

# WORLD WAR TWO SUBMARINES

## WORLD WAR TWO SUBMARINES: AN IN-DEPTH EXPLORATION

WORLD WAR TWO SUBMARINES PLAYED A PIVOTAL ROLE IN NAVAL WARFARE, REVOLUTIONIZING TACTICS AND STRATEGIES ACROSS THE GLOBE. THESE UNDERWATER VESSELS WERE INSTRUMENTAL IN DISRUPTING ENEMY SUPPLY LINES, GATHERING INTELLIGENCE, AND ENGAGING IN DIRECT COMBAT. THEIR TECHNOLOGICAL ADVANCEMENTS, STRATEGIC IMPORTANCE, AND THE DRAMATIC STORIES OF THEIR CREWS HAVE LEFT A LASTING LEGACY IN MILITARY HISTORY. THIS ARTICLE EXPLORES THE EVOLUTION, TYPES, NOTABLE SUBMARINES, AND TECHNOLOGICAL INNOVATIONS OF WORLD WAR TWO SUBMARINES, OFFERING A COMPREHENSIVE UNDERSTANDING OF THEIR SIGNIFICANCE DURING THIS CRITICAL PERIOD.

---

## THE EVOLUTION OF SUBMARINES LEADING UP TO WORLD WAR TWO

### EARLY DEVELOPMENT OF SUBMARINE WARFARE

THE CONCEPT OF UNDERWATER COMBAT DATES BACK TO THE 19TH CENTURY, WITH PIONEERING EFFORTS BY INVENTORS LIKE JOHN PHILIP HOLLAND AND SIMON LAKE. BY THE EARLY 20TH CENTURY, SUBMARINES HAD BEGUN TO EMERGE AS FORMIDABLE TOOLS IN NAVAL ARSENALS, PRIMARILY FOR RECONNAISSANCE AND BLOCKADE MISSIONS.

### SUBMARINES IN WORLD WAR I

WORLD WAR I MARKED THE FIRST SIGNIFICANT USE OF SUBMARINES IN WARFARE, ESPECIALLY BY GERMANY WITH ITS U-BOAT FLEET. THESE VESSELS DEMONSTRATED THE DEVASTATING POTENTIAL OF UNDERWATER WARFARE, SINKING MERCHANT SHIPS AND CHALLENGING TRADITIONAL NAVAL DOMINANCE.

### TRANSITION TO WORLD WAR TWO

BUILDING UPON WWI INNOVATIONS, WWII SAW RAPID ADVANCEMENTS IN SUBMARINE TECHNOLOGY, TACTICS, AND ARMAMENT. COUNTRIES RECOGNIZED THE STRATEGIC VALUE OF SUBMARINES, LEADING TO EXTENSIVE DEVELOPMENT PROGRAMS.

---

## TYPES OF SUBMARINES USED IN WORLD WAR TWO

### 1. FLEET SUBMARINES

DESCRIPTION: DESIGNED FOR OPEN-SEA OPERATIONS AND FLEET SUPPORT, THESE SUBMARINES HAD GREATER RANGE AND ENDURANCE.

#### KEY FEATURES:

- LARGER SIZE
- BETTER SEA-KEEPING CAPABILITIES
- EQUIPPED WITH TORPEDOES AND DECK GUNS

#### EXAMPLES:

- U.S. GATO-CLASS
- GERMAN TYPE VII

### 2. COASTAL SUBMARINES

DESCRIPTION: SMALLER VESSELS MEANT FOR OPERATIONS NEAR HOME WATERS, RECONNAISSANCE, AND DEFENSE.

#### KEY FEATURES:

- SHORTER RANGE

- EASIER TO MANEUVER IN CONFINED WATERS

#### EXAMPLES:

- JAPANESE TYPE B SUBMARINES
- GERMAN TYPE II

### 3. BALLISTIC MISSILE SUBMARINES (LATER IN WWII)

WHILE MORE PROMINENT DURING THE COLD WAR, SOME EARLY EXPERIMENTS WITH MISSILE-LAUNCHING CAPABILITIES OCCURRED DURING WWII, LAYING THE GROUNDWORK FOR FUTURE DEVELOPMENTS.

---

## NOTABLE SUBMARINES OF WORLD WAR TWO

### U.S. GATO-CLASS SUBMARINES

OVERVIEW: THE BACKBONE OF THE U.S. SUBMARINE FLEET IN WWII, GATO-CLASS VESSELS WERE INSTRUMENTAL IN THE PACIFIC THEATER.

#### ACHIEVEMENTS:

- SANK OVER 1,600 ENEMY SHIPS
- CONDUCTED RECONNAISSANCE AND SPECIAL OPERATIONS
- NOTABLE SUBMARINES: USS GATO (SS-212), USS TANG (SS-306)

### GERMAN U-BOAT FLEET

OVERVIEW: THE GERMAN KRIEGSMARINE'S U-BOAT FLEET WAS A FORMIDABLE FORCE, ESPECIALLY IN THE BATTLE OF THE ATLANTIC.

#### NOTABLE U-BOATS:

- U-48: SANK OVER 50 SHIPS
- U-96: FEATURED IN THE FILM "DAS BOOT"

#### STRATEGIES:

- WOLFPACK TACTICS
- USE OF ENIGMA CODE-BREAKING

### JAPANESE I-BOAT SERIES

OVERVIEW: JAPANESE SUBMARINES FOCUSED ON RECONNAISSANCE AND ATTACKING ALLIED SHIPPING IN THE PACIFIC.

#### NOTABLE FEATURES:

- LARGER SIZE FOR CARRYING AIRCRAFT OR SPECIAL FORCES
- LIMITED SUCCESS COMPARED TO GERMAN AND AMERICAN COUNTERPARTS

---

## TECHNOLOGICAL INNOVATIONS IN WWII SUBMARINES

### PROPULSION SYSTEMS

- TRANSITION FROM DIESEL-ELECTRIC TO MORE ADVANCED DIESEL ENGINES
- SOME EXPERIMENTAL NUCLEAR PROPULSION CONCEPTS EMERGED BUT WERE NOT OPERATIONAL DURING WWII

## ARMAMENT

- TORPEDOES: MARK 14 (U.S.), G7E (GERMAN), TYPE 95 (JAPANESE)
- DECK GUNS FOR SURFACE COMBAT
- EARLY EXPERIMENTS WITH MISSILE LAUNCHING CAPABILITIES

## DETECTION AND STEALTH

- USE OF SONAR (ASDIC) FOR UNDERWATER DETECTION
- DEVELOPMENT OF STEALTH COATINGS AND DESIGN MODIFICATIONS
- ENIGMA AND OTHER CODE-BREAKING EFFORTS ENHANCED TARGETING

## COMMUNICATION AND NAVIGATION

- IMPROVED PERISCOPES AND RADIO SYSTEMS
- USE OF CELESTIAL NAVIGATION AND DEAD RECKONING FOR UNDERWATER NAVIGATION

---

## STRATEGIC ROLES AND TACTICS OF WWII SUBMARINES

### COMMERCE RAIDING (UNRESTRICTED SUBMARINE WARFARE)

- TARGETING MERCHANT SHIPPING TO CUT OFF SUPPLIES
- GERMAN U-BOATS ENGAGED IN THE BATTLE OF THE ATLANTIC
- AMERICAN SUBMARINES DISRUPTING JAPANESE LOGISTICS

