The numbers tell a story. They do not lie. According to the United States Department of Veterans Affairs, approximately 900 World War II veterans die every day. But that number is not the whole story. We cannot simply consider statistical losses when we look at that number. What we are really losing is a unique brand of warriors who let nothing stand in the way of the march toward victory, and no group of World War II veterans typified that never-say-die attitude better than that of America's submarine service.

Submariners could not afford to wait for the experts to solve their problems for them. Theirs was a war fought against the empire of Japan and the conventional wisdom of military planners and ship's designers.[1] From bridge to galley, all hands took the view that repairs could be made with anything available and every submarine sailor knew that an unprecedented ordeal lay ahead.[2] And as if submarine warfare were not dangerous enough, in addition to their assigned duties they were called upon to fill in as engineers, structural mechanics, medics, skin divers, demolition and weapons experts, interrogators and armed commandos. The submariners of World War II overcame the adversity created by material shortages, faulty weapons, poor training tactics, and the limited vision of military planners. Through trial by fire they became the embodiment of the order to "conduct unrestricted submarine warfare against the enemy."

The fundamental vulnerability faced by Japan prior to World War II was the lack of an adequate and secure source of raw materials, especially oil, iron ore and coal, and the insufficient production of machine tools necessary for a highly productive manufacturing sector. Japanese shipping was also vulnerable since it was not large enough to support large scale, simultaneous army and naval
operations while also supplying the Japanese military-industrial complex with a sufficient amount of raw materials. Simply put, Japanese productive capacity could not keep up with wartime demand so Japan provoked the Pacific War to secure the resources necessary for the development of a strong, invulnerable economy. However, the Japanese strategists realized that wartime economic and manpower demands would prevent the building of the kind of sophisticated and fundamentally strong industrial base it needed for a conflict with the United States.[3]

Even the most optimistic assessments by the Japanese economic planners maintained that the nation could retain its dominance in the conflict for one or two years before American industrial might would dramatically change the strategic situation, thus emphasizing the urgent need for a negotiated peace that would leave Japan with a stronger economic base for future growth. It was Japan’s peculiar strategic situation and the nation’s economic vulnerabilities that compelled Japan to attack Pearl Harbor in 1941.[4]

Although researched, planned and executed masterfully, the Japanese pilots who carried out the attack on Pearl Harbor neglected one vital detail. Their bombs and torpedoes were specifically marked for expenditure on the battleships at anchor and the aircraft carriers thought to be moored off Ford Island. The submarines, submarine tenders and submarine repair facilities were considered minor targets. Even the munitions dumps on nearby islands and the torpedo shop at Pearl were bypassed by the Japanese pilots during the attack. It was a tactical decision that carried disastrous consequences for the Japanese High Command.[5]

Pearl Harbor set into motion a succession of rapid and extensive Japanese conquests that carried their armed forces to Malay, Burma, Indonesia, the Philippines and the western Pacific until they threatened India in the west, Australia in the north, and Midway and Hawaii in the east. Against the rush of those Japanese conquests, Allied strategic planners theorized that no action could be brought against the enemy until the lines of communication were secured against the loss of America's battleships and the shifting of naval assets to support the priority assigned to the defense of the Panama Canal and Caribbean seaports. Naval strategy was still largely based on Mahan's structural model, and although the Navy was better prepared for World War II than it was for World War I naval planners and politicians made the mistake of building their fleets around battleships, aircraft carriers and heavy cruisers, paying too little concern to the utility of submarines.

