, England, which was followed by liberty in Argentina, Newfoundland, on the return to Key West in December.

In February, 1958, *CLAMAGORE* participated in ASWEX 1-58. From June to August, *CLAMAGORE* was in Charleston Naval Shipyard for a battery renewal. During the local operations from Key West, V visited Savannah, Mobile, Alabama; and Tampa and Fort Lauderdale, Florida.

Local operations from Key West and a trip to Guantanamo Bay, Cuba were made from January to April, 1959. In April, *CLAMAGORE* participated in Exercise LANTBEX 1-59 and returned to Key West in June. The arrival of *CLAMAGORE* at Charleston Naval Shipyard for an overhaul on 29 June coincided with the change in home port of Submarine Squadron FOUR to Charleston. Overhaul was completed in December. From April to July, 1960 *CLAMAGORE* served with the U.S. Sixth Fleet in the Mediterranean.

During January and February, 1961, *CLAMAGORE* participated in operation Springboard in the Caribbean. From August to December, 1961, CLAMAGORE participated in Operation UNITAS II which was a-joint antisubmarine warfare training exercise with eight South American countries: Argentina, Brazil, Chile, Colombia, Equador, Peru, Venezuela and Uruguay. During this cruise *CLAMAGORE* steamed around the southern tip of the South American Continent.

CLAMAGORE entered Charleston Naval Shipyard in May, 1962, for conversion to a GUPPY III type submarine. During this conversion, the ship was cut in half and a 15 foot, 55 ton section was added. The latest and most sophisticated electronics and fire control system were also installed.

On 2 July 1962 the new hull section was christened by Miss Ann Beshany, 16-year-old daughter of Captain P.A. Beshany, then Commander Submarine Squadron FOUR.

The conversion to a GUPPY III was completed in February, 1963. On 1 June 1963 *CLAMAGORE* changed homeports to New London, Connecticut at which time she was transferred from Submarine Squadron FOUR to Submarine Squadron TWO. During January and February of the following year, *CLAMAGORE* participated in Springboard, 1964, visiting San Juan in Puerto Rico and Saint Croix in the Virgin Islands. In late May she entered Portsmouth Naval Shipyard for battery renewal. Leaving the shipyard in July, *CLAMAGORE* visited

Portsmouth, England in September, 1964. After an extended cruise, *CLAMAGORE* returned to New London in November, 1964.

In early April, 1965, *CLAMAGORE* departed New London for a joint NATO operation south of Iceland with British, Dutch, American, and French submarines and aircraft. Upon completion of the very successful exercise, *CLAMAGORE* visited Londonderry in Northern Ireland in late May, 1965, for a wash-up conference. Following her return to New London in June; *CLAMAGORE* entered the Philadelphia Naval Shipyard on 23 July 1965. During this overhaul, *CLAMAGORE* received an extensive repair of its hydraulic system, the installation of the STEINKE Escape System, the modernization of its fire control system, and the overhaul of its main propulsion motors and generators. These and other repairs cost approximately $1,650,000. This shipyard overhaul was completed on 19 January 1966.

In early 1966 the *CLAMAGORE* was devoted to Springboard deployments and various other operational tasks. In March of 1967 *CLAMAGORE* entered Portsmouth Naval Shipyard for main battery renewal. Upon leaving the shipyard she rejoined the fleet for a Mediterranean deployment. She returned to New London in late 1967 and in March 1968 left for extensive operations in the North Atlantic. Her efforts resulted in her eight Battle "E".

After the 1968 overhaul in Philadelphia *CLAMAGORE* was engaged in type training, SSBN training cruises and local operations. In August, she headed south toward Bermuda where she participated in SUBASWEX 4-69. After more local operations out of New London, she returned to the Virgin Islands for a Weapons System Acceptance Trial.

1970 began with another Springboard deployment followed by a battery renewal. Another Mediterranean deployment followed the shipyard period where she operated extensively with aircraft, surface craft, and submersibles from various allied navies. *CLAMAGORE* then operated up and down the coast from Halifax, Nova Scotia to the Virgin Islands during much of 1971. September of 1971 found her engaged in operations in the Norwegian Sea. She spent the remainder of the 1971 in New London in upkeep and preparation for her scheduled overhaul. The 1972 overhaul was accomplished in Philadelphia. This major effort was completed in June, one month short of schedule.