### BLOCKADE AND NAVAL DOMINATION

- SUBMARINES AS TOOLS TO ENFORCE NAVAL BLOCKADES
- DISRUPTION OF ENEMY REINFORCEMENTS AND SUPPLIES

### RECONNAISSANCE AND SPECIAL OPERATIONS

- GATHERING INTELLIGENCE BEHIND ENEMY LINES
- DEPLOYING COMMANDOS AND SABOTAGE TEAMS

### FLEET SUBMARINE ENGAGEMENTS

- ENGAGING ENEMY WARSHIPS
- PROTECTING CARRIER GROUPS AND FLEET FORMATIONS

---

## CHALLENGES FACED BY WWII SUBMARINE CREWS

- THREAT OF DEPTH CHARGES AND ANTI-SUBMARINE WARFARE (ASW) TACTICS
- LIMITED UNDERWATER ENDURANCE
- HARSH LIVING CONDITIONS ABOARD SUBMARINES
- RISKS OF MECHANICAL FAILURE AND DETECTION

---

## THE IMPACT OF WWII SUBMARINES ON NAVAL WARFARE

### STRATEGIC OUTCOMES

- ALTERED THE COURSE OF NAVAL BATTLES
- ENABLED PROLONGED BLOCKADES AND ECONOMIC WARFARE

- CONTRIBUTED SIGNIFICANTLY TO THE ALLIED VICTORY IN THE PACIFIC

#### TECHNOLOGICAL LEGACY

- PAVED THE WAY FOR NUCLEAR SUBMARINES
- ADVANCED SONAR, NAVIGATION, AND STEALTH TECHNOLOGIES

#### HUMAN STORIES AND HEROISM

- TALES OF BRAVERY FROM CREWS LIKE THE USS TANG AND U-96
- THE DEVELOPMENT OF SUBMARINE TACTICS AND TRAINING

---

#### POST-WAR DEVELOPMENTS AND THE LEGACY OF WWII SUBMARINES

##### TRANSITION TO COLD WAR SUBMARINE WARFARE

- INTRODUCTION OF NUCLEAR PROPULSION
- BALLISTIC MISSILE SUBMARINES AS STRATEGIC DETERRENTS

##### MODERN SUBMARINE DESIGN PRINCIPLES

- ENHANCED STEALTH AND ENDURANCE
- INTEGRATION OF MISSILE SYSTEMS AND ADVANCED SENSORS

##### PRESERVATION AND MUSEUMS

- MANY WWII SUBMARINES PRESERVED AS HISTORICAL SITES
- EDUCATIONAL EFFORTS TO HONOR SUBMARINE CREWS

---

#### CONCLUSION

WORLD WAR TWO SUBMARINES REPRESENTED A SIGNIFICANT LEAP IN NAVAL WARFARE TECHNOLOGY AND TACTICS. THEIR EFFECTIVENESS IN COMMERCE RAIDING, STRATEGIC BLOCKADES, AND RECONNAISSANCE RESHAPED MARITIME COMBAT AND LAID THE GROUNDWORK FOR MODERN SUBMARINE DESIGN. THE STORIES OF THE CREWS, THE TECHNOLOGICAL INNOVATIONS, AND THE STRATEGIC IMPACTS CONTINUE TO FASCINATE HISTORIANS AND MILITARY ENTHUSIASTS ALIKE. UNDERSTANDING THE HISTORY OF WWII SUBMARINES OFFERS VALUABLE INSIGHTS INTO THE EVOLUTION OF UNDERWATER WARFARE AND ITS ENDURING INFLUENCE ON GLOBAL MILITARY STRATEGY.

---

KEYWORDS: WORLD WAR TWO SUBMARINES, WWII SUBMARINES, U-BOAT, GATO-CLASS, TYPE VII, SUBMARINE TECHNOLOGY, NAVAL WARFARE, UNDERSEA COMBAT, SUBMARINE TACTICS, MILITARY HISTORY

## FREQUENTLY ASKED QUESTIONS

### WHAT WERE THE MOST FAMOUS SUBMARINES USED DURING WORLD WAR II?

SOME OF THE MOST FAMOUS WWII SUBMARINES INCLUDE THE GERMAN U-BOAT FLEET, ESPECIALLY U-47 AND U-96, THE AMERICAN GATO-CLASS SUBMARINES LIKE USS NAUTILUS, AND THE JAPANESE I-400 CLASS SUPER SUBMARINES DESIGNED FOR LONG-RANGE MISSIONS.

## How Did Submarines Impact Naval Warfare During World War II?

Submarines revolutionized naval warfare by enabling stealth attacks on enemy shipping, disrupting supply lines, and forcing navies to develop new tactics such as convoy systems and anti-submarine warfare techniques, significantly influencing the outcome of naval battles.

## What Technological Advancements in Submarines Occurred During World War II?

WWII saw significant advancements including the development of snorkels for submerged running, improved sonar and radar detection systems, more advanced torpedoes, and the introduction of nuclear power post-war that laid the groundwork for future submarine technology.

## How Effective Were German U-boats in Disrupting Allied Shipping During WWII?

German U-boats were initially highly effective, sinking large amounts of Allied merchant ships in the Atlantic. However, Allied countermeasures like improved convoy tactics, sonar, and code-breaking gradually reduced their effectiveness later in the war.

## What Was the Role of American Submarines in the Pacific Theater?

American submarines played a crucial role in the Pacific, sinking a significant portion of Japan's merchant fleet and warships, thereby crippling Japan's supply and military capabilities and contributing to the Allied victory in the Pacific.

## Were There Any Notable Naval Battles Involving Submarines in WWII?

Yes, notable battles include the Battle of the Atlantic, where U-boat wolf packs targeted Allied convoys, and the Battle of the Philippine Sea, which involved submarine tactics alongside aircraft carriers, shaping the naval landscape of the Pacific.

## How Did World War II Submarines Influence Post-War Submarine Design and Strategy?

WWII submarines highlighted the importance of stealth, speed, and technological innovation, leading to the development of nuclear-powered submarines, ballistic missile capabilities, and more advanced detection and combat systems in the post-war era.

## Additional Resources

World War II Submarines: An In-Depth Expert Analysis

Submarines during World War II represented some of the most innovative, strategic, and technologically advanced vessels of their time. Their impact on naval warfare was profound, reshaping maritime combat and influencing the outcome of numerous campaigns. In this comprehensive review, we explore the evolution, design, operational roles, and legacy of WWII submarines, providing insights into their formidable capabilities and limitations.

---

# THE EVOLUTION OF SUBMARINES LEADING TO WORLD WAR II

UNDERSTANDING WWII SUBMARINES REQUIRES A GRASP OF THEIR DEVELOPMENTAL HISTORY. FROM THE EARLIEST EXPERIMENTAL VESSELS TO THE SOPHISTICATED UNDERWATER COMBAT PLATFORMS, SUBMARINE TECHNOLOGY ADVANCED RAPIDLY DURING THE FIRST HALF OF THE 20TH CENTURY.