In the early stages of the war, the transition from peacetime to wartime operations was slow in coming. During peacetime training evolutions practiced on high speed targets, any Commanding Officer (CO) whose submarine was detected during an attack was reprimanded. In the Pacific Submarine Squadrons, COs were threatened with instant dismissal from command if their periscopes were detected during their approach to a target.[6] Most submarine skippers were too cautious, lacked imagination and relied heavily on tactics that emphasized attacks on the enemy conducted well below periscope depth.
The problems with non-aggressive COs at the beginning of the war were to be expected since those submarine commanders were products of a peacetime navy that emphasized discipline and drill. The over cautious attitudes of many submarine COs were also a reflection of the procedural and tactical ignorance of the squadron commanders. Despite the lessons taught by the First World War, allied military planners only considered how to stop the menace of enemy submarines, not how to use their own submarines as the deadly weapons that they were. So it was not surprising when the USS *Seawolf* (SS-193), under the command of Lieutenant "Fearless" Freddy Warder, received orders for her first war patrol that simply instructed her to deliver 40 tons of .50 caliber anti-aircraft ammunition to the Philippines and return to port with personnel or equipment as directed by those in command at Corregidor. Mystified by the brevity of those orders, Warder visited squadron headquarters prior to his ship’s departure to ask if *Seawolf* could “seek attack on the enemy.” The Division Commander commended Warder for seeking the advice of his superiors and ordered him to “do nothing to jeopardize the success of the mission or unduly delay it.”[7] In short, *Seawolf* was used as a transport vessel—with specific orders NOT to engage the enemy. Poor organization, a lack of aggressive leadership and material defects resulted in the majority of submarine patrols ending with no ships sunk.

When submarine skippers were finally ordered to conduct offensive patrols, their troubles with the enemy took a backseat to their troubles with their torpedoes. No one quite understood what the problem with the torpedoes was, but each captain returning from patrol had the same story: they fired torpedoes, heard explosions and watched their targets sail away out of range. Most COs believed that their torpedoes were running deeper than their preset depths, but their seniors placed their failures on poor marksmanship. Admiral Charles Lockwood, who had a long history as an undersea warrior and was the most respected man in the submarine navy, listened to the complaints of his submarine skippers concerning the faulty torpedoes and tried to get the Bureau of Ordnance to conduct performance tests in order to ascertain the problem. Lockwood was in the unenviable position of having to praise some of his best submarine skippers for their success in sinking Japanese shipping while at the same time trying to condemn the erratic performance of the torpedoes. The experts at headquarters, including Admiral Ernest King who was instrumental in developing the Mark XIV torpedo when assigned to the Bureau of Ordnance, defended the mechanics of the torpedoes and blamed the marksmen. Left with little recourse in the matter, Lockwood ordered his own tests.
The USS Skipjack (SS-188) had just returned from patrol, and under the supervision of the Squadron Commander a target net was anchored in a deep water harbor where Skipjack got into position and fired three torpedoes. The first two torpedoes were set to run at ten feet. They tore holes in the net at twenty-five and eighteen feet. The third torpedo was set to run on the surface. It bounced off the bottom at sixty-five feet and went through the net at eleven feet. Admiral Lockwood then ordered the USS Saury (SS-189) to fire five torpedoes at the net. Those five fish produced similar results to those of the Skipjack. The Bureau of Ordnance rejected the test results based on the patrol records of returning submarines that clearly indicated that not all torpedoes failed to detonate and not all ran deep. In the face of the evidence however, Admiral King relented and Lockwood’s test results were finally accepted. Eight months after the war started, the Bureau of Ordnance finally admitted the Mark XIV ran deeper than it should have, but a bigger problem was soon found with the torpedoes.[8]

On her second war patrol in July 1943, USS Tinoso (SS-283) singled out an enemy tanker in a convoy and made her first attack from approximately 5,000 yards. A spread of four torpedoes was fired and all four exploded prematurely. Tinoso’s skipper, Lieutenant Commander L.R. Daspit, made a second
approach on the same target a few hours later and closed to within 2,000 yards. Another spread of four torpedoes yielded the same result as the first attack. Closing to within less than 1,000 yards on the tanker, which was now dead in the water, Daspit fired torpedo after torpedo, watched the wake of each one track right to the target, heard the "thud" that indicated that the torpedo had hit its mark and yet the target was unaffected by the onslaught. All in all, Daspit fired fifteen torpedoes at the Japanese tanker and only one exploded causing minimum damage. The baffled CO decided to keep his remaining torpedo and bring it back to the Pearl Harbor weapons facility for testing.

