The Veterans Memorial Museum Newsletter

June 2020

The Museum is open Wednesday - Saturday 10 a.m. until 4 p.m.
To set up a tour call the Museum at 256-883-3737 during Museum hours.

Museum News

Due to the COVID-19 epidemic, the US Veterans Memorial Museum suspended operations as of 18 March until Saturday, June 6, 2020.

The US Veterans Memorial Museum has reopened effective Saturday, June 6 which coincides with the 76 anniversary of D-Day. The well-being of our visitors and volunteers is still a major consideration. The wearing of face coverings to protect yourself and others is encouraged. We have hand sanitizer available for use upon arrival and departure.

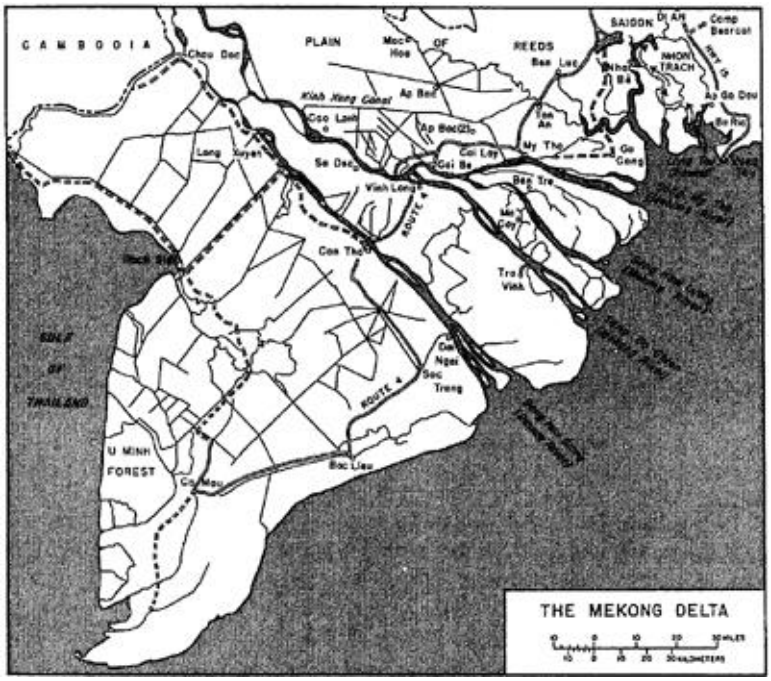
We are adding new articles to The Museum's website.
The Museum's website is www.memorialmuseum.org

Vietnam era PBR river patrol boat

History of patrol boats

The rivers and waterways of the Mekong Delta were of great significance during the Vietnam war as they were critical for transportation, commerce and communication. For this reason, the control of the rivers, especially the Mekong Delta was an integral part of the war strategy. The Patrol Boat Riverine played a key role in the struggle to control the rivers of Vietnam during the war and. The Patrol Boat, River or PBR as it is known militarily, became one of the most successful weapons systems used in Southeast Asia. In the Navy, everyone believed that control of the rivers of Vietnam was a key factor in achieving control of the country. Many scholars agree that the nature of the geography and demographics in Vietnam ultimately made control of the rivers and coastal regions was essential to success. The Viet Cong were very active in the Mekong Delta and had much of it under their control. This resulted in shortages of rice and inhibited shipment of rice throughout the country. The riverine force was created in 1965-1966. It was decided to follow the French paradigm which involved use of the net of waterways, employing ships as mobile bases, and employing smaller craft to patrol the waterways. It was during this time that a joint Army Navy task force was formed to perform these tasks.

The 9th Division was chosen to form the principle river ground force. River assault boats were to provide tactical mobility. These would conform to U.S. Navy organization structure. The force would incorporate two assault squadrons of fifty boats commanded by River Assault Flotilla One. Later it was determined that two more squadrons would be needed for the riverine operations to be effective. Well-irrigated paddies in the Mekong Delta that covered the flat land produced most of the country's rice. The delta's 3,000 nautical miles of waterways were extensively used for transportation. This network of waterways also enabled farmers to bring their harvests to market. The French recognized the importance of the rivers and canals in controlling the country and exploiting its resources especially, rice production. Many battles fought between French naval forces and Vietnamese independence fighters occurred along and on these inland waters. French units employed heavily armed and armored river craft. Many of these craft were surplus World War II U.S. amphibious craft. These were used to prevent Viet Minh forces from seizing Vietnam's primary food-producing regions, population centers, and ports. However, in May 1954, the Viet Minh defeated a large force of more than 10,000 French Union troops in the famous battle of Dien Bien Phu, an outpost located deep in the mountains and jungles of northern Vietnam and far from the country's inland waterways.