## PRE-WAR INNOVATIONS AND PIONEERING DESIGNS

THE ROOTS OF WWII SUBMARINES TRACE BACK TO THE LATE 19TH AND EARLY 20TH CENTURIES, WITH NATIONS EXPERIMENTING WITH VARIOUS PROPULSION SYSTEMS, HULL DESIGNS, AND ARMAMENT CONFIGURATIONS. NOTABLE DEVELOPMENTS INCLUDED:

- DIVERGENT PROPULSION TECHNOLOGIES: EARLY SUBMARINES EMPLOYED EITHER GASOLINE OR DIESEL ENGINES FOR SURFACE RUNNING AND ELECTRIC MOTORS FOR SUBMERGED OPERATION. DIESEL-ELECTRIC SYSTEMS BECAME THE STANDARD DUE TO SAFETY AND EFFICIENCY.
- HULL DESIGNS: SUBMARINES EVOLVED FROM SMALL, CRAMPED VESSELS TO LARGER, MORE SEAWORTHY SUBMARINES CAPABLE OF EXTENDED PATROLS. THE INTRODUCTION OF THE STREAMLINED, HYDRODYNAMIC HULL IMPROVED UNDERWATER SPEED AND MANEUVERABILITY.
- ARMAMENT: INITIALLY, TORPEDOES WERE THE PRIMARY OFFENSIVE WEAPON, WITH MOUNTING CONFIGURATIONS EVOLVING FROM SIMPLE TORPEDO TUBES TO MULTIPLE BOW AND STERN TUBES FOR INCREASED FIRING CAPACITY.

## THE INTERWAR PERIOD AND TECHNOLOGICAL REFINEMENTS

BETWEEN THE WORLD WARS, NAVIES INVESTED HEAVILY IN IMPROVING SUBMARINE TECHNOLOGY:

- ENHANCED PROPULSION: LARGER BATTERIES AND MORE POWERFUL ELECTRIC MOTORS INCREASED SUBMERGED ENDURANCE AND SPEED.
- IMPROVED SONAR AND PERISCOPE SYSTEMS: THESE ALLOWED FOR BETTER DETECTION AND TARGETING, VITAL FOR STEALTH AND EFFECTIVENESS.
- OPERATIONAL DOCTRINE: COUNTRIES DEVELOPED DOCTRINES EMPHASIZING CONVOY RAIDING, RECONNAISSANCE, AND BLOCKADE ENFORCEMENT, INFLUENCING SUBMARINE DESIGN PRIORITIES.

THIS PERIOD CULMINATED IN THE DEVELOPMENT OF HIGHLY CAPABLE WWII SUBMARINES, SETTING THE STAGE FOR THEIR PIVOTAL ROLES.

---

## TYPES AND CLASSES OF WWII SUBMARINES

GLOBAL NAVIES CONSTRUCTED VARIOUS CLASSES OF SUBMARINES TAILORED TO THEIR STRATEGIC NEEDS. WHILE MANY NATIONS BUILT SIMILAR TYPES, DIFFERENCES IN DESIGN PHILOSOPHY LED TO UNIQUE CAPABILITIES.

## GERMAN U-BOATS: THE KRIEGSMARINE'S WOLFPACKS

GERMANY'S U-BOAT FLEET WAS ARGUABLY THE MOST FAMOUS OF WWII, RENOWNED FOR THEIR EFFECTIVENESS IN ATLANTIC

WARFARE.

- TYPE VII U-BOATS: THE WORKHORSE OF THE GERMAN SUBMARINE FLEET, THESE VESSELS WERE SMALL, AGILE, WITH A DISPLACEMENT OF APPROXIMATELY 700-800 TONS. THEY FEATURED:
  - ARMAMENT: 5 TORPEDO TUBES (4 BOW, 1 STERN), WITH A TORPEDO COMPLEMENT OF 14-20.
  - SPEED: SURFACE SPEED OF AROUND 17 KNOTS; SUBMERGED SPEED OF 7-8 KNOTS.
  - RANGE: UP TO 8,500 MILES AT 10 KNOTS ON THE SURFACE.
- TYPE IX U-BOATS: LARGER AND LONGER-RANGE, SUITABLE FOR DISTANT PATROLS ACROSS THE ATLANTIC AND INDIAN OCEANS.

## AMERICAN SUBMARINES: THE SILENT KILLERS

THE UNITED STATES NAVY FOCUSED ON LONG-RANGE, OCEAN-GOING SUBMARINES PRIMARILY FOR COMMERCE RAIDING.

- GATO-CLASS: INTRODUCED IN 1941, THESE SUBMARINES HAD:
  - DISPLACEMENT: ~1,500 TONS SURFACED.
  - ARMAMENT: 10 TORPEDO TUBES, WITH A TOTAL OF 24 TORPEDOES.
  - RANGE: OVER 11,000 MILES AT 10 KNOTS.
  - CAPABILITIES: CAPABLE OF OPERATING IN BOTH ATLANTIC AND PACIFIC THEATERS.
- BALAO-CLASS: AN IMPROVED VERSION WITH INCREASED TORPEDO CAPACITY AND BETTER SONAR SYSTEMS.

## BRITISH SUBMARINES: THE ROYAL NAVY'S STEALTH AND ENDURANCE

THE ROYAL NAVY OPERATED VARIOUS CLASSES DESIGNED FOR RECONNAISSANCE AND BLOCKADE ENFORCEMENT.

- S-CLASS: SMALL, MANEUVERABLE SUBMARINES PRIMARILY USED IN THE NORTH SEA AND MEDITERRANEAN.
- T-CLASS: LARGER, WITH LONGER RANGE, SUITABLE FOR MEDITERRANEAN AND ATLANTIC OPERATIONS.

## JAPANESE SUBMARINES: THE STRATEGIC AND OFFENSIVE TOOLS

JAPAN'S IMPERIAL NAVY USED SUBMARINES BOTH FOR FLEET SUPPORT AND OFFENSIVE OPERATIONS.

- I-BOAT SERIES: LARGER, OCEAN-GOING SUBMARINES CAPABLE OF CARRYING AIRCRAFT (E.G., I-400 CLASS), DESIGNED FOR LONG-RANGE STRIKES AND RECONNAISSANCE.
- TYPE B AND C: USED FOR FLEET SUPPORT AND RECONNAISSANCE, WITH SOME EQUIPPED TO CARRY MIDGET SUBMARINES.

---

## DESIGN AND TECHNOLOGICAL FEATURES OF W/WII SUBMARINES

THE DESIGN OF W/WII SUBMARINES WAS DRIVEN BY THE DEMANDS OF STEALTH, ENDURANCE, OFFENSIVE CAPABILITY, AND SURVIVABILITY.

