

Part Boat, Part Ship The U.S.

BY STEVE C. D'ANTONIO

They're not as glamorous as the PT Boats of WWII or the heavily armed Vietnam-era "Swift Boats" popularized by the current Democratic presidential candidate or today's fearsome SpecOps optimized Cyclone Class patrol craft. No, the YP is simply a humble, yet necessary, training vessel. Much like the less-than-glamorous Stearman biplanes of WWII, which were used to train the greatest generation's most able fighter pilots, the YP's role is to train today's midshipmen and tomorrow's naval leaders, surface warfare officers, aviators and submariners. Although the YP possesses no armament, it plays a vital role in the present and the future of the U.S. Navy.

The YP possesses one other notable attribute: It has the makings of perhaps the finest "surplus" recreational trawler the industry has ever known. As is the Navy's wont, ships and other small craft are usually retired, or "stricken," long before they are worn out or unseaworthy. The current classes of YPs are slated for replacement sometime between 2005 and 2010. If the Navy and other government agencies involved in the disposal of these vessels are tradition bound, there is a good chance that at least some of them will be made available to the public through a well established auction process.



Photos by Steve D'Antonio

IN THE BEGINNING

The designation YP, which stands for Naval District Yard Patrol boat, has been in use for over 80 years. Officially, this designator was first used in 1920; however, craft serving in this role were used as early as WWI. Many were miscellaneous vessels, from small launches to private yachts commandeered for the duration of hostilities. Some of the earliest PT boats, the former Huckins prototype PT 69 and the Higgins "dream boat" prototype, PT 70, as well as an aluminum-hulled PT boat built by the Philadelphia Navy Yard, officially became YPs.

The first purpose-built YP series—albeit for the Coast Guard—the "78 Class," was designed by John Trumpy, then of Mathis Yacht Building in Camden, New Jersey, and was originally used as an inshore patrol vessel. Built in the 1920s and taken over by the Navy between 1933 and 1936, these 75-footers made 16 knots and were armed with a 20mm cannon and dual depth-charge tracks. Their sleek, yacht-like lines, narrow beam and plumb bow were portents of Trumpy's future works, and by all accounts they had good sea-keeping abilities, if a

Above: The engine order telegraph, or EOT. While not used regularly aboard these YPs, the system is fully functional and represents a backup in the event of a failure in the primary engine controls. Right: A YP, "haze gray and under way."

Navy YP

*Could this be
your next trawler?*





Top: Lots of glass and few obstructions allow a commanding view from the YP's pilothouse or bridge wings. Port and starboard bridge wings give a real shippy feel. Above: The YP is equipped with a fully functional signal bridge, where midshipmen and YP crews can access the flag bag (Navy parlance for the bin where flags are stored) or locker, signal flags and halyards. It's located immediately aft of the pilothouse and on the same "01 level."

bit rolly, while performing their duties with distinction. In all, 31 YPs were lost during wartime because of enemy action and accidents, while six were lost to "the perils of the sea."

In 1939, the first of the 78-Class YPs (because most YPs are nameless, the classes are usually determined by the first hull number in a series) were

assigned to the U.S. Naval Academy. As part of the Severn River Naval Command, their mission was to provide midshipmen an opportunity to train in a shipboard environment while patrolling the mouth of the Severn River and upper Chesapeake Bay.

The 78-Class YPs served into the 1940s but were beginning to show their age, most having been built in the '20s. In 1945-46, a new class of YP, the 647 Class, was built, designed specifically for navigation and maneuvering training of midshipmen at both the Naval Academy and its officer candidate school in Newport, Rhode Island. Six of these vessels served through the late '50s, when another new YP version was authorized, the 654 Class,

considered by many to be the true essence of a training YP and among the best-built wood naval vessels. At 81 feet and 66 tons, these were the largest and most thoroughly equipped YPs built to date.

One acknowledged expert in the field of wood vessel construction and surveying described these craft as "the epitome of wooden boat construction." Twenty-two of the 654s were built, hull numbers 654 through 675, and they served the needs of the Navy and midshipmen from the mid 1950s through the early 80s.