The remainder of 1972 was devoted to a two-month deployment to the Caribbean encompassing refresher training, type training and a highly successful Weapons System Acceptance Trial. November 1972 saw the satisfactory completion of Successful Nuclear Weapons Acceptance Inspection.

In 1973, a month of local operations preceded a restricted availability at Portsmouth for main battery renewal and a main engine replacement. During the availability, preparations were begun for the upcoming UNITAS XIV deployment.

CLAMAGORE decommissioned 12 June 1975 and was struck from the Navy List on 27 June 1975 and now serves as a Musuem Ship at Patriot's Point, Charleston, South Carolina.

Remember When?

Then 1967 Don Ulmer (L) w/ John Spear - Now 2011 Don Ulmer (L) w/ Hal Tatlow

uyjhm

Perhaps you might want to put these on your "historical" photos portion of the Clamagore Veterans Association.

photo 1- Jack Heard is directly behind the handshake grasp of the two men in the foreground. I don't know the occasion.

photo 2- probably June of 1956 in Key West when he became CO. Looks like the cake has a submarine on it. I believe I was there if I'm recalling this correctly.... don't they throw the new CO off the side? I do remember that pretty well because it scared me!

Thanks so much. Jackie Heard

Patriots Point Budget Summary 2012-2013

Patriots Point Development Authority
Budget Summary FY 2012 - 2013

Operating and lease revenues	**FY 2012-2013**
Admissions	$ 3,600,000
Gift shop sales	1,723,000
Camping program revenues	1,615,000
Lease income	1,536,000
Parking revenue	525,000
Commission income	320,000
Event fees	160,000
Miscellaneous revenues	75,000
Total operating and lease revenues	$ 9,554,000
Non-operating revenues	
Grant Revenue	$ 40,000
Donations	2,000
Interest income	68,000
Total non-operating revenues	$ 110,000
Total Revenues	$ 9,664,000
Operating expenses:	
Personnel services	$ 3,385,012
Contractual services	2,248,297
Cost of goods sold	830,000
Employer payroll contributions	1,150,903
Supplies/Equipment	540,614
Utilities	417,150
Insurance and rental charges	192,395
Sales Tax	144,000
Travel	68,953
Other (transportation/software)	15,722
Total operating expenses	$ 8,993,046
Net Income	$ 670,954

CSS HUNLEY/USS CLAMAGORE SS 343 MUSEUM

Provided here are operational pricing and advertising ideas to meet the operational needs of the park:

Admission fees:

- Age 12 & up: $15.00
- Ages 6-11: $6.00
- Under age 6: Free
- Senior Citizen (Age 55 & above): $13
- AAA Member (Must present ID): $13
- Active Duty Military (Must present ID): Free
- Active Duty Dependent –Age 12 & Up (Must present ID): $13.00
- Active Duty Dependent-Age 6-11 (Must present ID): $5.00
- Retired Military (Must present current DD-2): Free

Special pricing for groups of 10 or more is available. Please click on the GROUPS tab and then select the type of group you have for more information.

Open every day except Christmas Day

10:00 am - 6:00 pm (April-September)

10:00 am - 5:00 pm (October-March)

***Ticket Office & Gift Shop close one hour prior to park closing**

Parking:

All Vehicles (excluding Semis): $2.00

Semis (includes admission for driver): $28.00

We have ample parking available for Motor coaches, Travel Trailers, etc.

WE DO NOT ALLOW OVERNIGHT PARKING

Preparing for Your Visit:

- Wear comfortable shoes; preferably a soft sole with closed toe and closed heel.
- All tours are guided. You can begin your tour immediately after purchasing your ticket.
- Allow approximately 2 hours to see everything but feel free to stay all day!
- Photography and video is encouraged.
- The ***CSS HUNLEY's*** pavilion is handicap accessible. Unfortunately, the Submarine ***USS CLAMAGORE*** is not, but there is a video on the submarine that runs continuously in the ***CSS HUNLEY's*** pavilion.
- Pets are not allowed aboard the ships or inside the Pavilion and must be on a leash in the park. Ticket Office prior to using the kennels.
- We have an on-site concessionaire where you will be able to purchase a variety of food & drinks.
- We gladly accept: Cash, Traveler's Checks, MasterCard, Visa, American Express, and Discover.We do not accept personal checks.

