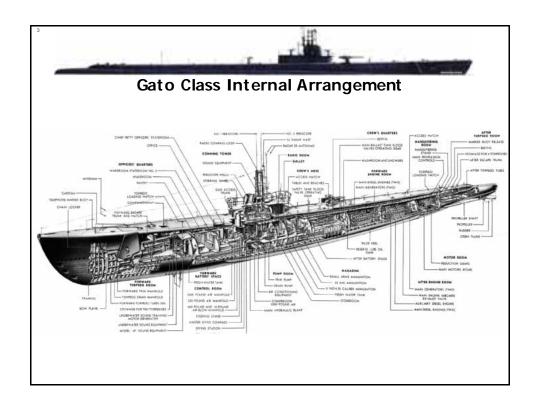
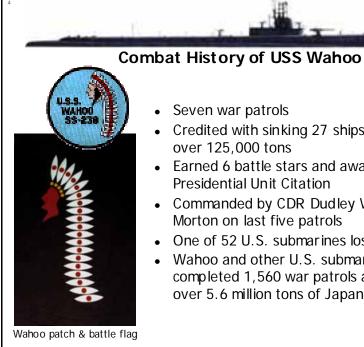




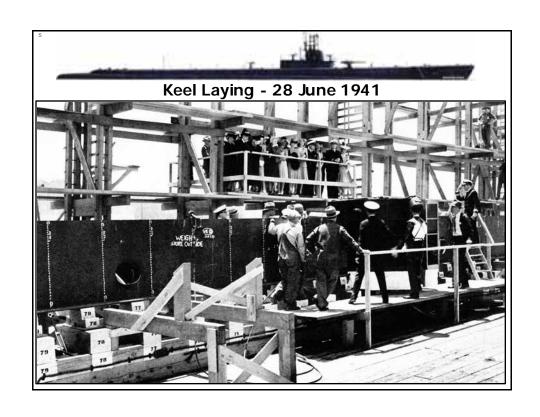
# **Gato Class Submarine Specifications**

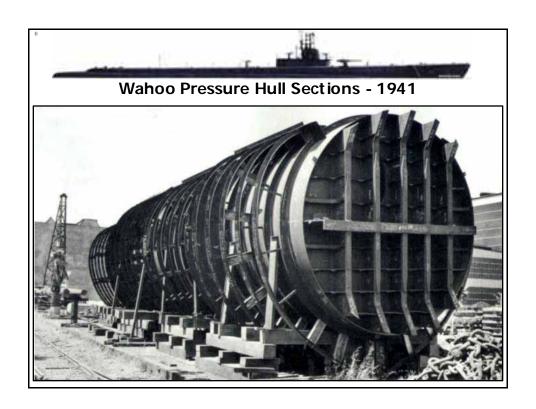
- <u>Displacement</u>: 1,526 tons surfaced/2,424 tons submerged
- Length: 311 feet, beam 27 feet, draft 15 feet
- Speed: 20+ knots surfaced, 8+ knots submerged
- Crew: 6 officers/54 men (10 officers/70-71 men wartime)
- Maximum operating depth: 300 feet
- Fuel capacity: 94,400 gals (116,000 gals wartime)
- Patrol endurance: 75 days
- Cruising range: 11,000 miles @ 10 knots (surfaced)
- Submerged endurance: 48 hours @ 2 knots
- Armament: 10 torpedo tubes (6 fwd/4 aft), 21 torpedoes
- Gun armament: 3-inch (later 4-inch), 20mm, and .50 caliber
- Power plant: 4 diesel generators, 5,400 total horsepower
- Propulsion: twin shaft, electric motors, two 126-cell batteries

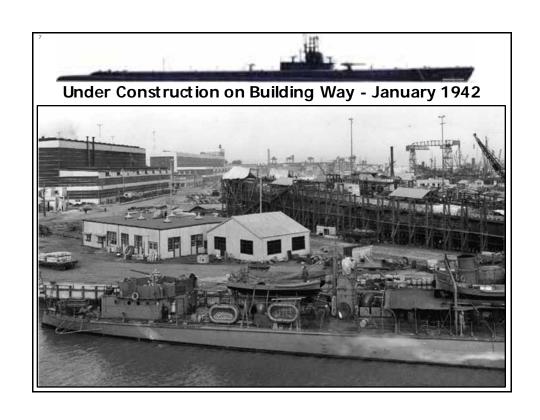




- Seven war patrols
- Credited with sinking 27 ships totaling over 125,000 tons
- Earned 6 battle stars and awarded a Presidential Unit Citation
- Commanded by CDR Dudley W. "Mush" Morton on last five patrols
- One of 52 U.S. submarines lost in WWII
- Wahoo and other U.S. submarines completed 1,560 war patrols and sank over 5.6 million tons of Japanese shipping