## HULL CONSTRUCTION AND MATERIALS

- DOUBLE-HULLED DESIGN: MANY SUBMARINES FEATURED A DOUBLE-HULLED CONSTRUCTION, PROVIDING EXTRA BUOYANCY AND STRUCTURAL STRENGTH.
- MATERIALS: STEEL ALLOYS WERE STANDARD, ENSURING DURABILITY UNDER PRESSURE AND RESISTANCE TO COMBAT DAMAGE.

## PROPULSION SYSTEMS

- SURFACE PROPULSION: DIESEL ENGINES POWERED THE SUBMARINE ON THE SURFACE, PROVIDING HIGH SPEED AND ENDURANCE.
- UNDERWATER PROPULSION: ELECTRIC MOTORS, POWERED BY BATTERIES, ALLOWED SILENT MOVEMENT UNDERWATER BUT WITH LIMITED ENDURANCE (~1-2 DAYS AT A TIME).

## NAVIGATION AND DETECTION EQUIPMENT

- PERISCOPES: FOR VISUAL RECONNAISSANCE AND TARGETING.
- SONAR (HYDROPHONES): FOR DETECTING ENEMY SHIPS AND SUBMARINES.
- RADAR AND RADIO: FOR SURFACE NAVIGATION AND COMMUNICATION.

## ARMAMENT AND OFFENSIVE CAPABILITIES

- TORPEDOES: THE PRIMARY WEAPON, CAPABLE OF SINKING SHIPS AND LARGER VESSELS.
- DECK GUNS: USUALLY A 76MM OR 88MM GUN FOR ENGAGING UNARMED OR LIGHTLY ARMED SHIPS, OR FOR SURFACE COMBAT.
- SPECIAL EQUIPMENT: SOME VESSELS CARRIED MINELAYING GEAR OR CARRIED AIRCRAFT (E.G., I-400 CLASS).

---

## OPERATIONAL STRATEGIES AND TACTICS

WWII SUBMARINES PLAYED VERSATILE ROLES, ADAPTING THEIR TACTICS TO THE EVOLVING NAVAL LANDSCAPE.

### WOLFPACK TACTICS

GERMAN U-BOATS EMPLOYED COORDINATED GROUPS—WOLFPACKS—TO OVERWHELM CONVOY DEFENSES, ATTACKING EN MASSE AT NIGHT OR DURING LOW VISIBILITY CONDITIONS.

### COMMERCE RAIDING AND BLOCKADE

ALLIES AND AXIS POWERS USED SUBMARINES TO DISRUPT SUPPLY LINES, TARGETING MERCHANT SHIPS CARRYING VITAL RESOURCES.

## RECONNAISSANCE AND SPECIAL MISSIONS

JAPANESE SUBMARINES CONDUCTED RECONNAISSANCE, SUPPLY MISSIONS, AND EVEN ATTEMPTED UNDERWATER STRIKES AGAINST HIGH-VALUE TARGETS.

## TECHNOLOGICAL COUNTERMEASURES

ALLIES DEVELOPED CONVOY SYSTEMS, SONAR DETECTION, DEPTH CHARGES, AND AIRCRAFT PATROLS TO COUNTER SUBMARINE THREATS.

---

## NOTABLE W/WII SUBMARINE ENGAGEMENTS AND IMPACT

W/WII SAW NUMEROUS LEGENDARY SUBMARINE BATTLES THAT UNDERScoreD THEIR STRATEGIC IMPORTANCE.

### BATTLE OF THE ATLANTIC

- THE GERMAN U-BOAT CAMPAIGN AIMED TO CHoke ALLIED SUPPLY LINES.
- THE INTRODUCTION OF RADAR, IMPROVED SONAR, AND CONVOY TACTICS GRADUALLY TURNED THE TIDE.
- NOTABLE SINKINGS: RMS LUSITANIA (1915, PRE-W/WII), BUT DURING W/WII, U-BOAT SUCCESSES INCLUDED SINKING OVER 2,700 ALLIED SHIPS.

### PACIFIC THEATER

- AMERICAN SUBMARINES SANK A SIGNIFICANT PORTION OF JAPANESE MERCHANT SHIPPING, CRIPPLING JAPAN'S WAR ECONOMY.
- THE SINKING OF THE AIRCRAFT CARRIER USS YORKTOWN BY A JAPANESE SUBMARINE EXEMPLIFIED SUBMARINE THREAT TO NAVAL ASSETS.
- THE I-400 CLASS SUBMARINES REPRESENTED JAPAN'S STRATEGIC INNOVATION WITH THEIR ABILITY TO CARRY AIRCRAFT FOR SURPRISE ATTACKS.

## TECHNOLOGICAL AND TACTICAL INNOVATIONS

- USE OF A SNORKEL ALLOWED DIESEL ENGINES TO OPERATE WHILE SUBMERGED, EXTENDING UNDERWATER ENDURANCE.
- THE DEVELOPMENT OF THE "HEDGEHOG" ANTI-SUBMARINE WEAPON IMPROVED DETECTION AND ATTACK EFFICIENCY.

---

## LEGACY AND LESSONS LEARNED

W/WII SUBMARINES LEFT A LASTING LEGACY, INFLUENCING POST-WAR NAVAL DESIGN AND STRATEGY.

## TECHNOLOGICAL ADVANCEMENTS

- SUBMARINE STEALTH AND ENDURANCE IMPROVED DRAMATICALLY.
- INTRODUCTION OF NUCLEAR PROPULSION IN THE POST-WAR ERA WAS DIRECTLY INFLUENCED BY WWII LESSONS.

## STRATEGIC IMPACT

- DEMONSTRATED THE IMPORTANCE OF UNDERSEA WARFARE.
- HIGHLIGHTED THE NEED FOR INTEGRATED ANTI-SUBMARINE TACTICS AND TECHNOLOGY.

## MODERN RELEVANCE

- WWII SUBMARINES LAID THE GROUNDWORK FOR TODAY'S ADVANCED SUBMARINES, WHICH NOW FEATURE NUCLEAR PROPULSION, BALLISTIC MISSILE CAPABILITIES, AND SOPHISTICATED SONAR SYSTEMS.

---

## CONCLUSION: AN ENDURING MARITIME INNOVATION

WORLD WAR II SUBMARINES WERE A TESTAMENT TO HUMAN INGENUITY AND TECHNOLOGICAL PROWESS. THEIR EVOLUTION FROM PRIMITIVE UNDERWATER VESSELS TO FORMIDABLE STEALTH PLATFORMS FUNDAMENTALLY CHANGED NAVAL WARFARE. WHILE THE TECHNOLOGY HAS SINCE ADVANCED TO NUCLEAR-POWERED, MULTI-MISSION SUBMARINES, THE LESSONS LEARNED DURING WWII CONTINUE TO INFLUENCE SUBMARINE DESIGN AND STRATEGY TODAY.

THE STRATEGIC, TECHNOLOGICAL, AND TACTICAL INNOVATIONS OF WWII SUBMARINES UNDERScoreD THEIR VITAL ROLE IN MARITIME CONFLICTS—AN ENDURING LEGACY THAT CONTINUES TO SHAPE NAVAL DOCTRINE AND UNDERWATER WARFARE. WHETHER AS SYMBOLS OF TECHNOLOGICAL PROGRESS OR AS DECISIVE TOOLS OF WARFARE, WWII SUBMARINES REMAIN A FASCINATING SUBJECT OF STUDY AND A PIVOTAL CHAPTER IN MARITIME HISTORY.