On her third war patrol, Tinosa tracked another Japanese tanker that was reported damaged after it had taken three hits from the USS Steelhead (SS-280). It took thirteen more torpedoes from the Tinosa before the "Obstinate Maru" was finally sunk. In the endorsement of Tinosa's end of patrol report, the Commander of Submarine Division 102 characterized the performance of the torpedoes as "gratifying."[9]

Tinosa's fourth war patrol was notable for a different kind of torpedo problem and one that required both innovation and individual courage to resolve. Following a depth charge attack by a Japanese destroyer, Tinosa was unable to close the outer door on one of its torpedo tubes. When it was safe for the boat to surface, two officers, Lieutenant C.E. Bell Jr. and Ensign K.R. Van Gorder, dove over the side and discovered that a torpedo was only partially ejected from the tube. Working without benefit of SCUBA equipment, and in enemy waters, they disabled the arming mechanism to prevent accidental detonation, and thus were later able to eject the torpedo safely.[10]

![World War II Battle Flag of USS Tinosa (SS-283)](image)

When similar problems with torpedoes were reported by other submarines returning from patrol, the Bureau of Ordnance once again refused to admit that there were any faults with the weapons and blamed the skippers and their crews for not preparing and firing the torpedoes in the proper manner. Independent testing on the lone torpedo that Tinosa saved from her frustrating second patrol proved otherwise. That torpedo was fired at a cliff face in Oahu to determine any possible problem, and after being recovered by a diver and disassembled at the repair facility it was discovered that the firing pin failed to hit the primer hard enough, and actually crushed on impact, when the torpedo hit the target at a zero angle. More tests on other torpedoes confirmed the problem as a faulty exploder mechanism, which was ultimately corrected when the contact exploders were redesigned.[11]

Gradually, submarine skippers abandoned pre-war theory-based tactics and adapted to the real combat scenarios presented by the enemy. Long-standing doctrine required that a submarine was to stay submerged and not to be seen. It would fire from periscope depth, not when surfaced. There was even an assigned speed for approaches during attacks.[12] The first pair of warriors to use a new combat technique was the team of Dudley "Mush" Morton and his Executive Officer Dick O'Kane who
made the **USS Wahoo (SS-238)** a symbol of American might at time when those on the home front badly needed heroes. Morton and O’Kane both believed that the quickest way to end the war was to sink as many enemy ships as possible—and both racked up impressive war records to achieve their shared goal. Morton, like many submarine skippers who followed him, rejected the doctrine of “up by night and down by day” because in his view the enemy was never looking for a submarine on the surface. He defied the conventional wisdom of prosecuting torpedo attacks while submerged and allowed his XO to track the target and compute the firing solution while he maneuvered the ship on the surface. He was aggressive almost to the point of recklessness. The hierarchy back in Pearl questioned his sanity at times and was often outraged by his disregard for regulations, but they never disputed the results that Morton’s unorthodox methods achieved. During the greatest patrol to date, in March 1943 **Wahoo** attacked and sank nine Japanese ships in just ten days. The skipper of the **USS Tang (SS-306)** who later bettered that mark was Morton’s own former Executive Officer, LCDR Richard O’Kane.

Not all submarine patrols resulted in record enemy tonnage sunk or were noteworthy for mere originality. Adversity during the aftermath of submarine attacks created plenty of opportunities for ingenuity when faced with a ship’s survival. The maiden war patrol of the **USS Plunger (SS-179)** resulted in the first depth-charging sustained by a Pacific Fleet submarine. While evading an enemy destroyer, **Plunger** was subjected to a pounding from twenty four depth charges. The attack taught submariners that Japanese underwater listening equipment, at least at the beginning of the war, was equal to that of contemporary American technology. The depth charge was the favored anti-submarine weapon of the Japanese navy throughout the war, but most American submarines were able to avoid catastrophic damage. The Japanese navy used small 75 pound charges set to detonate between 100 and 150 feet. **Plunger’s** CO reported that his ship was able to escape the counter attack by diving to 300 feet and operating mechanical equipment at reduced noise levels. Eventually, the Japanese increased the amount of TNT used in their depth charges to 300 pounds and learned to set them to explode deeper during their attacks on enemy submarines. The latter knowledge came courtesy of US Congressman Andrew Jackson May, a member of the House Military Affairs Committee, who during a press conference told reporters that the Japanese claims of the number of US submarines sunk were greatly exaggerated because they set their depth charges to explode at too shallow a depth. The breach of security outraged Admiral Lockwood who later stated, “I consider that indiscretion cost us ten submarines and 800 officers and men.” Shortly after that press conference the **USS Puffer (SS-268)** was subjected to a thirty-eight
hour depth charge pounding by a Japanese sub-chaser at depths up to 500 feet.[15]

As the war progressed in the Pacific, American submarines sank so many Japanese merchant ships that they were forced to shift their attentions to boarding and investigating smaller local watercraft, destroying mines and harassing the enemy through shore bombardments. Those missions were dangerous for a number of reasons, but none more so than the fact that a submarine on the surface was outside its operational element. Some submarines, like the USS Bluegill (SS-242) and the USS Barb (SS-220), went the extra distance and took the initiative to attack the Japanese on land.