TODAY'S YPs

As good as the 654 Class was, it, too, reached retirement age after 20-plus years of hard use (training vessels always live a hard life). YPs are designed to be used as patrol craft in time of war, and thus, some of the 654-Class vessels were refit as emergency minesweepers. It is interesting to note that the U.S. Navy purchased the last of a series of 14 wood-hulled minesweepers, the Avenger class, as recently as 1990. After seeing service in these alternate roles, some 654-Class hulls, such as Pat Foley's *MY 672* purchased in 1997 (see sidebar), found their way into private hands.

The first of the current version of YPs, the 676 Class, was ordered in October 1982, with the first hull going into service at the Naval Academy in



Lt. Denver Applehans, USNR, puts the YP's enormity in perspective as he stands next to the rudder and prop of a YP refit.

November 1984. Peterson Builders of Sturgeon Bay, Wisconsin, built hull numbers 676 through 682, and Marinette Marine of Marinette, Wisconsin, built 683 through 700. The differences between the two classes involve minor alterations to configuration or accommodations layout, but they are otherwise identical.

Naval Station Annapolis (also known as the NAVSTA by those who serve there), located just across the Severn River from the Academy, is home to all 20 of the Academy's YPs. The remaining YPs operate from, and are maintained exclusively at, this station. Two others are used by the Officer Candidate School at Naval Air Station, Pensacola, Florida, for similar training duties, and two more are stationed at Keyport, Washington, with the Naval Undersea Warfare Division. The latter are used in torpedo testing and development. (The arithmetical disparity between production numbers and those still in service is the result of one YP having been severely damaged by an engine room fire. It has been stricken from the Navy's list as a commissioned vessel and has since been auctioned for private use.)

One of the NAVSTA YPs, hull number 679, belongs to and is operated by the Navy's Office of Naval Research, or ONR. Another YP, the 686 boat, is used for research and training by midshipmen studying oceanography. YP crews refer to their respective vessels as "boats," which is proper Navy protocol for vessels of this size, and by their hull numbers, since none are named. I must confess, while spending a day aboard a YP under way in preparation for this article, I found this jargon reminiscent of the way PT boat crews refer to their craft, "the 109" or "the 73," for instance.

Naval Academy midshipmen, as well as the taxpayers, are truly getting their money's worth where YP usefulness is concerned. The YPs represent a realistic training platform for midshipmen, many of whom experience their first passage aboard a seagoing vessel, a NAVSTA YP, during plebe summer (equivalent to the summer before a civilian college student's freshman year). Midshipmen, or mids, are again assigned to YP training duties as "youngsters" (college juniors in civilian speak) and finally as "firsties" (the civilian equivalent of seniors), when they are given



the opportunity to operate and command a YP, crewed by Academy underclassmen or youngsters. All of these training evolutions occur under the watchful eye of the vessel's craftmaster, usually a first class or chief petty officer (a high-ranking enlisted person) and a regular navy crew, which includes an engineer and two boatswain's mates.

The YPs afford midshipmen the opportunity to put to use much of what they learn in basic navigation and ship-handling classes at the Academy. The typical YP cruise takes place during the summer and consists of a weeklong in-port training period, allowing the mids to familiarize themselves with the YPs in Severn River and upper Chesapeake Bay. After completing this indoctrination, the YPs, with their regular Navy crew and up to 24 midshipmen, head out to sea on a two-week passage.

Destinations include Boston, Massachusetts; Newport, Rhode Island; New York, New York; and Norfolk, Virginia. During this time, midshipmen essentially operate the vessel the same way any naval vessel would be run: with watch crews, commanding and executive officers, engineers, navigators, etc. The Naval Academy's present superintendent has set into motion plans to intensify this summer training regimen aboard the YPs and other Academy training vessels. His belief is that underway periods aboard Academy YPs and other

small vessels provide midshipmen with leadership experience while better preparing them to enter the fleet upon receiving their commissions.

OF WOOD SHIPS AND IRON MEN

Although it may seem difficult to believe, the Navy that uses nuclear reactors, satellite navigation and stealth technology still operates wood-hulled vessels. The YPs are among the last timber vessels built for and used by the U.S. Navy, along with the aforementioned 224-foot Avenger-class mine countermeasure ships. In fact, some of these two classes of vessels, similar in many ways, were constructed side by side by the same builders in Wisconsin. In the interest of accuracy, it's important to point out that the YP's superstructure is aluminum, while the Avenger-class hulls are sheathed in fiberglass. Other than some small craft, the YP claims the distinction as the sole remaining pure timber-hulled vessel in the fleet, except, of course, for Old Ironsides, *U.S.S. Constitution*, which is still a commissioned U.S. Naval warship.