## World War Two Submarines

**world war two submarines:** *The Silent Service in World War II* Edward Monroe-Jones, Michael Green, 2012-12-07 From the naval battle of Guadalcanal to rescuing George Bush Sr. in the Pacific, here are the stories of US submariners in WWII. The Silent Service in World War II tells the story of America's intrepid submarine warriors in the words of the men who served and fought in the Pacific against Japan. When Pearl Harbor was attacked in 1941, the enemy had already deployed naval forces, but the United States was soon able to match them. By 1943, new Gato-class submarines were making a difference, carrying the war not just to the Japanese Imperial Navy, but to the vital merchant fleet that transported essential resources to the island country. Starting with the American victory at Guadalcanal, US submarine forces began to constrict the Japanese sea lanes. Operating independently and in wolfpacks, they attacked convoys operating beyond the range of American airpower, making daring forays even into Japanese home waters. Taking on Japanese warships, as well as rescuing downed airmen—including the grateful first President Bush—US submarines made an enormous contribution to our war against Japan. Aside from enemy action, the sea itself could be an extremely hostile environment—as many of these stories attest. From early war patrols in obsolescent, unreliable S-boats to modern fleet submarines roving the Pacific, the forty-six stories in

this anthology offer a full understanding of life as a US Navy submariner in combat.

**world war two submarines: Final Patrol** Don Keith, 2006-10-03 During World War II, the U.S. Navy's submarine service suffered the highest casualty percentage of all the American armed forces, losing one in five submariners. But despite the odds, these underwater warriors accounted for almost 60 percent of Japanese shipping losses, and were a major factor in winning the war. 16 U.S. submarines - and one German U-Boat - that saw action during WWII are now open to the public. Most have been restored and authentically equipped. Final Patrol takes a fascinating look at these subs and the personal stories of the brave sailors who lived, fought, and often died in them. Now, visitors can climb into these cramped steel cylinders, peer through their torpedo tubes, and imagine diving under the sea - perhaps for the last time - to stalk a fanatical enemy who threatened our nation's freedom.

**world war two submarines: Submarine Commander** Paul R. Schratz, 2013-07-24 A fascinating personal memoir of underwater combat in World War II, told by a man who played a major role in those dangerous operations. Frank and beautifully written, Submarine Commander's breezy style and irrepressible humor place it in a class by itself. This book will be of lasting value as a submarine history by an expert and as an enduring military and political analysis. In early 1943 the submarine USS Scorpion, with Paul R. Schratz as torpedo officer, slipped into the shallow waters east of Tokyo, laid a minefield, and made successful torpedo attacks on merchant shipping. Schratz participated in many more patrols in heavily mined Japanese waters as executive officer of the Sterlet and the Atule. At war's end he participated in the Japanese surrender, aided the release of American POWs, and had a key role in the disarming of enemy suicide submarines. He then took command of the revolutionary new Japanese submarine I-203 and returned it to Pearl Harbor. But this was far from the end of Schratz's submarine career. In 1949 he commissioned the ultramodern USS Pickerel, the most deadly submarine then afloat, and set a world's record in a 21-day, 5,200-mile submerged passage from Hong Kong to Honolulu. With the outbreak of the Korean War, the Pickerel was immediately sent to Korea to participate in secret intelligence operations only recently declassified and never before revealed in print. Schratz's broad military experience makes this a far from ordinary memoir.

**world war two submarines: Hitler's Attack U-Boats** Jak P. Mallmann Showell, 2021-10-01 A definitive introduction by a highly recognized authority who writes beautifully and clearly. — Naval Historical Foundation The fact that German submarines almost managed to cut off Britain's vital imports during the First World War hadn't been forgotten by Hitler—and when, in 1935, he repudiated the Treaty of Versailles, Britain, magnanimously, signed an Anglo-German Naval Agreement. This allowed the Germans to build their submarine strength up to one third of the Royal Navy's tonnage. When war broke out in 1939, German U-boats went quickly into action, but with only four years of production and development, the main armament of these submarines was considerably weaker than equivalent boats in other navies and many other features, such as living conditions, were also significantly inferior. Yet, the German U-boat onslaught against British merchant ships in autumn 1940 was highly successful because the attacks were made on the surface at night and from such close range that a single torpedo would sink a ship. Soon, though, Allied technology was able to detect U-boats at night, and new convoy techniques, combined with powerfully armed, fast modern aircraft searching the seas, meant that by 1941 it was clear that Germany was losing the war at sea. Something had to be done. The new generation of attack U-boats that had been introduced since Hitler came to power needed urgent improvement. This is the story of the Types II, VII, and IX that had already become the 'workhorse' of the Kriegsmarine's submarine fleet and continued to put out to sea to attack Allied shipping right up to the end of the war. The Type II was a small coastal boat that struggled to reach the Atlantic; the Type VII was perfectly at home there, but lacked the technology to tackle well protected convoys; while the Type IX was a long-range variety modified so it could operate in the Indian Ocean. This book by the renowned Kriegsmarine historian explores these attack U-boats at length, including details of their armament, capabilities, and crew facilities; the story of their development and operational history;

and just what it was like to operate such a vessel.

**world war two submarines: World War Two in Europe** David T. Zabecki, 1999 First Published in 1999. Routledge is an imprint of Taylor & Francis, an informa company.

**world war two submarines: Submarines of World War Two** Erminio Bagnasco, 2000 Over 2,500 submarines saw action during WWII--and now a single book covers every type and class, from midgets to U-cruisers to experimental designs. The mass of detail includes technical characteristics, while hundreds of charts and photos give facts and figures on construction, displacement, dimensions, speed, range, operational depth, fuel load, armament, and complement. Each class of submarine's performance--and fate--is chronicled, as is the evolution of submarine warfare--providing a rare view of how design improvement affected the war's outcome.

**world war two submarines: Submarines in World War II** Robert A. Germinsky, 1994

**world war two submarines: U-Boats at War in World War I and II** Jon Sutherland, Diane Canwell, 2009-11-19 A photographic history of German submarines in the world wars, including unseen images from the personal collections of captains and crew. U-boats were the scourge of the seas for Allied shipping during both world wars, almost bringing Britain to the brink of starvation on several occasions. This book contains unseen photographs taken by German submarine crew and captains during each war. The World War One selection features a submariner's photos of U-25, an early German U-boat. They belonged to WO Friedrich Pohl, who served on U-boats SM-25 and SMU-33. There are many photos of the U-boat itself, crew on deck, and attacks on Norwegian merchant ships with the surface gun. U-25 was launched July 12, 1913, sank a total of twenty-one ships and 14,126 tons, and surrendered to France on February 23, 1919. The World War Two photos include images from an original WW2 U-boat commander's photo album. It belonged to Kapitän Leutnant Herbert Bruninghaus. As a U-boat navigator, he served on the famous U-38 under ace Heinrich Liebe. Bruninghaus later went on to command three U-boats of his own: U-6, U-148, and U-1059. There are also original images from a Kriegsmarine officer's photo album (unfortunately unnamed), including photos of Commander Prien's U-47 returning to Kiel after attacks at Scapa Flow.