The Bluegill used its idle time while assigned to lifeguard duty to attack and invade Pratas Island, located 150 miles of the Chinese coast. The island served as a radio and meteorological station for the Japanese after the Allies recaptured the Philippines in 1944. Several members of Bluegill's crew armed with machine guns and cutlasses, along with two commandos from the Australian Z-Force who were embarked on the submarine, stormed ashore. The Bluegill commandoes found a makeshift village consisting of a pump house, a radio shack, and a meteorological laboratory as its principal buildings. The buildings were all constructed of concrete, and evidently fairly sturdy. Two wooden guns and two stuffed soldiers were guarding the clearing. Fresh fruits and vegetables indicated that the island had been evacuated a few days earlier so the "Pirates of Pratas" met no enemy resistance during their invasion. The radio towers were destroyed and the meteorological facility was set ablaze. The buildings were then blown up and the fuel depot set on fire. Before leaving, the crew of the submarine hoisted the American flag over the island in an appropriate ceremony, and renamed it "Bluegill Island." Thus old glory had been placed farther west than by any of the other island invaders. After seizing radio equipment and printed messages that the Japanese left behind, the landing party returned to the boat.[16]

Arguably, the best of the wartime innovators was the CO of the USS Barb (SS-220) Lieutenant Eugene Fluckey. The Barb was no different than any other submarine that fought in the Pacific theater, but the ship's commanding officer certainly was. Fluckey was the first skipper to utilize his submarine like a motor torpedo boat taking the fight to the enemy rather than waiting for the enemy to come to him. Under his command, the Barb had compiled an enviable war record in sinking 34 Japanese merchant ships and several Imperial warships.[17]

After completing a refit in Pearl Harbor in late 1944, Barb returned to the Western Pacific to continue terrorizing the Japanese Merchant Fleet. However, always the innovator, while in Hawaii, Fluckey had the shipyard equip his submarine with a portable rocket launcher. Waiting for merchant targets to wander into the Barb's patrol area was not going to be a problem anymore. Fluckey intended to attack ships at anchor in Japanese harbors. The installation of the rocket launcher enabled the submarine to circumvent Japanese coastal defenses and made it a perfect platform to attack the enemy where they least expected.
One of the most important strategic values of America's submarine force had nothing to do with commerce raiding, underwater warfare, or special operations. Submarines were the best “secret weapon” in the Allied arsenal, often inflicting damage on the enemy that was thought to be accomplished by noiseless aircraft, rockets or commando raids. They supplied guerrillas with arms, ammunition, money, food, medicine, and radio equipment and rendezvoused with commandos and coast watchers who gathered critical information for the inevitable invasion and reoccupation of the Philippines. The Japanese had some idea that American submarines were working in the general area of the islands, but they were unaware of the vast amount of aid those boats provided to the guerrillas. The increased level of guerrilla action carried out against the Japanese garrisons, combined with their finding spent American ammunition cartridges dated 1942 and 1943, led them to believe that they had been attacked by American paratroopers.[18]

As most of the Japanese merchant fleet was being sent to bottom of the ocean, their troops in the Philippines were forced to get more and more of their food from local farmers. Making matters worse for garrison commanders was a history of Japanese abuse, brutalization and oppression directed toward the local population. The Japanese leadership thus lost any chance of meeting their unexpected expanded food needs by appealing to the sympathies of Filipino farmers. Faced with possible starvation, out of desperation the Japanese High Command on the Philippines turned to Jose Laurel, the president of the puppet regime known as “The Philippine Republic,” to encourage locals to cooperate with the Japanese. Laurel also urged the Philippine guerrillas to surrender by telling them that the Japanese fleet was so powerful that it would prevent the Americans from landing any kind of ships, troops or other support on Philippine soil. In response to Laurel’s plea, one of the guerrilla leaders sent the Philippine president four Delicious apples, a variety that did not grow in Japan or the Philippines. The obvious intent was to let Laurel know that American submarines were already regular visitors to the Philippine Islands.[19]