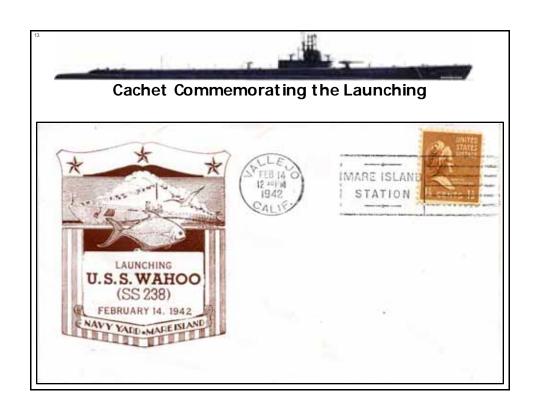








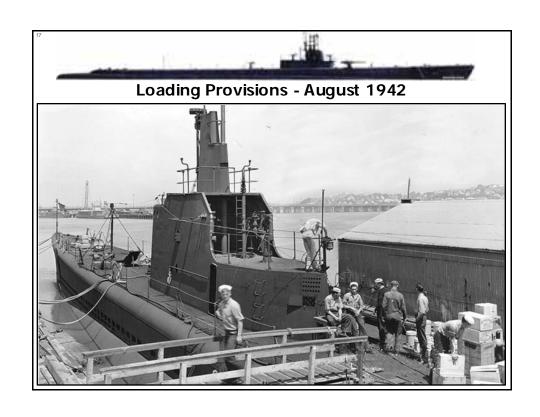


















## Mare Island Submarines

- Mare Island's primary wartime task was to maintain the ships that were fighting the war in the Pacific
- Although only 15 of 207 submarines delivered during WWII were built at Mare Island, they included 9 of the 25 top scoring submarines
- Yard workers took a genuine interest in their boats and closely followed their combat careers
- A total of 23 submarines built by Mare Island took part in WWII combat operations; seven did not return:

Pompano (SS 181) Wahoo (SS 238) Swordfish (SS 193) Tullibee (SS 284) Gudgeon (SS 211) Tang (SS 306)

Trigger (SS 237)



# First War Patrol

Departed: Pearl Harbor, 23 August 1942

• Patrol duration: 55 days

• Patrol area: Truk (Caroline Islands)

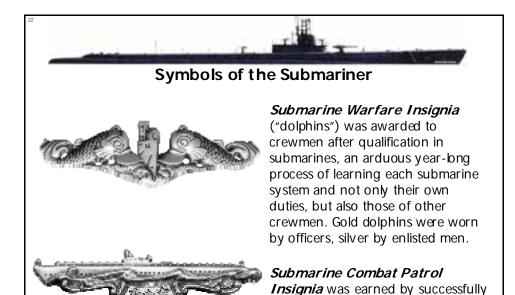
Commanding officer: LCDR Marvin Kennedy
 Ships destroyed/tonnage: 1 ship/6,441 tons

Keiyo Maru class freighter

• Arrived: Pearl Harbor, 17 October 1942

• Comments: 3-inch deck gun replaced with 4-inch; two 20mm

Oerlikon guns added



completing a submarine war patrol; gold stars indicated additional patrols, silver stars five patrols. Known to submariners as "the pin".



Although routinely enduring the hardships of submarine service, crews enjoyed the best food and rest facilities available. Demonstrating their commitment to morale, the Navy leased the entire Royal Hawaiian Hotel in Waikiki for submarine crews recuperating between patrols.







### **Second War Patrol**

- Departed: Pearl Harbor, 8 November 1942
- Patrol duration: 48 days
- <u>Patrol area</u>: Bougainville (Solomon Islands)
- Commanding officer: LCDR Marvin Kennedy
- Ships destroyed/tonnage: 2 ships/7,599 tons
  - Syoei Maru class freighter
  - / class submarine (1-2)
- Arrived: Brisbane Australia, 26 December 1942
- Comments: Kennedy is replaced by LCDR Morton after criticism for being "overly conservative"



### Third War Patrol

- <u>Departed</u>: Brisbane Australia, 16 January 1943
- Patrol duration: 23 days
- Patrol area: New Guinea/Truk (Solomon Sea)
- Commanding officer: LCDR Mush Morton
- Ships destroyed/tonnage: 5 ships/31,890 tons
  - Asashio class destroyer (Harusame)
  - Dakar Maru class freighter
  - Arizona Maru class freighter
  - Manzyu Maru class tanker
  - Seiwa Maru class transport (Buyo Maru)
- Arrived: Pearl Harbor, 7 February 1943
- Comments: Wahoo is awarded a Presidential Unit Citation for aggressively attacking the enemy. Third 20mm gun is added.