**world war two submarines: The USS Puffer in World War II** Craig R. McDonald, 2008-02-08 Submarines were responsible for about 55 percent of the tonnage of the Japanese fleets sunk during World War II. The 22 percent casualty rate of U.S. submariners was the highest of the military services. This volume traces the career of the submarine the USS Puffer from the laying of her keel and her commissioning on April 27, 1943, until her departure for the scrap yard in late 1960. Compiled from interviews with former crew members, including the author's father, Donald B. McDonald, as well as other contemporary sources, it follows the crew of the Puffer through nine war patrols. Events recollected include the First War Patrol, which resulted in a record-setting 38 hour submergence because of enemy fire; the dangerous transfer of torpedoes while surfaced in enemy waters; and the wild bombardment of Japanese shore installations with the 5-inch deck gun. There are numerous wartime photographs and appendices providing a list of awards earned by the crew and a summary of claimed successful attacks. Brief biographies of the seven commissioned officers are also included.

**world war two submarines: Unrestricted Warfare** James F. DeRose, 2008-04-21 Unrestricted Warfare reveals the dramatic story of the harsh baptism by fire faced by U.S. submarine commanders in World War II. The first skippers went to battle hamstrung by conservative peacetime training and plagued by defective torpedoes. Drawing extensively from now declassified files, Japanese archives, and the testimony of surviving veterans, James DeRose has written a fascinating account of the men and vessels responsible for the only successful submarine campaign of the war. They clearly charted a new course to victory in the Pacific. ADVANCE PRAISE FOR UNRESTRICTED WARFARE James DeRose has done an excellent job-- surprisingly so, in view of his lack of true WWII submarine experience. He obviously contacted everyone he could find who served on one of the three boats he concentrated on, and he read, as well, everything he could find that was written about them. . . . DeRose shines by his interpretation of events as the Japanese must have seen them.

. . . His reconstruction of how Wahoo came to her end may well be pretty close to correct. . . . He does the same with Tang.-CAPTAIN EDWARD L. BEACH, USN author of *Submarine!* and *Run Silent, Run Deep* An outstanding addition to the literature of the Silent Service. . . . The depth of research is wonderful. . . . This is fine history . . . that rivals Blair's *Silent Victory*.-PAUL CROZIER, sitemaster, *Legends of the Deep* ([www.warfish.com](http://www.warfish.com)) Web site on the USS Wahoo I knew all of the book's main characters quite well. . . . I am also completely familiar with submarine operations in the Pacific. With that background I couldn't fail to thoroughly enjoy DeRose's book. It is well written and has the right feel.-CHESTER W. NIMITZ JR., rear admiral, USN (Ret.) Sail with American submariners into tightly guarded Japanese home waters; undergo the horror of a depth charge attack; experience the thrill of victory with some of the U.S. Navy's ace submarine skippers. All this--and much more--is contained in James F. DeRose's compelling *Unrestricted Warfare*. No one interested in the naval side of World War II should be without it.-NATHAN MILLER author of *War at Sea: A Naval History of World War II*

**world war two submarines:** US Submarine Crewman 1941-45 Robert Hargis, 2012-07-20 This book takes a close look at the Dolphins of the US Navy submarine force, it covers recruitment, training, service conditions and combat experiences, and discusses the effects of advances in torpedo technology on crew roles. The Japanese surprise attack on Pearl Harbor in December 1941 battered the surface fleet, but the submarine force escaped unharmed. It was up to the Silent Service to spearhead the naval war against Japan, cutting her supply routes and neutralizing her naval threat. By August 1945, US Navy submarines had made 488 war patrols. The achievements of the Silent Service were not without consequence 3,500 American crewmen lost their lives.

**world war two submarines:** *The Japanese Submarine Force and World War II* Akihiko Yoshida, 2013-01-15 When first published in 1995, this book was hailed as an absolutely indispensable contribution to the history of the Pacific War. Drawing heavily from Japanese sources and American wartime intercepts of secret Japanese radio messages, a noted American naval historian and a Japanese mariner painstakingly recorded and evaluated a diverse array of material about Japan's submarines in World War II. The study begins with the development of the first Japanese 103-ton Holland-type submersible craft in 1905 and continues through the 1945 surrender of the largest submarine in the world at the time, the 5300-ton I-400 class that carried three airplanes. Submarine weapons, equipment, personnel, and shore support systems are discussed first in the context of Japanese naval preparations for war and later during the war. Both successes and missed opportunities are analyzed in operations ranging from the California coast through the Pacific and Indian Oceans to the coast of German-occupied France. Appendixes include lists of Japanese submarine losses and the biographies of key Japanese submarine officers. Rare illustrations and specifically commissioned operational maps enhance the text.

**world war two submarines: Hellcats** Peter Sasgen, 2011-11-01 A heart-stopping true tale of a submarine mission aimed at destroying Japan's merchant marine lifeline and ending World War II. By 1945, the U.S. Navy's submarine force in the Pacific had sunk over a thousand enemy cargo ships and tankers supplying the food, weapons, and oil Japan needed to continue to fight. Yet this once mighty merchant fleet continued to thrive in the Sea of Japan, where, protected from American submarines by a seemingly impenetrable barrier of deadly minefields, they provided a tenuous lifeline for the Japanese. Senior American commanders believed that if these enemy ships were sunk, Japan would be forced to surrender. Here is the incredible story of Operation Barney, the daring plot to penetrate those minefields and decimate the enemy fleet. The brainchild of the dedicated sub commander Vice Admiral Charles Lockwood, the mission would hinge on a new experimental sonar system that would, with luck, guide American submarines safely past the mines and into the open sea. The nine submarines chosen, nicknamed Hellcats, were tasked with the impossible--the combined crews of 760 submariners all knew their chances of survival depended on an unproven technology and their own nerve. Based on original documents and the poignant personal letters of one doomed Hellcat commander, Sasgen crafts a classic naval tale of one of World War II's most dangerous missions.

**world war two submarines: *Clear the Bridge!*** Richard O'Kane, 1996-12-17 The story of Tang and her gallant crew ranks with the most amazing of naval history. Whether rescuing Navy fliers off Truk or stalking enemy convoys off Japan, Tang carried the war to the enemy with unparalleled ferocity. Tang's skipper on all five of her war patrols, Rear Admiral Richard H. O'Kane is acknowledged as the top submarine skipper of World War II. His personal decorations include three Navy Crosses and the Congressional Medal of Honor. He retired as a rear admiral from his command of the Submarine School, rounding out twenty years with the boats. He also wrote the classic *Wahoo: The Patrols of America's Most Famous WWII Submarine*. Praise for *Clear the Bridge!* "There is no doubt that Tang was the best. . . . Most of the rest of us wondered what it was she had that the others didn't. And here it is, in this extraordinary 'tell it as it really happened' book, written by the most daring, most professional submarine skipper of the war."—Capt. Edward Beach, author of *Run Silent, Run Deep* "A classic of naval literature. . . . A stirring tribute, not only to [Richard O'Kane's] gallant crew, but to all World War II submariners."—Michael D. Hull, *Military Magazine* "Reading of [Tang's] career and of the men aboard her is one of the great reading experiences of my life."—Broox Sledge, *The Book World*

**world war two submarines: *The Japanese Submarine Force and World War II*** Carl Boyd, Akihiko Yoshida, 1996 In World War II, Japanese submarines were ineffective compared with those of the Americans and Germans. In this book an American naval historian and a Japanese mariner have recorded and evaluated a diverse amount of material, much of it only recently declassified, and drawn new conclusions. The focus of their examinations is American wartime interceptions of secret Japanese radio messages, and official Japanese sources.