map showing complexity of the Mekong Delta region

A disaster for the French and a turning point in the war, this rout of the French army's most elite forces at Dien Bien Phu led ultimately to France's withdrawal from Indochina. This left the Democratic Republic of Vietnam (North Vietnam) under Ho Chi Minh in control of the northern regions of the country. Later, during the American Vietnam war, as war materials flowed into the Mekong Delta from Cambodia, the U.S. command on 18 December 1965 created the River Patrol Force which was referred to as Task Force116. During Operation Game Warden, 31-foot river patrol boats known as PBRs, assisted by armed helicopters inhibited the enemy's use of South Vietnam's larger rivers. The U.S. Navy and the U.S. Army joined together to form the Mobile Riverine Force (MRF), whose purpose was to locate, surround, and destroy main force of Communist combat units in the delta. The buildup of enemy forces which culminated in the well-coordinated, nationwide Tet Offensive of 1968 proved to be a crisis which would severely test the staying power of the allied forces fighting the Viet Cong. The attack achieved surprise, shocked the nation, and is considered by some to be the turning point of the war. Ultimately, the River Patrol Force, the Army-Navy Mobile Riverine Force, and the Vietnam Navy (VNN) River Force prevailed and reasserted control of the delta. However, in spite of their successes, the river warfare forces of the United States and the South Vietnamese ally were not able to ensure victory in this war where massed ground combat divisions fought in triple-canopy jungles, dense forests, rugged mountains, and arid plateaus. However, despite the limitations, the river forces were critical to operational success in the strategically important Mekong Delta and as well on the broad rivers of northern area of South Vietnam. The River Patrol Force, combined with the Army-Navy Mobile Riverine Force, and the Vietnam Navy River Force helped to blunt the enemy's Tet Offensive of 1968 in the delta and enabled the allies to keep their forces fighting at Hue and Khe Sanh supplied with ammunition and fuel. The success of SEALORDS and other operations helped the allies expand the Saigon government's political and military presence in southern Vietnam, secure the river approach to Saigon, mount the invasion of Cambodia in 1970, and frustrate the enemy's drive toward Saigon in 1972. Until the end, the Mekong River convoys defended by South Vietnamese and Cambodian river forces were the only feasible means for supplying the government in Phnom Penh with bulk supplies of fuel and ammunition. Partly because of the strength of the VNN river forces, the Mekong Delta was one of the last areas to fall into enemy hands in 1975. With little modern river warfare experience and no doctrine of its own to follow, the U.S. Navy proved capable of organizing, equipping, training, deploying, and supplying combat-ready forces. The service skillfully adapted former civilian craft, such as the PBR, amphibious vessels, and aircraft, to the riverine combat mission or tested and dismissed other equipment as unsuitable, such as the patrol air cushion vehicle. Leaders and staffs developed the innovative MRF afloat base, mobile base, and advanced tactical support base concepts for the logistic support of river

French riverine vessel employed in Vietnam

Museum's Vietnam era PBR river patrol boat

forces. The operators developed the tactics and procedures they considered the most effective based on experience for their particular unit, geographical area, or physical environment. The ability to learn and adapt was critical since there was no one-size-fits-all solution.

Uniflite Boats

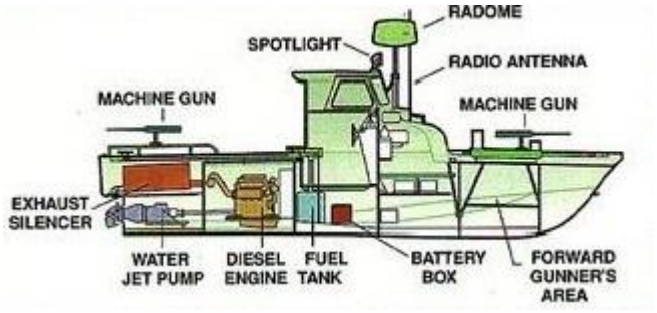
When 35 year old Arthur "Art" Nordtvedt established United Boat Builders, Inc. (Uniflite Boats) in Bellingham in late 1957, he developed a "Tri-Legged System" to diversify his product line and help insure the success of his fledgling company. His approach guaranteed year-around production of his fiberglass boats of up to 48-feet, and employment of a minimum workforce of 400. The Tri-Legged System was based on producing three separate lines of boats: pleasure craft, commercial designs, and military variations. But it was one particular military variant, the Vietnam War era 31-foot Patrol Boat River (PBR)1 for the U.S. Navy that elevated Uniflite to national boat builder prominence and financial success. By the end of production in 1968, the company had built about 250 of the widely-known, highly regarded small patrol boats for use in Vietnam.