Why use wood when most naval vessels are built from steel, aluminum and now fiberglass? In the Navy, like so many other tradition-oriented organizations, old habits die hard. In this case, though, it is with good reason. Wood is strong, forgiving, easy to work with and relatively easy to repair. Also, the Navy has been working with wood

MV 672

"Very, very, very pleased." That's how Pat Foley, owner of *MV 672*, formerly YP 672, describes his ownership experience since taking possession of this craft at a MARAD auction in 1997. Pat's YP, a 654-Class built in 1974 by Peterson Builders, is a bit smaller than today's YPs, at 85 feet in length with a 19-foot beam. She's no less sturdy than the current breed, however, having been built with similar construction techniques, including extensive employment of laminated sections.

Pat has accumulated a considerable amount of sea time with the *672*, making several passages from Northeast Harbor, Maine, to Antigua. He describes her as "as good as wooden boatbuilding gets." He says, however, that the *672* rejects parts from discount marine chandlery chains like a transplant patient rejects organs from the wrong donor. Try to install any of this gear, and the *672* simply won't have any of it. Instead, Pat simply consults his Navy-issued Shipboard Allocation Manual, calls the original manufacturer of a part or component and then has it shipped. He has yet to face a situation where a needed part is unobtainable. Pat also reports that parts obtained in this fashion are usually less expensive than comparable commercially available "marine" components.

When Pat met with Elwood Peterson, the now-deceased principal of Peterson Builders, Peterson told Pat that the YPs were built at "40 percent over yacht standards" for strength and durability.

A lamp made from a shell casing with an interesting history graces the *672*'s master suite. The shell was the first fired by American liberators into the gates of the now-infamous San Thomas internment camp in the Philippines in the waning days of WWII. Pat, who was given the lamp by a neighbor who was a nurse and prisoner in the camp, thinks it fitting that this artifact should reside aboard a former U.S. Naval vessel.



The YP fleet at NAVSTA Annapolis. Seeing YPs lined up at dock makes for an easy comparison to the trawlers at your own marina.

for its entire 229-year history; it's a material this organization understands well. (The Navy still publishes a manual titled "Wood: A Manual for Its Use as a Shipbuilding Material," which many civilian boat yards, including mine, use.)

Sadly, however, the days of timber naval vessels are drawing to a close. With the skills required for proper wood vessel construction and maintenance on the wane, this material is no longer viewed by the Navy as desirable, and thus the next class of YPs will be steel...but more on that later.

The 676-Class YPs follow in the wake of their predecessors in that they embody the highest-quality wood vessel construction techniques and materials. It's worth noting that building a strong, durable and proper-looking vessel from wood represents a considerable challenge. Most folks in the boat manufacturing industry would agree, no doubt, that the skills and expertise required for this type of construction are considerably different from those used in fiberglass or alloy boatbuilding. While fiberglass and metal have their own special chemical and metallurgical requirements, there's something about working with wood that makes it part craft

and part artwork; every plank, beam and board represents an opportunity for interpretation by an individual shipwright.

As skill intensive as wooden boat construction is, doing it for the Navy is more challenging still. The documentation, record keeping and special material procurement present a daunting challenge for most builders. Every step of the construction process must be exhaustively documented, and NAVSEA, or Naval Sea Systems Command, the successor to the Bureau of Ships or BUSHIPS, must approve any changes from the detailed specifications.

Peterson Builders Inc., also known as PBI, and Marinette Marine Corp, the two primary contractors for this class of YP, were among the few builders in the country at the time these YPs were built that were capable of building a wood vessel of this size to these exacting standards. It's unlikely that any builder could undertake a project of this sort today for a reasonable price, even by government contract standards.

As an example of the high quality and complexity with which these vessels were built, most of the curved wooden structures found in the 676 YPs are laminated rather than grown or sawn timbers. In the



old days, if a shipwright needed a curved piece of wood, for a deck support knee for instance, he would search through the shipyard's stock of "grown knees"—essentially, naturally curved pieces of wood cut from a tree's branches and roots. These are immensely strong but also understandably scarce, because of the time required to find and salvage them. The alternative is to saw the shape needed, but the result isn't nearly as strong as the grown variety.