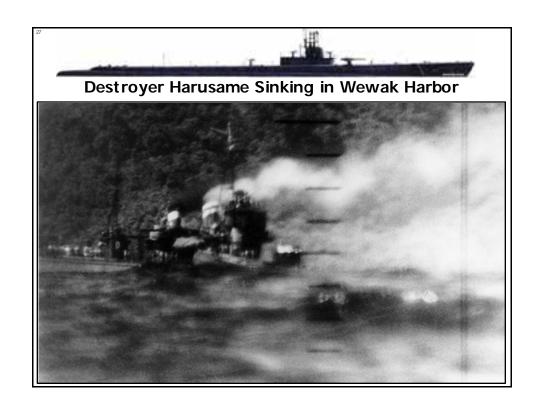


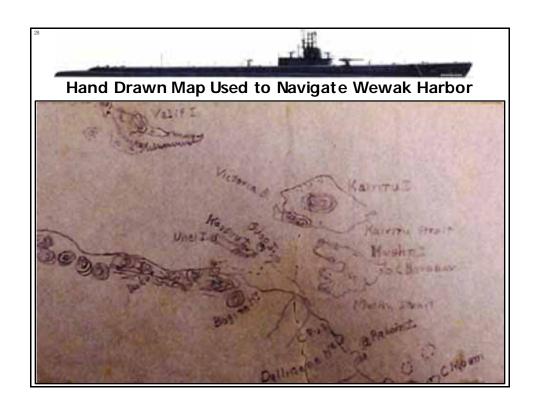
Asashio class destroyer

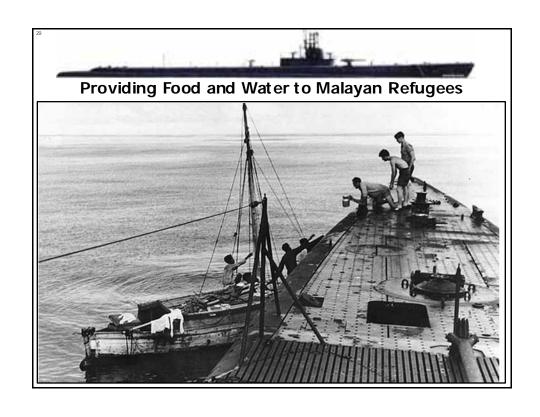


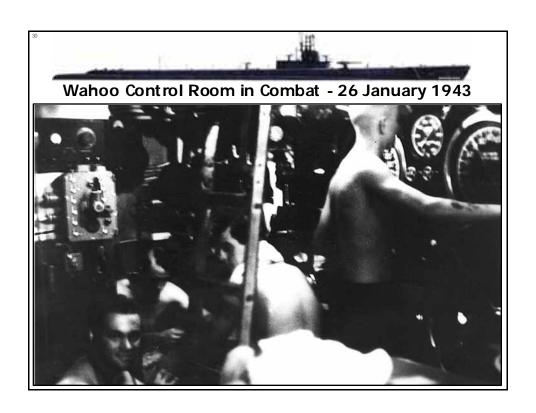
Harusame after being torpedoed by Wahoo

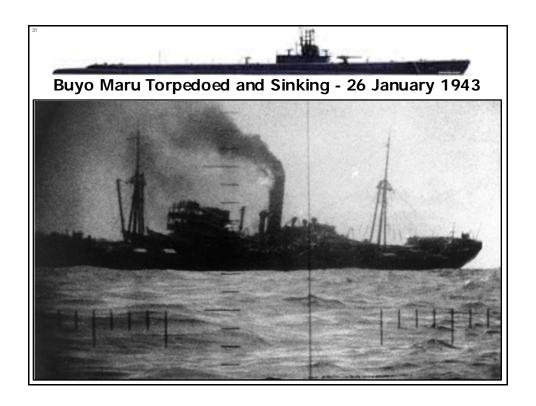
In his first action as captain, Morton brought WAHOO deep inside the shallow harbor at Wewak, New Guinea. Stalked by the destroyer Harusame, he expended 5 torpedoes which missed the accelerating target. As the destroyer bore down on Wahoo, Morton ordered the periscope raised and fired the 6th and last available bow torpedo at a range of only 800 yards. Seconds later an explosion was heard and Harusame was seen broken in two and settling by the bow.