At the left is a 31 foot Uniflite cruiser, one the most popular models

The company also supplied river patrol craft to the US Navy between 1965 and 1972 for use in the Vietnam War. Uniflite became a public company trading on the New York Stock Exchange in 1962, becoming eligible for Navy contracts. In 1965, the Navy awarded Uniflite with a contract to build 120 - 31' River Patrol Boats (PBR's). Eventually, there were over 750 PBR's built. At the height of production two PBR's were rolling off the assembly line along with one 36' landing craft daily. In addition to the Navy contracts, in the 1960's and early 1970's, Uniflite had numerous other military contracts for building 14' and 50' boats: patrol craft, landing craft and personnel boats. Uniflite also built commercial fishing boats and sailboats. The Navy recognized Uniflite's exceptional abilities to build with fiberglass.

The design of the PBR patrol boats

The PBR was a versatile boat with a fiberglass hull. The PBR did not use propellers. Instead, they used a water jet drive which enabled it to operate in shallow, weed-choked rivers. It drew only two feet of water when fully loaded. The boats were highly maneuverable, the drives could be pivoted to reverse direction, turn the boat in its own length, or come to a stop from full speed in a few boat lengths. The boats were powered by dual 180 hp. (115 kW) Detroit Diesel 6V53N engines with Jacuzzi Brothers pump-jet drives and reached top speeds of 28.5 knots (53 km/h 32 mph They were faster than any enemy craft but could be heard 3 miles away. The rigid hull was constructed of fiberglass resulting in a shallow draft, allowing the PBR elements to traverse portions of the Delta where other Navy craft could not enter. Accommodations amounted to a standard load of four personnel with one usually consisting of an interpreter for dialogue and navigational purposes. Ceramic-based armor allowed for some protection for the cabin where three of the crew and their fellow passengers resided. A forth crewmember mounted the separated forward armament tub at the bow. The military variant also had a turret up front for a twin .50-caliber machine gun in a rotating tub. A fixed .30-caliber machine gun was located on the stern. The



boat's helm station featured a windscreen with a soft canvas top. The coxswain station was on the portside and was equipped with two FM radios and control panel. A Raytheon radar was mounted atop the helm station. Standard radar range was about 1000 yards. The coxswain station and gun-mounts had ceramic-armor plating that could stop small arms fire. Installed tightly under the deck were the two GM 180-hp 6V53N diesel engines with no gearbox, since there was no reverse, and no propeller. Instead, it had a flexible shaft with a U-gate and water nozzles that were powered by Jacuzzi 14 YJ water-jet pumps. The pumps were mounted with the intake at the bottom of the boat, which then ran up through the boat and out an opening in the stern. The water would be sucked up through the line and passed through an impeller that would accelerate the water flow, shooting it out of the stern at high thrust. The water nozzles also controlled the steering. When the U-gate was lowered to cover the water nozzles, the water jet was rerouted 180-degees. This stopped the boat within two boat lengths and allowed turning the boat around "on a dime." This propulsion system gave the PBR exceptional maneuverability. A second version called the MK was optimized from the first boats, The Uniflite designers developed plans and specs for the MKII as the need for more boats was realized. The changes were designed to improve boat performance, which meant an increase in payload, but still maintaining 25-knots. "Art's original MK.I boat had a 'deep-vee' design, which was commonly used in rougher coastal waters. However, operating in riverine waters didn't need the amount of 'dead-rise' that was in those first boats. And, when you flattened the dead-rise out, you can enhance its weight bearing capacity. The new PBR variant was 32-feet long and its beam was increased to 11-feet, 5-inches. This increased its weight carrying capability over a broader area. It's a balance between reducing the deep-vee and increasing the beam with the existing horsepower. Another change was aluminum gunwales to resist wear when docking and boarding vessels. Most crews discovered that their greatest weapon was speed and maneuverability exiting the combat zone. "Hot-dogging" it out of harm's way; then hitting back was the key to survival. The hull's fiberglass varied in thickness up to a half-inch, so unless a Rocket-propelled Grenade (RPG) or small arms fire hit the engines or something equally solid, most projectiles would pass straight through the hull, and detonate after exiting. Floatation was built into the boats, which made them nearly impossible to sink.