Pictures of what the park might look like

Used Drum Method berth ashore

This "War Patrol" deals with the story of how *Batfish* made it to Muskogee, Oklahoma. Read about the *Batfish's* final journey....War Patrol #8.

In 1956 the United States Submarine Veterans of World War II incorporated itself as a national fraternal organization with chapters is each state. As the Navy began to retire the obsolete fleet submarines in which these men served, SubVet chapters in coastal states began acquiring them as war memorials for their communities. The Navy was willing to give these men their old boats, so long as they could be afforded respectful upkeep to promote interest in the history, traditions, and contributions of the U.S. Navy.

By 1969, the Oklahoma SubVets were impressed with the U.S.S. *Drum* in Mobile, Alabama, which drew over 300,000 paying visitors its first year. A delegation from the Oklahoma City and Tulsa chapters asked the Navy if they could adopt a retired submarine. On hand at the New Orleans Naval Yard was the U.S.S. *Piranha*, which the Navy agreed to turn over to them if they could fulfill the donation requirements. Wanting the *Piranha* for his hometown, Republican State Senator James Inhofe agreed to sponsor a bill accepting the submarine for Oklahoma.

The initial reports claimed it was impossible to get a submarine as far upriver as Tulsa because the Arkansas River Channel above Muskogee was not deep enough. It was later determined that a direct tow upriver to Muskogee was not possible, therefore another method of transport other than direct towing would have to be devised. In the meantime, on October 2, 1970, the Muskogee City-County Trust Port Authority agreed to donate five acres of prime waterfront real estate - worth about $90,000 an acre - for the submarine berth and memorial park.

The submarine procurement committee met with the Navy for preliminary arrangements for the transfer of the *Piranha*. However, the Navy would not hold the *Piranha* unless the committee made a formal application for her and possession would be immediate once the donation contract was approved. Since the Arkansas River Navigable Waterway system would not be open for at least a year, interim docking charges would be prohibitive. The committee decided to wait and take their chances.

In September, 1970, the committee inspected *Batfish*, an alternative to the *Piranha*. Although both submarines had suffered considerable neglect, *Piranha* had been almost completely cannibalized whereas *Batfish* was much cleaner and better outfitted. Nearly a year had passed before the committee made a formal application for the *Batfish*, now mothballed beside *Piranha* at the Naval Inactive Ship Facility at Orange, Texas. *Batfish* had a far better war record. *Piranha* was commissioned in February 1943 and had made five war patrols, claiming seven sinkings for 19,300 tons. JANAC, however, credited her with only one sinking - on her first patrol. The committee was very pleased with *Batfish* and the Navy made no objection to the last-minute swap.

The donation contract was drawn up on June 24, 1971. The Secretary of the Navy approved the transaction and congressional approval was obtained on November 8, 1971. On December 9, 1971, the *Batfish* belonged to Oklahoma - at least on paper. The towing of the *Batfish* was divided into two phases: a direct offshore tow from the Orange Naval Inactive Maintenance Facility to the Avondale Shipyard at New Orleans. Then, after Avondale raised and cradled *Batfish* between two pairs of baredecked barges on steel lifting straps, the 1,350-mile upriver tow

would proceeded.

Batfish was towed to the Bethlehem Steel drydock in Beaumont, Texas, after the Orange drydock went on strike. At Bethlehem Steel, after a general inspection of her hull and compartments, all air salvage valves were made operable, fuel, oil, and most of her ballast were removed, and all her tanks were flushed clean. Then the hull openings were sealed. *Batfish* was ready on March 1, 1972 to be towed to the Avondale Shipyard in New Orleans.

At Avondale, it became obvious that the specified four barges would not provide enough buoyancy to reduce *Batfish's* draft. The revised flotilla design, incorporating six 120-by-32- foot bare-deck barges, would be ballasted to the outside, bound together by steel stabilizing and breasting cables. On March 13, the barges were partially secured to *Batfish* by lifting straps, but no cables had yet been placed to bind them together. That afternoon, the English tanker *Silvermain* sped by at 11 knots in a 5-knot zone and her wake hit the flotilla broadside at Avondale's Wet Dock #2. Two barges were seriously damaged and a third went to the bottom. The deck of the only barge not torn away from *Batfish* by the breakup was buckled by the strain, though *Batfish* herself escaped serious damage.