Sinsei Maru under fire from 4-inch and 20mm guns in a similar surface gun action.

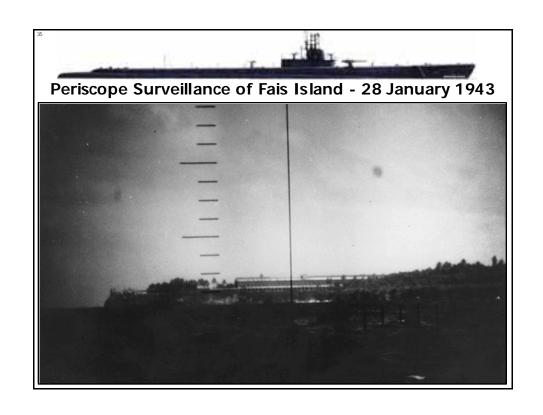
The events of 26 January 1943 remain shrouded in controversy. Following the sinking of *Buyo Maru*, Wahoo was fired on by Japanese Army survivors in small boats, life rafts, etc. Wahoo returned fire, sinking the boats and killing an estimated 200-300 men. Some considered the action unjustified; Morton reasoned that the troops would have been saved and gone on to fight and kill Allied troops in nearby New Guinea. The Navy apparently agreed, he was awarded the Navy Cross.







Mush Morton was a man who chose his words carefully. Drafting a dispatch to inform COMSUBPAC of their success in attacking a Japanese convoy, Morton sent: "In fourteen hour running gun and torpedo battle sank destroyer in Wewak, and entire convoy of one tanker, two freighters, and one transport and her boats. Torpedoes expended." The next day, after attempting a surface gun attack on another transport, Wahoo was shelled and then depth charged by a destroyer. His next message to COMSUBPAC read simply: "Another running gun battle today. Destroyer gunning, Wahoo running".







# Motivation and Pride - Wahoo Style

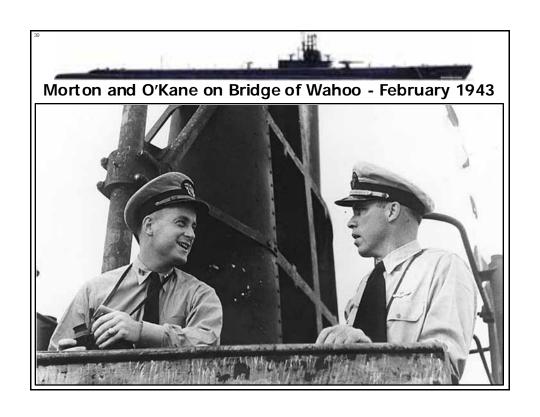


- Upon assuming command, Morton had informed his crew that Wahoo was expendable, that their mission was to sink enemy shipping, and that any requests for transfer would be approved; ...there were no takers
- A new spirit and confidence was born among the crew
- Wahoo arrived back at Pearl Harbor after the successful 3rd patrol with upraised broom signifying a "clean sweep" and a pennant inscribed with the ship's motto "Shoot the Sunza Bitches"

### The Morton/O'Kane Team



Mush Morton (right) and executive officer Dick O'Kane worked well together and developed many tactical innovations. One involved O'Kane manning the periscope during attacks (normally the CO's task) so that Morton could concentrate on the tactical situation. O'Kane went on to become one of the top scoring submarine commanders of the war in USS Tang, before being sunk by a circular run of his own torpedo. One of only nine survivors, O'Kane earned the Medal of Honor for his exploits.







## Fourth War Patrol

Departed: Pearl Harbor, 23 February 1943

Patrol duration: 42 days

Patrol area: Manchuria/Japan (East China Sea)

Commanding officer: LCDR Mush Morton

Ships destroyed/tonnage: 9 ships/41,213 tons

 Koma Maru class freighter Nanka Maru class freighter

- Seiwa Maru class freighter - Nitu Maru class freighter

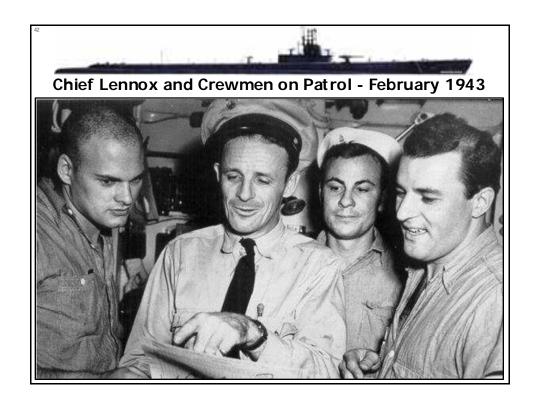
- Katyosan Maru class freighter - Syoyo Maru class tanker