With the advent of robust, waterproof glues and the ability to cut thin strips of wood, however, laminating has become a viable alternative. Thus, all of the wood components aboard the YP that require anything other than straight timbers use this multiple-glued-strip process. While this practice is used regularly in the manufacture of recreational wood boats (the carpenters working at the yard I manage use this approach on a daily basis, for everything from fine interior joinerwork to large-scale wood-hull frame replacement), the Navy's stringent contractual requirements add a new level of complexity to this process.

YP laminates use an adhesive known as phenol resorcinol, a material that's been used for gluing wood components together since WWII. When the YPs were designed in the early 80s, epoxy was still, as far as NAVSEA was concerned, unproven. In NAVSEA's conservative opinion, it hadn't been in use long enough to be considered ultra-reliable. Thus, resorcinol, the proven stalwart adhesive, is used almost exclusively throughout the vessel. The actual gluing process of each laminate, from the vessel's massive stem, which comprises over 40 individual laminate layers, to knees and deck supports, must adhere to the Navy's directives for this process. Each laminate is compressed to 175 pounds per square inch of pressure while being cured under heated, humidity-controlled conditions that raise the temperature of the glued area to a required 150 degrees F (this is for white-oak laminates; other wood species require different temperatures) for approximately six hours.

Other requirements for timber type, quality and method of use are equally stringent. The moisture content of all wood to be glued must be between 10 and 16 percent, and the specified strength grade must be used; there are five, depending upon tree-growth-ring orientation. Additionally, scarfs—essentially, two flat pieces of wood glued together—must use a 12-to-1 slope ratio (this may mean little to the reader, but any experienced shipwright will

tell you just how conservative a standard this represents). Most timbers undergo an exhaustive anti-rot treatment that would probably intimidate rot and mold spores into submission with its onerous sounding name alone, fluor-chrome-arsenate-phenol.

I could go on for some time about the attributes of the YPs' construction process, but that would fill several more pages. These vessels are, in a word, robust. I don't believe it would be an exaggeration to say that they represent some of the most durable, well-built wood boats I've ever seen. Depending upon your taste, you may not consider a YP to be pretty, but then again, neither is a Humvee (the military version), but we all know it's capable of accomplishing its mission, and there's a certain beauty to be found in that quality.

BOAT TOUR

While it's not possible to detail every specification of the YP in these pages, the highlights are worthy of note. The vessel's own "Boat Information Book," issued by NAVSEA, is over 2 inches thick. If you're a gearhead, then you'd relish the opportunity to curl up with this tome on a rainy day in the main saloon and page through its voluminous and minute descriptions of the YP. Everything from removal of the main propulsion engine and the type and grade of wood required for hull repairs to emergency damage-control procedures and deck-covering materials used throughout the vessel is described in painstaking detail. It even gives clear and concise descriptions on how to apply varnish (in a nod to tradition, the YP's caprails are bright). There's little you might want to know about a YP that can't be found between the covers of this manual.

Additionally, each YP is issued a "Shipboard Allocation List," which details the make, model, part number and manufacturer of everything—and I mean *everything*—that goes into or aboard a YP, from hatches and cutless bearings to dining utensils and typewriter ribbons. In typical Navy fashion, the YP is well documented.

Accommodation spaces include berthing, essentially multitiered "racks" in forward and midship compartments. These are designed to serve the needs of midshipmen, and thus, privacy is, well, non-existent. Conversion to recreational use, however, could easily transform these areas into spacious owner, guest and crew cabins.

If you've ever dreamed of conning a real Navy ship, the YP is designed to give you precisely that



MV 672 sits at anchor, like any other vessel, with her tender tied to the stern for anchorage exploration.

feeling, in spite of the fact that she's only 108 feet long. The pilothouse mimics those found aboard destroyers and aircraft carriers, right down to polished brass engine order telegraph (EOT), voice tubes and a collision alarm, except on a smaller scale.