Vietnam era PBR river patrol boat

The PBR was manufactured in two versions with the first having a 31-foot length and 10 foot, 7-inch beam. And the second, the Mark II version, at 32 feet long with a one foot wider beam and that had enhanced drives to reduce engine fouling, along with aluminum corrosion resistant gunwales. The PBR was usually manned by a four-man crew. Typically, a First Class Petty Officer served as boat captain, PBR MK II version with a gunner's mate, an engineman and a seaman on board. Each crewman was cross-trained in each other's job in the event one became unable to carry out his duties.

Typical armament configuration included twin M2HB .50 caliber (12.7 mm) machine guns forward in a rotating shielded tub, a single rear M60, one or two 7.62 mm light machine guns mounted on the port and starboard sides, and a Mk 19 grenade launcher. The standard armament of the PBR could also be augmented by whatever personal weapons were carried by the crew including M16 rifles, shotguns, .45 ACP handguns, and hand grenades. Some had a "piggyback" arrangement, a .50 cal machine gun on top of an 81mm mortar; others had a bow-mounted Mk16 Mod 4 Colt 20 mm automatic cannon, derived from the AN/M3 version of the Hispano-Suiza HS.404 also found on the LCMs and PBRs. Armament consisted of a myriad of weapons combinations based on experience and practice. A pintle mounting amidships could hold a Mark 19 40mm grenade launcher or a single M60 7.62mm (.30 caliber) belt-fed machine gun. The rear pintle mounted (protected by ceramic shields) could mount a single 12.7mm or 7.62mm machine guns. Additional armament for the boat consisted of mortar launchers, 20mm cannons and flamethrowers, the latter of which produced impressive results against the straw and thatch structures found throughout the region.

dual 50 cal machine guns mounted forward

Armor:

What the boats possessed in heavy firepower they lacked in armor or shielding. Although the .50 cal machine guns had some ceramic armor shielding and the Coxswain's flat had some quarter inch thick steel armor plate, the boats were designed to rely on rapid acceleration, maneuverability, and speed to get out of tight situations. The PBR hull was completely unarmored.

Purpose and uses*:*

The PBR was used in the Vietnam War from March 1966 until the end of 1971. They were deployed in a force that grew to 250 boats were used to stop and search river traffic attempt to disrupt weapons shipments. In this role they frequently became involved in firefights with enemy soldiers on boats and on the shore, and were used to insert and extract Navy SEAL teams

PBR interdicting Sanpan on river way in Viet Nam

Naval Reserve:

From 1966 to 1972 PBRs were operated by the Regular Navy as the principle component of Task Force 116. PBRs were operating with the U.S. Naval Reserve up until 1995 at Mare Island, California prior to the base's closure due to BRAC action that year. During the Vietnam War, Mare Island was home to the U.S. Navy's Repair Facilities, Mothballing Operations, Submarine Operations, and Riverine Training Operations for both Patrol Craft Inshore (PCF) Swift Boats, PBRs and the River Assault Boats of the Mobile Riverine Force. The training areas for the PBRs and Swift Boats still exist today within the Napa Sonoma Marsh state wildlife area. Sloughs such as Dutchman Slough, China

Slough, Napa Slough, Devil's Slough, Suisun marshland and the Napa River all run through the former training area. In the late 1990s, what remained of the U.S. Navy's PBR force was solely in the Naval Reserve (Swift Boats had been retired from the active duty U.S. Navy immediately following the Vietnam War during the early 1970s), and was moved further inland towards Sacramento, California, the state capital, which is also intertwined with rivers. From Sacramento, PBRs can still transit directly to and through San Francisco Bay and into the Pacific Ocean, if need be; the waters of the State Wildlife Area, next to the former U.S. Navy (Riverine) training base at Mare Island, are still available for U.S. Navy PBR usage. Today, only 36 PBRs exist in the United States. About six of them are seaworthy.

General Information

The U.S. Veterans Memorial Museum located in Huntsville Alabama *is a* 501c3 not-for-profit organization. There are more than 30 historical military vehicles from World War I to the present as well as artifacts and other memorabilia dating back to the Revolutionary War. Displays include a "Merci" 40 et 8 boxcar from World War I, a Cobra attack helicopter, a collection of jeeps, Sherman tanks and Stuarts, a half-track and flags, maps, uniforms and other artifacts from every U.S. conflict. The Museum is located just west of Memorial Pkwy in John Hunt Park at 2060A Airport Road, Huntsville, Al 35801. The U.S. Veterans Memorial Museum is dedicated to promoting the accomplishments of American military men and women.

The Museum's web page is www.memorialmuseum.org.
The Museum email of is *usvetnewsletter@gmail.com*

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