After the flotilla was re-assembled, *Batfish* was slowly moved up-river by two tugs at four knots. On May 3 she passed with ease through Lock-and-Dam Number 6, but her superstructure would not clear a bridge on the way into Little Rock. The U.S. Army Corps of Engineers lowered the river level by three feet allowing *Batfish* to "squeak" under the bridge. The tugs refueled at Little Rock and one tug returned downriver. Under single tow, *Batfish* proceeded cautiously and even more slowly toward Fort Smith. *Batfish* crept alongside her temporary berth at the Will Brothers Port of Muskogee Terminal on Sunday, May 7, 1972. The next order of business was the trenching of a 120-foot wide, 1/4-mile long trench from the main channel to the foot of *Batfish's* park site. On July 4, 1972, the *Batfish*, still in her temporary mooring, was unofficially opened to the public.

David D. Terry Lock and Dam - Muskogee, Oklahoma
May 3, 1972

Nearly a year passed as the financial situation between the *Batfish* and subcontractors and banks making the initial loans were settled. On Monday, March 12, 1973, heavy spring rains flooded the Arkansas River. Batfish gave the appearance of tugging so violently at her mooring cables that the Army Corps of Engineers feared she would rip loose and crush the Muskogee port docks or the new U.S. Route 62 bridge downriver, blocking the channel. *Batfish* listed precariously to port and shifting sand and mud increased her tilt even more to nearly forty degrees. Batfish held fast, but the Oklahoma Tourism and Recreation Commission wanted the Navy to take back the submarine, whereas the Navy expected Oklahoma to honor its contract. *Batfish* was clearly an Oklahoma problem.

Moving the BATFISH into place

On April 4, a hole in the riverbank was started to allow the *Batfish* access to its donated land. On April 21, dredging between the slip and the river was begun. *Batfish* was aligned with the slip, secured broadside to the strong current by cables. Then four bulldozers began to tug at her with 300-foot cables as a Port of Muskogee tug pushed from behind. By 4 pm on April 4th, *Batfish* was in her slip. Over the next week, the hole in the riverbank was replaced and the slip was flooded to float the *Batfish* to her final elevation. My May 1st, *Batfish* had been realigned to overlook the Arkansas River, thirty-six feet below her deck.

Approximately 50 people turned out in the crisp, windy weather for the Memorial Day re-opening. By the end of August, *Batfish* was steadily attracting a thousand visitors a week. Over the seven-week period, income from paid attendance had doubled. Except for the conning tower, she has been restored very well. More or less intact, she draws the awe and respect of her thousand or so visitors a week from late March to November.

USS *Batfish* at Algiers, LA in 1964 (courtesy of John Lamb)

These photos were taken by Gary Siftar of Broken Arrow, Oklahoma about 1961 while the Batfish was in New Orleans. He was a Sea Cadet at the time and took the photographs. As Gary remembers, she was missing her screw at the time, but was still commissioned. The stern photo is a bit out of focus but shows the ensign. He thinks the other submarine moored at her port was the Sunfish (less gun).

LISTING OF UNITED STATES SUBMARINE MEMORIALS

THE FOLLOWING LIST SUCCESSFUL SUBMARINE MEMORIALS ON THE NATIONAL HISTORICE REGISTER:

__Twenty-three **United States submarines** are **designated as memorials.**

- *Albacore* (AGSS-569): Portsmouth, New Hampshire
- *Batfish* (SS-310): Muskogee, Oklahoma
- *Becuna* (SS-319): Philadelphia, Pennsylvania
- *Blueback* (SS-581): Portland, Oregon
- *Bowfin* (SS-287): Pearl Harbor, Hawaii
- *Cavalla* (AGSS-244): Galveston, Texas
- *Clamagore* (SS-343): Patriot's Point in Mount Pleasant, South Carolina
- *Cobia* (SS-245): Manitowoc, Wisconsin
- *Cod* (SS-224): Cleveland, Ohio
- *Croaker* (SS/SSK-246): Buffalo, New York
- *Drum* (SS-228): Mobile, Alabama
- *Growler* (SSG-577): New York City
- *Ling* (SS-297): Hackensack, New Jersey
- *Lionfish* (SS-298): Fall River, Massachusetts
- *Marlin* (SST-2): Omaha, Nebraska
- *Nautilus* (SSN-571): Groton, Connecticut
- *Pampanito* (SS-383): San Francisco, California
- *Razorback* (SS-394): North Little Rock, Arkansas
- *Requin* (AGSS/SSR-481): Pittsburgh, Pennsylvania
- *Silversides* (SS-236): Muskegon, Michigan
- *Torsk* (SS-423): Baltimore, Maryland
- *Intelligent Whale*: National Guard Militia Museum of New Jersey, Sea Girt, New Jersey
- *Fenian Ram*: Paterson, New Jersey