Electronics are comparable to those of any well-appointed yacht, with a few exceptions. There are VHF and SSB-HF communications systems, as well as a proprietary UHF radio used exclusively for communication between YPs. The radar is a 60-nm, open-array Litton Systems BridgeMaster radar, and there's a commercial Northstar GPS receiver. Of course, the Navy doesn't use autopilots, and thus you won't find one in the YP's pilothouse; however, she is capable of being steered from two locations other than the main bridge wheel. There is a "jog stick," or lever steering station, forward of the helmsman's console. This alternate station frequently is manned by the craftmaster in order to assist midshipmen while they are practicing ship handling. This station also incorporates direct clutch and throttle controls that are independent of and

will override the EOT system. Another emergency steering location is in the lazarette at the extreme aft end of the vessel. Taking orders through a system familiar to all Navy veterans, the sound-powered telephone or intercom system, a crewman can operate the rudders from this station. All steering is electrically assisted hydraulic, with provisions for full manual hydraulic control. Interestingly, in keeping with the vessel's training mission, the transmission controls incorporate a "wrong direction alarm," which will alert the officer of the deck and the craftmaster if the direction requested by the EOT, forward or reverse, does not match the rotation of the props.

The real treats provided by the YP are, not surprisingly, its holy place and engineering spaces. The YP's engine room could best be described as all-business. An engineer is expected to be on duty in the engine room at all times. While this may be considered desirable duty for some, like me, it can be a fatigue-inducing experience, and thus the YP, just like most Navy ships, incorporates an engineer's



operating station into the YP design. This small, air-conditioned cubicle, little bigger than a couple of telephone booths (for younger readers, that's about 6 feet by 3 feet), provides the duty engineer with a commanding view of the engines, generators and other machinery through thick glass panels.



Photos by Mel Neale

The main saloon of MV 672, formerly YP 672, is filled with many of the comforts of home and plenty of storage space, not to mention several large windows that let in natural light.

Additionally, all engine, genset and alarm (fire, high-water, etc.) instrumentation is laid out in console fashion, easily observed by the engineer.

The propulsion engines, two 437hp, 2100-rpm, Detroit 12V71N engines, give the YP a cruising speed of about 8 knots at 1100 rpm and a maximum speed of 13 knots at 2000 rpm. At those speeds, fuel consumption is a modest 10.5 gph and a thirstier 46 gph, respectively. When it's time for a lube oil change, be prepared to pump a lot of oil: about 10 gallons out of and back into each engine, 9 gallons for each Twin Disc transmission, and four gallons for each generator. Engines, generators and refrigeration equipment can all be removed through "soft patches," or hatches in the YP's decks.

Propeller shafts are made of 4-inch stainless alloy and are multisegment line and tail sections connected via a muff coupling. They turn 52-inch nickel-aluminum-bronze three-blade props through a 5.15:1 reduction gear. Provisions are made for easily and quickly locking shafts (to prevent the lay prop or props from freewheeling or windmilling) in the event the YP needs to be towed or an engine failure occurs. Shaft-locking devices reside in the engine room bilge, just forward of the pillow block bearings.

Two identical generators, also Detroit's of the 3V71 variety, provide electrical power aboard the

YP. These supply 450 volts AC, three-phase power at 50kW each, which is stepped down by transformers to ordinary 120- and 240-volt power. Either of these generators is capable of supplying the entire needs of the vessel, which includes the galley's electric range and microwave ovens, cabin



A YP galley may seem a bit industrial, but it is fully equipped and spacious; it's a great place to prepare and serve any civilian meal.

and passageway illumination, and battery charging (the battery bank is 24 volts at 400 amp hours). A conventional 100-amp, 240-volt shore connection supplies shorepower to the YP while dockside.

Other interesting features of the YP include dual walk-in fuel tanks. These fully baffled, black iron tanks are capable of holding over 6,500 gallons of diesel fuel. An access scuttle allows entry into and maintenance of these tanks. The fuel filtration is basic, with a single primary and secondary filter; however, a tank stripping system allows the engineer to suck water and dirt from the bottom of either tank with just a few turns of a pump handle. The YP operator's manual advises that this be done on a daily basis.

Potable water tankage capacity is 1,500 gallons, lube oil reservoirs hold 40 gallons and waste is accommodated in a 300-gallon tank. Heads aboard the YP are of the vacuum variety, and, while dormant now, each YP is equipped with a Village Marine desalination plant as well as a bromine water-purification system.

In the tradition of other wood naval vessels, the YP's hull construction is impressive. From the outside in, the planking is one-and-a-quarter-inch Douglas fir over one-inch Alaskan yellow cedar (a particularly rot-resistant species) over metal-strapped white-oak laminated frames. For wood-boat aficionados, inner



plank seams are on the frames, with outer plank seams staggered, and oak butt-blocked between frame stations. Outer planks are fastened to inner planks using a quilting method—essentially, screwing from the inside so the screw heads are not visible on the outer hull. All hull fasteners are silicon bronze.