Indeed, the ships and men of the "Silent Service" were the first American naval assets to take the fight to the enemy, the force most responsible for the destruction of the Japanese merchant fleet and
economy - crippling its ability to resupply its armies - and comprised the most versatile weapon in the Arsenal of Democracy. Through initiative, teamwork, leadership and ingenuity, the submariners of World War II built the foundations for future special warfare roles and established many of the traditions of our modern submarine force.

Arguably, every generation and every branch of service are characterized by selfless individuals of exceptional abilities who, through personal sacrifice and courage, have kept America safe since 1776. Today, training, technology and specialized warfare roles give the United States submarine service unparalleled abilities in taking the battle to the enemy, but technology and specialization come with the cost of more exacting procedural adherence and limited chances for broad scale ingenuity.

This is not to say that today’s submariners are in any way inferior to those of past generations, indeed they are just as capable of carrying out their missions and just as proud of their service. What has to be remembered is that today’s specialized undersea warfare capabilities were made possible by the efforts of our World War II veterans. They were sailors who seized initiative and applied ingenious solutions to overcome technological or physical shortcomings. World War II saw the last of the old species of land and naval warfare in which the fate of nations hung upon the ability of a few fearless warriors to rise above the disruption of mind and terror of painful annihilation by drowning, suffocation, burning, or scalding, who did their duty in spite of it all. Those days are past, but their stories became legends on par with the Knights of the Round Table, the Defeat of the Spanish Armada and the Battle of Trafalgar.[20] As long as ships put out to sea, and new sailors pick up the torches of the old, the American submariners of World War II will be remembered, and their legacy allowed a new generation of submariners to reach unlimited heights while standing on the shoulders of giants.

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Hide Footnotes and Bibliography

Footnotes

[1]. American submarine warfare operations, both conventional and unconventional, in the Atlantic were severely hampered by the successes of the Allied convoy system. In the first six months of 1943, the war in the Atlantic turned decisively in favor of the Allies after sinking 150 German U-boats. The American submarines that had previously patrolled a wide area of ocean were shifted to patrol positions off Norway and North Iceland. After several months it became apparent that those submarines were not being used to the best advantage – not for any operational deficiencies, but because there was a serious lack of targets. Accordingly, the American submarine squadron in the Atlantic theater was returned to the United States for refit and reassignment to the Pacific Fleet.


[3]. “Pacific War” undated essay courtesy of Dr. James Ehrman, Director Military History Program, Norwich University, 2009.


[5]. Ibid., 4-11.


www.subvetpaul.com. See also Hoyt, 105.


[10]. Ibid. See also http://www.subvetpaul.com/FourthPatrolE_Bell.htm for an account of Tinoas’a fourth war patrol.


[13]. Roscoe, 528.

[14]. Ibid., 51 and 52.

[15]. Kershaw, 22. See also Roscoe, 558.

[16]. The story of the USS Bluegill is courtesy of Mr. J. Read Gwyer, a former Bluegill crewmember and fellow historian.


[19]. Ibid., 146-147.

[20]. Edward L. Beach as quoted in Padfield, 479.

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Daniel Rean is originally from NY where he enlisted in the Navy in 1972. He spent 14 years as a submarine sailor and diver. From 1980-84, he was assigned to the Navy’s deepest diving manned submersible the Bathyscaph TRIESTE II (DSV-1) where he served as Chief of the Boat, Engineer, and Assistant Officer in Charge. He qualified as a Deep Submergence Pilot in 1983. He was commissioned as a CWO-2 in 1986 and assigned to the USS PROTEUS (AS-19) at Apra Harbor, Guam. He completed tours as a technical instructor at Submarine Officer Basic School and as a division officer at the Naval Submarine Support Facility in New London, CT. He retired in 1993 and completed his college undergraduate degrees at Franklin Pierce University in New Hampshire and his Master's at Norwich University in Vermont. He is married to the former Kyle Harrington, and he has 4 children and live in Portsmouth, NH.

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