Note: See *USS CLAMAGORE SS 343 on the list.*

All these boats are on both the US NATIONAL REGISTER OF HISTORICAL PLACES and the US NATIONAL REGISTER OF HISTORIC LANDMARKS

These submarines memorials add to the historic character of hosting cities and add to the city's financial statement by raising revenues

Successful Land Based Submarine Memorials

Of the submarines mentioned above, there are four submarine museums where the submarine has been brought ashore. They are:

1) *USS ALBACOR AGSS 569*	**Portsmouth, NH**
2) *USS BATFISH SS/AGSS 310*	**Muskogee, OK**
3) USS DRUM SS228	**Mobile, ALA**
4) USS MARLIN SST 2	**Omaha, Neb**

I THE ALBACOR AGSS 569 RELOCATION AND RESTORATION STORY

A rail-wheel method of moving submarine ashore

On October 1, 1972, Albacore was decommissioned. Her unreliable pancake engines had finally caught up with her and test operations were severely curtailed and eventually canceled. Plans to replace the pancake diesel engines would have required adding a 12-foot section to the hull. The cost of such a modification and the resulting increase in drag was unacceptable.

Albacore at InActShipFac

Albacore was towed to the Inactive Ship Facility (InActShipFac) at the Philadelphia Naval Shipyard. There she languished for seven years until the Navy Sub-Board of Inspection and Survey in December recommended that "she be stricken from the Naval Register of Ships". In April of 1980, the Chief of Naval Operations advised the Secretary of the Navy that "The Navy has no further requirement for this ship as an operational R&D platform" and that "authority is requested to dispose of Albacore as a target of destruction for experimental purposes." On May 1, 1980, Albacore was stricken from the Navy List.

While the Navy was considering how to usefully send Albacore to a watery grave, other forces were in motion to return her to her place of birth. Joseph Sawtelle, a leader in organizing the Portsmouth Marine Society, was exploring the possibility of forming a maritime museum in Portsmouth. He had acquired property as a possible site for the museum and was considering ways to get the project off the ground. He was advised to get a center piece - a real ship.

William Keefe, a vice mayor of Portsmouth and a city counselor, had brought the Tall Ships to Portsmouth in 1981. A chance meeting with Russell Van Billiard, who had seen Albacore in Philadelphia, convinced Keefe to take on the project of bring Albacore home. She was small, conventionally powered, and a non-combatant submarine that could serve as a monument to the people who designed built, maintained and manned her.

What started out as the Bring Back the Albacore Committee became the nonprofit Portsmouth Submarine Memorial Association (PSMA). The group faced four challenges: To raise necessary funds; to get the Navy to release the Albacore to the group; to find a suitable site; and to determine how to move her to her display site.

The property Joe Sawtelle held would not be suitable for displaying Albacore. A search of waterfront property failed to identify a suitable piece of land along the Piscataqua River. However, a possible solution was to move the Albacore onto a dry land site. What better way to display Albacore's sleek hull, X-configured stern and counter-rotating propellers than by having her completely out in the open and visible. Joe Sawtelle located a parcel of land at the intersection of the Route 1 By-Pass and Market Street that belonged to the Maine-New Hampshire Interstate Bridge Authority. When approached, the Authority Board agreed that this was an appropriate use of the land and wound up selling the land to the Association.

The Navy told the association that they must show they had the financial resources to complete the project before the Navy would consider releasing Albacore to them. Cost estimates ranged from .6 to 1.6 million dollars. No public funds were available so all monies had to be raised from private contributions. The public response was overwhelming and over $400,000 was raised. Commitments from two large donors brought the total to $758,000 and, taking a $300,000 mortgage on the property, the funding was set.