The aft deck of MV 672 is clearly the social area, with comfortable chairs and a parrot, to boot! The covered deck area is ideal for lounging at anchor or at dock.

As if this weren't strong enough, 3M 5200 is used between inner and outer planks and between all of the YP's faying surfaces (any hidden wooden seam or interface). This polyurethane adhesive sealant has a fearsome reputation among boatbuilders and owners for the tenacious grip it imparts to wood, hardware and just about anything else to which it's applied. Having worked in a boatyard for most of my adult life and thus being intimately familiar with this adhesive, I pity the poor soul tasked with replacing a YP plank. Finally, the hull is sheathed in one-sixteenth-inch-thick copper from just above the waterline downward to form a 60-inch band that provides protection from ice and other floating debris.

From a safety standpoint, YPs spare little expense. All engineering and fuel-storage spaces are equipped with manual and optically activated automatic fire-suppression systems. These systems can be manually triggered from the pilothouse and the engine operator's station. Fuel supply to engines and gensets can be terminated from these locations as well.

Bilge-pumping capabilities require some operator interface, as they work through a manually controlled manifold system. While that's less than ideal for yacht use, this drawback is more than made up for by sheer capacity. Pumps operate from an independent electric motor or from a power

take-off attached to one of the propulsion engines. YPs are also equipped with engine-driven and independently powered seawater firefighting pumps, as well as 14 fire extinguishers on each boat.

An extensive alarm system exists for determining the presence of fire, flooding or poisonous gases



The foredeck of MV 672 is equipped with storage space and functionality: There are two dock boxes, room for hanging lines, water spigots and a coiled hose for cleaning the deck.

throughout the vessel. Every YP has been recently refit with a new central heating and air-conditioning system. Finally, headroom in all accommodation spaces is a generous 6 feet 3 inches.

THE END OF THE VOYAGE

As I mentioned earlier, these vessels are reaching retirement age. Their replacements, steel-hulled versions, are scheduled to begin appearing sometime between 2005 and 2010. If history is any indicator, some of the current vessels may go to other government agencies; however, this is unlikely because of their wood hulls. Chances are excellent that many will be auctioned through the Maritime Administration Agency, or MARAD. Many of the previous 654-Class YPs were disposed of in this manner, and it's likely this will occur again.


Therefore, if you are in the market for a reliable, proven, seaworthy trawler design, a retired 676-Class YP may fit your needs, provided the price is right. My understanding from one owner of a 654-Class vessel is that they often auction for considerably less than their market value—if it's even possible to ascertain the value of a vessel such as this (remember the description of the construction process). Of course, you'd have to plan on some manner of refit, unless you and your mate don't mind sleeping in bunk beds.



Silhouetted against the sunset, this former YP at anchor is a gorgeous sight; there is peace and quiet on board this ship.

While I was researching this article, the commander of Naval Station Annapolis, Capt. Brian McCormack, afforded me every accommodation requested, including an afternoon of underway time aboard a YP, the 690 boat. The vessel and her crew performed flawlessly and in the calm conditions of Chesapeake Bay on the day we sailed, she handled as one might expect a 108-foot, 175-ton vessel to handle: steadily. Docking and maneuvering were made to look effortless by the craftmaster, but I'm certain that's a combination of his experience and the YP's twin-screw responsiveness (there's no bow thruster). Part boat and part ship, the YP exhibited, from what I experienced and from what the crew related, ideal sea-keeping abilities.

The craftmaster of this vessel, quartermaster first class Michael Lombardo, and his crew, as well as the crew of the YP traveling in concert with us, the 680 boat, responded with enthusiasm to every request I made for maneuvers and photographic

opportunities. During this underway period, the YPs and their crews performed with the utmost expertise, professionalism and pride, and I am in their debt for making this story possible. 

YP 676-CLASS SPECIFICATIONS

OVERALL LENGTH	108'
AVERAGE AGE	ABOUT 18 YEARS
BEAM	24' 3"
MAXIMUM DRAFT	6'
DISPLACEMENT	173 TONS
FUEL CAPACITY	6,802 GAL.
POTABLE WATER	1,530 GAL.
LUBE OIL STORAGE	40 GAL.
TURNING RADIUS	200'
OFFICERS	2
CREW	5
MIDSHIPMEN	24