- Kimisima Maru class freighter - Sinsei Maru class freighter

- Hadachi Maru class freighter

plus 1 trawler and 2 sampans (sunk by gunfire)

Arrived: Midway Island, 6 April 1943



## A Good Omen

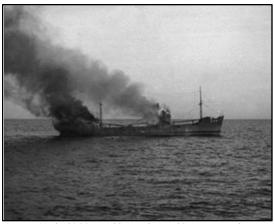


Signed by witnesses, the winning cribbage hand dealt off Shantung Promontory is now on display in the Pearl Harbor Museum.

Like many other crewmembers, Mush Morton and Dick O'Kane enjoyed the occasional game of cribbage. In a game played on 18 March 1943 while Wahoo was 10 miles north of Shantung Promontory in the Yellow Sea, Morton dealt O'Kane a "Perfect 29" hand. Within hours, two ships had been sent to the bottom by Wahoo's torpedoes. Three days later, he nearly repeated the feat with a 28 hand, dealt just prior to sinking another ship. From then on, the crew always considered a high scoring hand to be a good omen.



# ...the Sound of Gunfire in the Morning Twilight



Hadachi Maru ablaze after taking 80 rounds from Wahoo's 4-inch deck gun and 1,000 rounds from her 20mm guns.

The *Hadachi Maru* was sunk by 4-inch and 20mm gunfire on the morning of 25 March 1943 in a surface gun action. Commenting on the action in his patrol report, Morton wrote: "Anyone who has not witnessed a submarine conduct a battle surface with three 20mm and four inch gun in the morning twilight with a calm sea and in crisp clear weather, just 'ain't lived.' It was truly spectacular. "



### "Wahoo's Commandos"





Wahoo always did whatever it took to sink enemy ships, whether by torpedoes, gunfire, or other more creative measures. On 25 March 1943, Wahoo attacked a 100 ton radio-monitoring trawler with over 700 rounds of 4-inch and 20mm gunfire. Then, with seas too rough to safely board the vessel, a group of self-proclaimed "Wahoo's Commandos" led by Ensign Misch and Chief Lane hurled molotov cock tails from the bow. The volatile homemade bombs had been provided by the Marines at Midway Island during a fueling stop.

# The Flag Pole

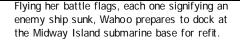




Morton's 1936 wedding photo.

Mush Morton had met and married his wife while stationed in Tsingtao, China in 1936. His wife's family had a home there overlooking the sea with a flag pole where they flew the American flag. Later, while living in New York during the war, they often received letters from Mush. Although he normally wasn't able to share details of his patrols because of strict censorship restrictions, he found an opportunity on the 4th patrol. In a letter to the family, he wrote simply: "I saw your flag pole today." They were stunned to silence when they read it because they knew instantly where he was, thousands of miles away in the Yellow Sea.



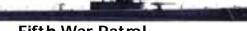








Although quite a come-down compared to Pearl Harbor's recreational amenities, Wahoo was still the center of attention at Midway. Here her wardroom lines up for an official Navy photo opportunity on 15 April 1943. From left: ENS John Campbell, LT Roger Paine, ENS George Misch, LT Richard O'Kane, LT Chandler Jackson, LTJG John Griggs, and LT Richie Henderson. Notably absent is LCDR Morton who had flown to Pearl Harbor to report directly to COMSUBPAC.



### Fifth War Patrol

- Departed: Midway Island, 25 April 1943
- Patrol duration: 26 days
- Patrol area: Kurile Islands (Japan)
- Commanding officer: LCDR Mush Morton
- Ships destroyed/tonnage: 3 ships/24,698 tons
  - Yuki Maru class freighter
  - Huzisan Maru class tanker
  - Hawaii Maru class freighter
- Arrived: Pearl Harbor, 21 May 1943
- Comments: Following the patrol, Wahoo is ordered to Mare Island Navy Yard for major overhaul





- Battle flags flying, Wahoo arrived at Mare Island Navy Yard on 29 May 1943
- Overhaul work was followed by intensive postrepair trials and training
- Wahoo departed Mare Island for the last time on 21 July 1943, bound for Pearl Harbor



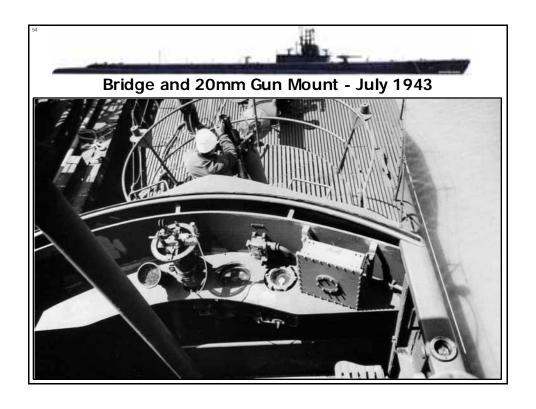


Arriving at Mare Island, LCDR Morton chats with Admiral Freidell, Commander of Mare Island Navy Yard, after a reunion with his father and wife Harriet.