**world war two submarines: *United States Submarine Operations in World War II*** Theodore Roscoe, 1949

**world war two submarines: *Leader of the Pack*** Mark W. Allen, 2011-05-04 Leader of the Pack recounts the incredible history of USS Batfish, a record-setting American World War II fleet submarine. Batfish entered the pantheon of military lore during its famous sixth patrol in February 1945, where it sank a record three Japanese submarines in seventy-six hours. In addition to offering a rousing and meticulously researched account of the famous sixth patrol, author and military historian Mark W. Allen unravels a nautical mystery that had gone unresolved for over sixty years: the identity of the first Japanese submarine sunk by Batfish skipper John K. Fyfe. Controversy has surrounded the identity of the first submarine almost since the day of the sinking, but *Leader of the Pack*, through a diligent recreation of the events that unfolded in the days leading up to the sixth patrol, solves the mystery once and for all. Lastly, Allen shares a personal story, never told before in such detail, of Batfish's rescue of three downed aviators who were forced to ditch their B-25 Mitchell bomber after it was hit by enemy anti-aircraft fire during a bombing mission on the Japanese homeland.

**world war two submarines: *Find 'Em, Chase 'Em, Sink 'Em*** Mike Ostlund, 2011-11-08 Now in paperback, revised and updated, the stirring and authoritative account of one of World War II's most highly decorated submarines *Find 'Em, Chase 'Em, Sink 'Em* is the first book to recount the tragic and mysterious loss of the World War II submarine USS Gudgeon. In April 1944, the highly decorated submarine USS Gudgeon slipped beneath the waves in one of the most treacherous patrol areas in the most dangerous military service during World War II. Neither the Gudgeon nor the crew was ever seen again. Author Mike Ostlund's "Uncle Bill," the operator of a farm implements business, was aboard that ship as a lieutenant junior grade. Through extensive research of patrol reports in U.S. and Japanese naval archives, interviews with veterans who had served aboard the Gudgeon before its final patrol, and the personal effects of the lost men's relatives, Ostlund has assembled the most accurate account yet of this remarkably successful submarine's exploits, of the men aboard from steward to captain, and of what we now know about her demise. *Find 'Em, Chase 'Em, Sink 'Em* details the memories and life lessons of the young men who went to sea aboard Gudgeon before its last patrol knowing hardly anything, and came home having seen too much.

**world war two submarines: *Encyclopedia of British Submarines 1901-1955*** Paul Akermann,

2002-11 The history of the development of submarines covered in this book spans the most tumultuous years of the 20th century. When the little Holland No. 1 was launched in 1901, few could guess that the submarine would become the most potent weapon of war ever developed.

**world war two submarines:** *World War II Submarine* Richard Humble, 2015-02-19 Take an incredible tour through a World War Two Submarine. Explore its relevance to the people who built it and the lives that they led. Stunning cut-away illustrations help lead the reader through the often complex historical periods. Written in a clear, concise style. Contents, glossary, and index.

## Related to world war two submarines

**World news - breaking news, video, headlines and opinion | CNN** 2 days ago View CNN world news today for international news and videos from Europe, Asia, Africa, the Middle East and the Americas

**Breaking News, US News, World News and Video - CNN** Freedom Project Impact Your World Inside Africa 2 Degrees CNN Heroes All Features Climate Storm Tracker Wildfire Tracker Video Photos Longform Investigations CNN Profiles CNN

**Breaking News, Latest News and Videos | CNN** View the latest news and breaking news today for U.S., world, weather, entertainment, politics and health at CNN.com

**Russian invasion of Ukraine** Everything you need to know about Russia's invasion of Ukraine

**Europe news - breaking news, video, headlines and opinion | CNN** Why one of the world's biggest soccer teams traveled 4,000 miles to play a Champions League match in Asia From ending conflicts to joining wars, ex-British PM Blair vies for Gaza

**Stock Market Data - US Markets, World Markets, and Stock** 2 days ago Stock market data coverage from CNN. View US markets, world markets, after hours trading, quotes, and other important stock market activity

**China news - breaking news, video, headlines and opinion | CNN** China's DeepSeek shook the tech world. Its developer just revealed the cost of training the AI model Taiwan unveils first missile jointly developed with American arms company

**Asia news - breaking news, videos, headlines and opinion | CNN** Tokyo takes the top spot in 'world's coolest' neighborhood rankings (with London and Chicago close behind) How the world's most elderly country is fighting heat in a deadly double crisis

**CNN Headlines** CNN Headlines is a curated channel covering major news events across politics, international, business, and entertainment, and showcasing the most impactful stories of the day

**Americas news - breaking news, video, headlines and opinion | CNN** View the latest South America news, Canada news, Mexico news and other top stories and videos from the Americas on CNN.com

**World news - breaking news, video, headlines and opinion | CNN** 2 days ago View CNN world news today for international news and videos from Europe, Asia, Africa, the Middle East and the Americas

**Breaking News, US News, World News and Video - CNN** Freedom Project Impact Your World Inside Africa 2 Degrees CNN Heroes All Features Climate Storm Tracker Wildfire Tracker Video Photos Longform Investigations CNN Profiles CNN

**Breaking News, Latest News and Videos | CNN** View the latest news and breaking news today for U.S., world, weather, entertainment, politics and health at CNN.com

**Russian invasion of Ukraine** Everything you need to know about Russia's invasion of Ukraine

**Europe news - breaking news, video, headlines and opinion | CNN** Why one of the world's biggest soccer teams traveled 4,000 miles to play a Champions League match in Asia From ending conflicts to joining wars, ex-British PM Blair vies for Gaza

**Stock Market Data - US Markets, World Markets, and Stock** 2 days ago Stock market data coverage from CNN. View US markets, world markets, after hours trading, quotes, and other important stock market activity

**China news - breaking news, video, headlines and opinion | CNN** China's DeepSeek shook the

tech world. Its developer just revealed the cost of training the AI model Taiwan unveils first missile jointly developed with American arms company

**Asia news - breaking news, videos, headlines and opinion | CNN** Tokyo takes the top spot in 'world's coolest' neighborhood rankings (with London and Chicago close behind) How the world's most elderly country is fighting heat in a deadly double crisis

**CNN Headlines** CNN Headlines is a curated channel covering major news events across politics, international, business, and entertainment, and showcasing the most impactful stories of the day