With a site, funding and public support, the Maine and New Hampshire congressional delegations, the Navy and Navy Secretary John Lehman were approached. After a lot of paperwork and many meetings, both houses of Congress passed the necessary bill to release Albacore to the Association and on November 7, 1983 President Ronald Reagan signed the bill. However, the Naval Sea Systems Command, the final authority to consent to releasing Albacore, did not do so until just hours before Albacore began its move to its final site in May of 1985.

The Move

The PSMA had approval to take possession of Albacore. Now they faced the problem of getting the boat from the InActShipFac in Philadelphia to Portsmouth and to its ultimate resting place. The Navy could not free one of its tug boats to move the boat but the Army could. A reserve Army component took on the movement as a training exercise. In April of 1984, the Navy briefly turned custody of a Navy submarine over to the Army Reserve. After a careful pre-tow inspection by the tug's skipper Warrant Officer Mark Anthony, the Army tug Okinawa took Albacore under tow for the 575 mile, 70 hour trip to Portsmouth.

Under tow by tug Okinawa

Albacore caused a problem for the tug. Whenever the tug slowed down, Albacore with her low drag would continue on and try to overtake the tug. The 5 knot average speed was lower than hoped for and heavy seas and high winds led to a transit of the Cape Cod Canal instead of going around the Cape. A strong current in the Canal slowed the transit speed down to about 4 knots.

Transiting Cape Cod Canal

Heavy seas caused the planned early morning rendezvous with a local Portsmouth-based tug off Gunboat Shoal buoy to be missed.

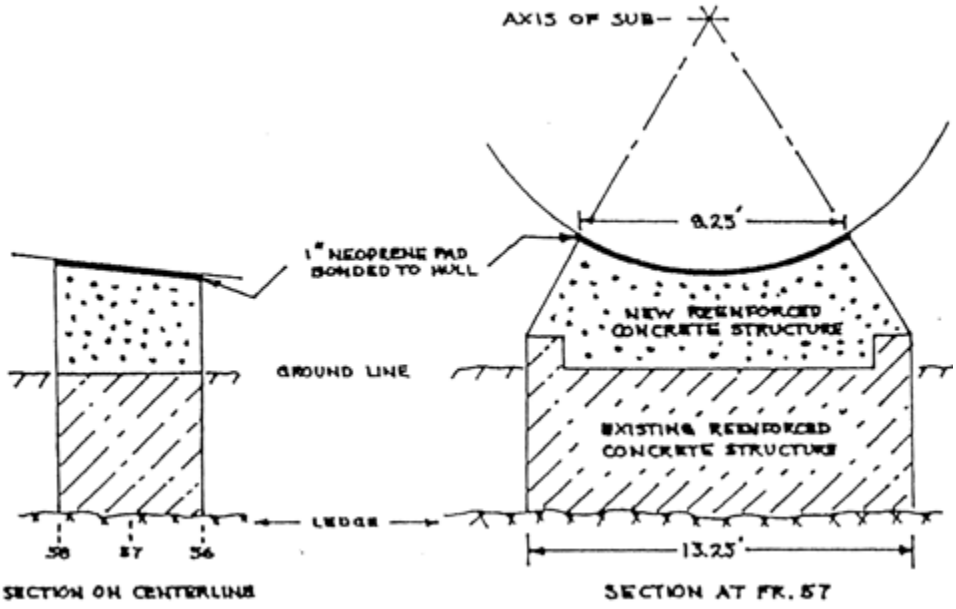
Arrival at Fort Constitution

A late morning transfer of the tow did take place and Albacore was moved to Berth 7 next to the Naval Reserve Center at the shipyard.

Ship and Site Preparations

The Naval Reserve Center took over the Albacore. Any classified items or systems were either covered up or removed as NAVSEA directed. Depth and speed indicators and ballast tank systems were restored to working order for her final move. During their drill periods, the reservists invested countless hours of training time in preparing the boat for its final move. The shipyard provided a lot of support, also. Albacore was their baby and they wanted the best for her. The time and effort donated to getting Albacore ready conserved PSMA funds.

Gene Allmendinger, a professor of naval architecture at the University of New Hampshire and a member of the PSMA, designed a set of reinforced concrete cradles that would serve as her supports on dry land.