Executive officer Dick O'Kane, accompanied by his wife Ernestine and children, is









### **Mare Island Overhauls**

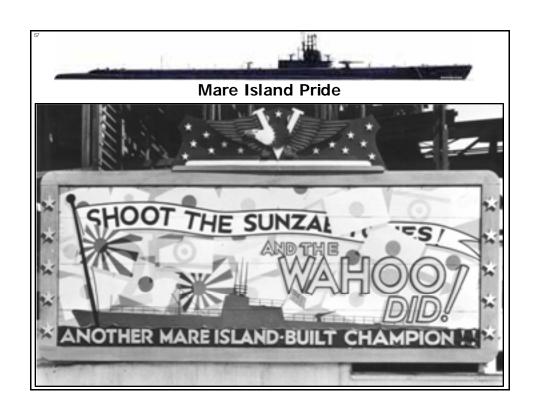


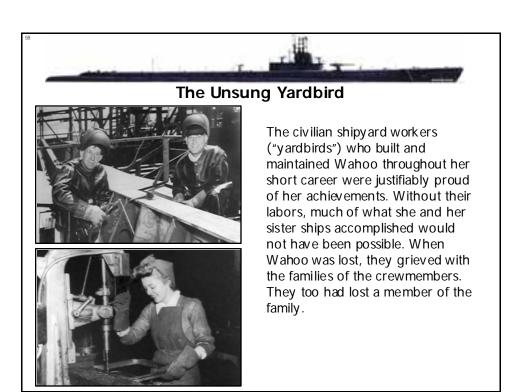
- Overhauls and major repairs of Pacific Fleet submarines were performed at Mare Island
- Submarines normally received an overhaul after each 5 patrols
- Overhauls at Mare Island were usually completed within 85 days
- Up to 16 submarines were under repair by the Shipyard at any given time during the war
- Repairs would typically include engine overhaul, maintenance of seawater valves, battery cell replacement, hull preservation, and other equipment alterations based on war experience.





Mush Morton and his wife Harriet pose with actor Cary Grant, star of the motion picture "Destination Tokyo". The plot of the film, which depicted submarine operations against Japan, included scenes based on some of Morton's own experiences. This made him eminently qualified to act as technical advisor for the film while Wahoo was undergoing overhaul at Mare Island.









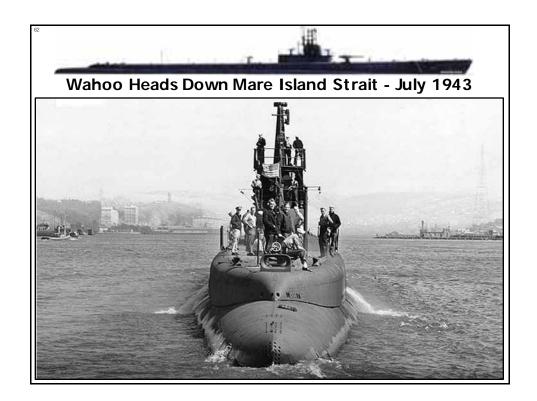


An unidentified Mare Island worker performs the duties of starboard lookout aboard Wahoo during a July 1943 sea trial.

The duties of a yardbird were not always restricted to the shipyard, and were not always safe. Shipyard workers routinely rode submarines on sea trials after construction or major overhaul, sharing duties and hazards with the crew. Like the crews they sailed with, they sometimes didn't return. Two of the 26 men lost aboard USS Squalus in May 1939 and 17 of the 129 lost aboard USS Thresher in April 1963 were yardbirds. Both ships were lost on sea trial after shipyard repairs.



Information entered on this page from Wahoo's deck log was recorded on the day she left Mare Island for the last time: Wednesday July 21, 1943. Time of departure was 10:00 am on a calm and clear summer day. Initial course recorded was 140 degrees (down Mare Island Strait). Subsequent course changes traced her route through San Pablo Bay and San Francisco Bay. The final course, recorded as she passed through the Golden Gate and out to sea, was 225 degrees; back to Pearl Harbor and the war.