**Americas news - breaking news, video, headlines and opinion | CNN** View the latest South America news, Canada news, Mexico news and other top stories and videos from the Americas on CNN.com

**World news - breaking news, video, headlines and opinion | CNN** 2 days ago View CNN world news today for international news and videos from Europe, Asia, Africa, the Middle East and the Americas

**Breaking News, US News, World News and Video - CNN** Freedom Project Impact Your World Inside Africa 2 Degrees CNN Heroes All Features Climate Storm Tracker Wildfire Tracker Video Photos Longform Investigations CNN Profiles CNN

**Breaking News, Latest News and Videos | CNN** View the latest news and breaking news today for U.S., world, weather, entertainment, politics and health at CNN.com

**Russian invasion of Ukraine** Everything you need to know about Russia's invasion of Ukraine

**Europe news - breaking news, video, headlines and opinion | CNN** Why one of the world's biggest soccer teams traveled 4,000 miles to play a Champions League match in Asia From ending conflicts to joining wars, ex-British PM Blair vies for Gaza

**Stock Market Data - US Markets, World Markets, and Stock** 2 days ago Stock market data coverage from CNN. View US markets, world markets, after hours trading, quotes, and other important stock market activity

**China news - breaking news, video, headlines and opinion | CNN** China's DeepSeek shook the tech world. Its developer just revealed the cost of training the AI model Taiwan unveils first missile jointly developed with American arms company

**Asia news - breaking news, videos, headlines and opinion | CNN** Tokyo takes the top spot in 'world's coolest' neighborhood rankings (with London and Chicago close behind) How the world's most elderly country is fighting heat in a deadly double crisis

**CNN Headlines** CNN Headlines is a curated channel covering major news events across politics, international, business, and entertainment, and showcasing the most impactful stories of the day

**Americas news - breaking news, video, headlines and opinion | CNN** View the latest South America news, Canada news, Mexico news and other top stories and videos from the Americas on CNN.com

**World news - breaking news, video, headlines and opinion | CNN** 2 days ago View CNN world news today for international news and videos from Europe, Asia, Africa, the Middle East and the Americas

**Breaking News, US News, World News and Video - CNN** Freedom Project Impact Your World Inside Africa 2 Degrees CNN Heroes All Features Climate Storm Tracker Wildfire Tracker Video Photos Longform Investigations CNN Profiles CNN

**Breaking News, Latest News and Videos | CNN** View the latest news and breaking news today for U.S., world, weather, entertainment, politics and health at CNN.com

**Russian invasion of Ukraine** Everything you need to know about Russia's invasion of Ukraine

**Europe news - breaking news, video, headlines and opinion | CNN** Why one of the world's biggest soccer teams traveled 4,000 miles to play a Champions League match in Asia From ending conflicts to joining wars, ex-British PM Blair vies for Gaza

**Stock Market Data - US Markets, World Markets, and Stock** 2 days ago Stock market data coverage from CNN. View US markets, world markets, after hours trading, quotes, and other important stock market activity

**China news - breaking news, video, headlines and opinion | CNN** China's DeepSeek shook the tech world. Its developer just revealed the cost of training the AI model Taiwan unveils first missile jointly developed with American arms company

**Asia news - breaking news, videos, headlines and opinion | CNN** Tokyo takes the top spot in 'world's coolest' neighborhood rankings (with London and Chicago close behind) How the world's most elderly country is fighting heat in a deadly double crisis

**CNN Headlines** CNN Headlines is a curated channel covering major news events across politics, international, business, and entertainment, and showcasing the most impactful stories of the day

**Americas news - breaking news, video, headlines and opinion | CNN** View the latest South America news, Canada news, Mexico news and other top stories and videos from the Americas on CNN.com

## **Related to world war two submarines**

**US Submarine Veterans honor lives lost in World War II Submarine Force** (1hon MSN) The U.S. Submarine Veterans Inc. Rhode Island Base held a memorial service on Saturday to remember over 3,000 lost in the U.S

**US Submarine Veterans honor lives lost in World War II Submarine Force** (1hon MSN) The U.S. Submarine Veterans Inc. Rhode Island Base held a memorial service on Saturday to remember over 3,000 lost in the U.S

**WE THE PEOPLE: Manitowoc-built submarines shaped naval battles in World War II** (WBAY1mon) MANITOWOC, Wis. (WBAY) - It's a floating time capsule along the lakeshore, with a unique link to U.S. history. The building of the Navy's secret weapons connects Manitowoc to a turning point in World

**WE THE PEOPLE: Manitowoc-built submarines shaped naval battles in World War II** (WBAY1mon) MANITOWOC, Wis. (WBAY) - It's a floating time capsule along the lakeshore, with a unique link to U.S. history. The building of the Navy's secret weapons connects Manitowoc to a turning point in World

**Inside Britain's Last Surviving Second World War-Era Submarine | HMS Alliance** (History Hit TV on MSN2d) HMS Alliance is a Royal Navy A-class, Amphion-class or Acheron-class submarine, laid down towards the end of the Second World War and completed in 1947. Over her 28-year career, she held the world

**Inside Britain's Last Surviving Second World War-Era Submarine | HMS Alliance** (History Hit TV on MSN2d) HMS Alliance is a Royal Navy A-class, Amphion-class or Acheron-class submarine, laid down towards the end of the Second World War and completed in 1947. Over her 28-year career, she held the world

**Ship that hunted submarines in World War II departs Muskegon museum** (Yahoo23d) The USS Silversides Museum — a Muskegon mainstay known to Michigan youth as the place where they once spent the night on a World War II submarine — parted this week with one of its prized exhibits, an

**Ship that hunted submarines in World War II departs Muskegon museum** (Yahoo23d) The USS Silversides Museum — a Muskegon mainstay known to Michigan youth as the place where they once spent the night on a World War II submarine — parted this week with one of its prized exhibits, an

**Galveston's World War II Submarine Finally Reopens** (Houston Press16y) [{ "name": "Inline Story Links", "component": "11821434", "insertPoint": "4th", "startingPoint": 3, "requiredCountToDisplay": "3", "maxInsertions": 5 }, { "name

**Galveston's World War II Submarine Finally Reopens** (Houston Press16y) [{ "name": "Inline Story Links", "component": "11821434", "insertPoint": "4th", "startingPoint": 3, "requiredCountToDisplay": "3", "maxInsertions": 5 }, { "name

**Ship that hunted submarines in World War II departs Muskegon museum** (Detroit Free Press23d) The West Michigan submarine museum tried to preserve the ship, but it was too

damaged. In recent months, the ship had been closed because it posed a safety concern to visitors.  
The USS Silversides  
**Ship that hunted submarines in World War II departs Muskegon museum** (Detroit Free Press23d) The West Michigan submarine museum tried to preserve the ship, but it was too damaged. In recent months, the ship had been closed because it posed a safety concern to visitors.  
The USS Silversides

## Related Articles

- [ian rankin rebus novels](#)
- [diary of a wimpy kid book 19](#)
- [the green roasting tin](#)

[Back to Home](#)