Concrete cradle design

The problem was how to get her there. The final resting site was a quarter of a mile from the river and 27 feet above sea level. Of the three different methods considered, the one selected was a marine railway. Albacore would be floated onto a specially designed cradle which would be moved on rollers on twin tracks. A heavy duty winch would pull the submarine laidened cradle out of the water and up a ramp.

Marine Railway ready for outhaul

A similar system has been used to dry dock small ships and it was a proven system. To

get the boat from the Piscataqua River to the cradle, it would be necessary to remove a railroad trestle, cut through a four lane highway and dredge a channel to the end of the marine railway. Gaining permission and approvals to do all this was a major task with over 20 separate permits and approvals required. A complicating factor was that the move had to occur at the time of the highest monthly tide. Finally, all permits and authorizations were in hand and, on May 4, 1985, the process of moving Albacore to her final resting place began.

Off to a Good Start, But....

Entering rail cut en route to highway cut

The channel had been dredged, the trestle removed and the highway breached. Albacore passed stern first through the gap in the railroad and began a sideways maneuver of several hundred feet to line up with the highway cut. Her lower stern fins went aground in the mud and high tide came and went before she could be gotten free.

Nearing marine railway

With just minutes to spare, she was lined up over the cradle when a major problem arose. A protective cap on the end of her propeller-less propeller shaft prevented Albacore's stern from mating up exactly with the cradle.

Positioned over the railway cradle

With the tide going out, a decision was made to go ahead and land Albacore on the cradle and pull her out anyway. A winch failure postponed the movement until the next day. On the following day, the repaired winch slowly moved the boat and cradle perhaps 30 feet before disaster struck. With the full weight of the submarine on it, the beams of the cradle buckled and the cradle slipped off the tracks. At the next high tide, the boat was moved back as far as possible from the river and allowed to settle in the mud as the tide receded.

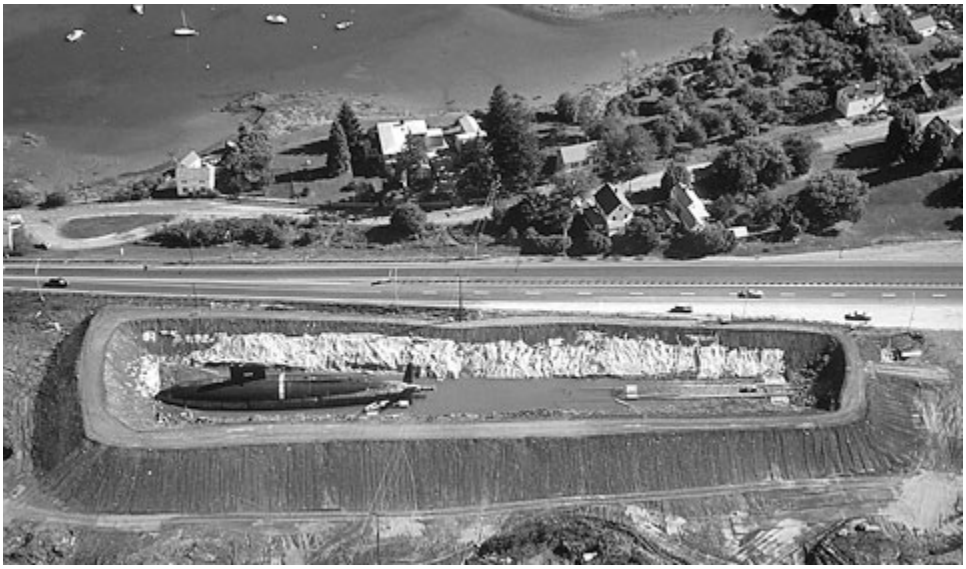
Plan B?

There was no back up plan. The submarine could not be moved without cutting the highway again and taking down the railroad trestle. The only other option seemed to be to cut up the boat and haul it away in pieces. And that was not an acceptable solution.

For months Albacore would lie in the mud like some oversized beached whale while possible engineering solutions were evaluated. The plan finally adopted was to build a large coffer dam, or bath tub, around the submarine, fill it with water, float the boat and pull it to the back end of the tub. By building ever higher walls around the boat, a series of canal locks would lift the submarine and allowed her to move inland toward her final destination.