In return for the technical assistance of Morton and other crewmembers, film star Errol Flynn threw a lavish party for the crew at the end of Wahoo's overhaul. They reciprocated by allowing him to ride as they departed for Pearl Harbor. Flynn and his press agent are seen in this photo with Roger Paine, Wahoo's new executive officer who replaced Dick O'Kane during overhaul. Flynn returned to shore on the pilot boat.



### Sixth War Patrol

Departed: Pearl Harbor, 2 August 1943

Patrol duration: 27 days

Patrol area: Empire (Sea of Japan)

Commanding officer: LCDR Mush Morton

Ships destroyed/tonnage: 0 ships/96 tons (sampans)

Wahoo made nine torpedo attacks on six separate targets; the torpedoes hit but none detonated due to contact exploder malfunction

Three sampans were sunk by gunfire

Arrived: Pearl Harbor, 29 August 1943

Comments: Morton, like other commanders of the time, was frustrated by the continuing torpedo failures. He was nearly replaced after venting his frustration up the chain of command.





- The steam powered MK 14 torpedo was the primary weapon of U.S. submarines throughout the war (although later supplemented by other types such as the battery powered MK 18)
- MK 14 torpedo problems plagued crews until corrected in late 1943
  - Depth mechanisms caused torpedoes to run deeper than set (often running under targets)
  - Magnetic exploder operation was erratic because of sensitivity to local variations in the Earth's magnetic field
  - Contact exploder design faults caused failure to detonate on direct impact with targets



ENS George Misch in the for ward torpedo room points to a kill flag next to tube #3.







LT Richie Henderson, LT Chandler Jackson, and ENS John Campbell study a letter from home in Wahoo's wardroom.

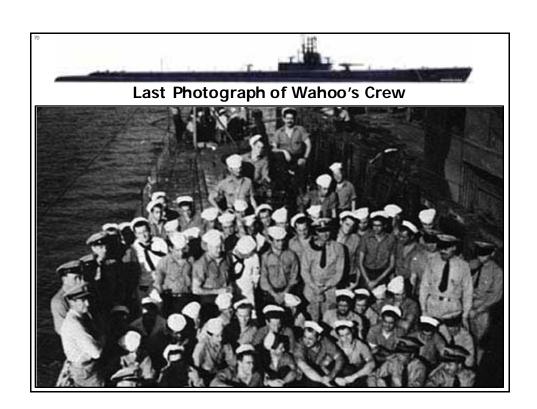
Stewards Jesus C. Manalisay and Juan O. Jayson prepare to serve another wardroom meal.





## **Seventh War Patrol**

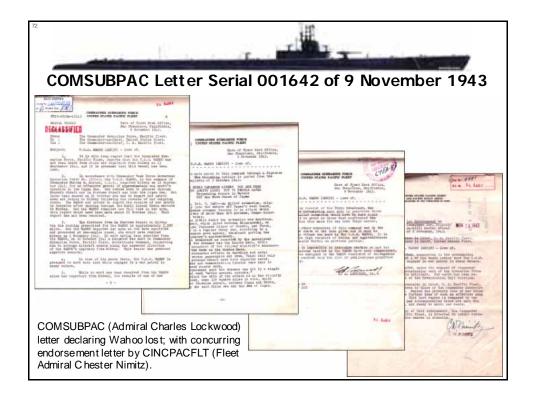
- Departed: Pearl Harbor, 9 September 1943 with a load of new MK 18 electric torpedoes
- Patrol duration: 29 days (until lost)
- Patrol area: Empire (Sea of Japan)
- Commanding officer: CDR Mush Morton
- Ships destroyed/tonnage: 4 ships/13,516 tons (postwar credit)
  - Auxiliary gunboat *Hankow Maru*
  - Army transport Konron Maru
  - Army cargo ship Kanko Maru
  - Army cargo ship *Masaki Maru #2*
- Comments: Wahoo fails to return on schedule and is declared "overdue, presumed lost" on 9 November 1943