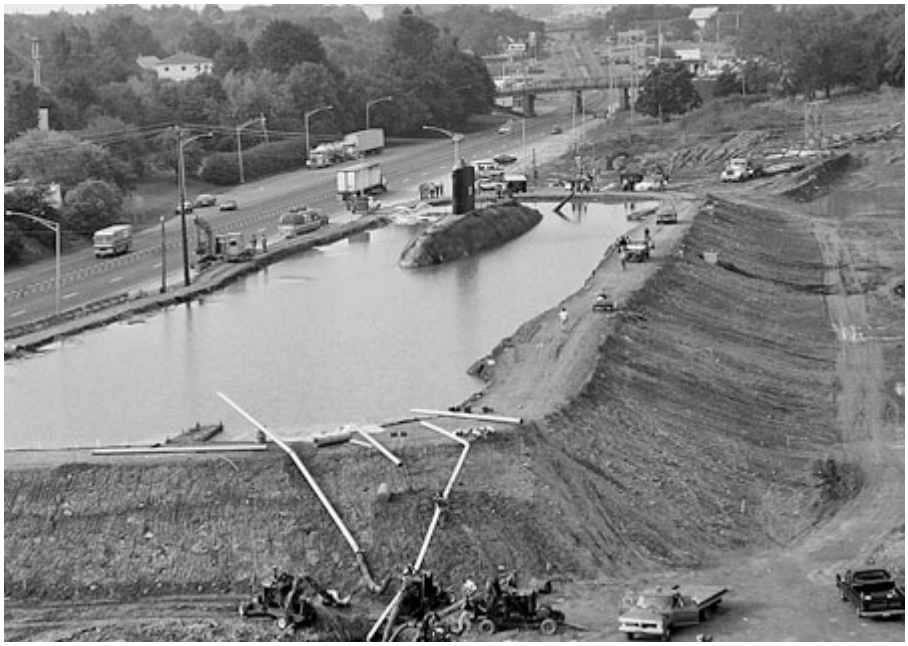
The Last Move

Deciding upon a method for moving Albacore was the easy part. Now began the permitting process which entailed convincing the Army Corps of Engineers, among others, that the coffer dams would hold water and not collapse. With the water level in the final coffer dam 6 1/2 feet above the Route 1 By-Pass, the Corps had to be satisfied that the water would be contained and that there was a very low risk of a blow out and catastrophic flooding. The University of New Hampshire School of Engineering provided technical assistance in providing an analysis of soil mechanics, structural geometry and the system for lining the coffer dam with poly sheeting to minimize water leakage.



The beached whale in her cofferdam

Filling the coffer dams with water was another problem. The available pumps did not have the volume capacity. Walter Pratt of Rensselaer, NY donated and delivered free of charge 12 huge pumps. Another problem to be solved was that the pumps would run out of gas every three hours and they would need to be running 24 hours a day. Buzz Hanscom, owner of a local fuel company, loaded up one of his tanker trucks and kept the pump tanks filled and never charged a penny.



In position over the concrete cradle

With all details complete, it took three days of round-the-clock operations to complete three floods and lifts and move Albacore into position. With the water level falling, Albacore settled perfectly on her concrete cradle at 4:30 pm on October 3, 1985. She was finally home.

Getting Ready for Visitors

Forward entry brow and hut

Having Albacore in place was not the final step. A refurbished, working periscope was

provided by the Navy. She needed her counter rotating propellers mounted, two holes cut in the hull for visitor entry and exit doors, the hull sandblasted and painted, and modification of internal electrical wiring to accommodate shore power. A large group of volunteers, many from the Portsmouth shipyard, did all the work.

Getting her ready for visitors

The shipyard was and still is today a central factor in the community. Albacore was a creation of theirs and they took great pride in their workmanship. It took almost a year before everything was ready and Albacore was opened to the public on August 30, 1986.

Today

Albacore sits in dignified silence on her concrete cradle alongside the Route 1 By-Pass. About every five years, her hull gets a fresh coat of paint. Volunteers from submarines in overhaul at the nearby shipyard provide the labor. The Park throws a cookout for the volunteers afterward.

A small Visitor's Center building is the starting point for touring Albacore. The Center has a display of submarine memorabilia and sells submarine souvenirs and books. In 2005, an audio tour system was put in place outside on the park grounds and inside Albacore. The tour provides visitors with information about Albacore's unique external and internal features and relates experiences of some of her former crew members.

Near the Visitor's Center is a Memorial Garden which honors the sacrifices of those submariners who gave their lives in service to their country.