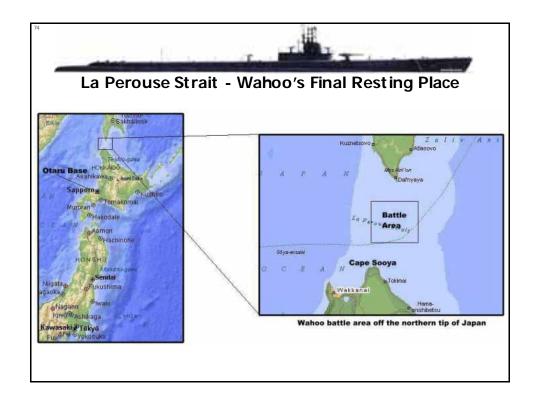


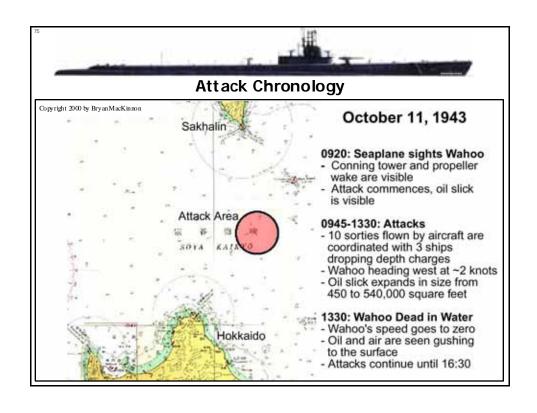
### **Overdue-Presumed Lost**

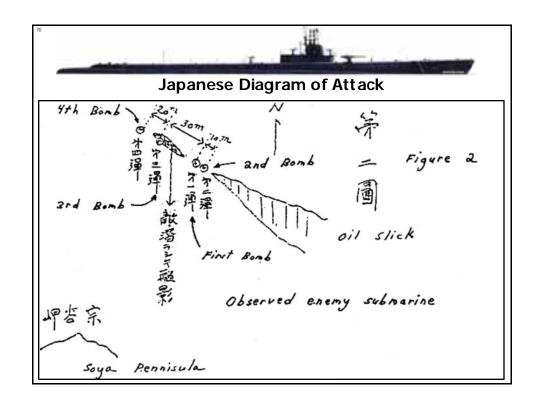
- Wahoo was declared "overdue-presumed lost" by COMSUBPAC on 9 November 1943
- Postwar analysis of Japanese records indicated a five hour combined air and sea attack on a submarine in La Perouse Strait on 11 October 1943
- Wahoo in that timeframe should have been exiting the Sea of Japan through the the same narrow, shallow waters of the Strait located between the islands of Hokkaido (Japan) and Sakhalin (Russia)
- CDR Mush Morton and 79 crewmen were lost
- Patrol was declared "...one of World War II's most daring penetrations of enemy waters..." - Time Magazine 10/18/43

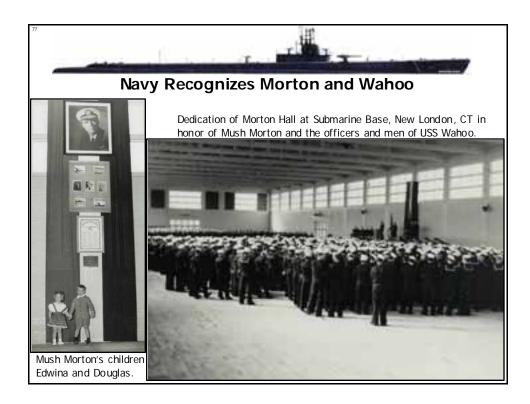


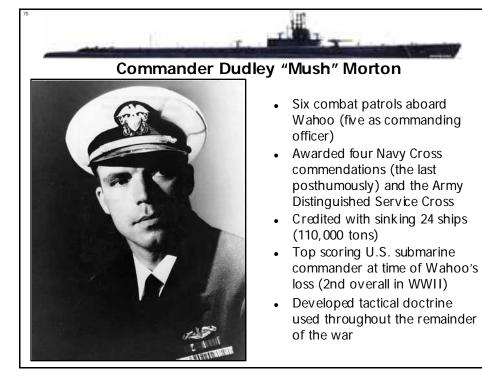


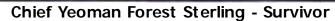














- Veteran of five combat patrols aboard Wahoo
- Sterling was unexpectedly transferred off the ship at Midway by CDR Morton during a fueling stop on Wahoo's final patrol to attend Yeoman's school
- "My spirit has been with them all these years..." he said of his former shipmates, "...I should have been with them."
- Author of the book "Wake of the Wahoo"





- The stress of combat, combined with the long hours and harsh living conditions, required a special breed of sailor
- U.S. submarine crewmembers comprised only 1.6% of Navy personnel yet accounted for 54% of Japanese ship losses
- 3,505 submariners (22%) paid the ultimate price in WWII; they are considered by their surviving comrades to be not "lost" but instead "on eternal patrol"



#### **Submarine Losses**



- 288 U.S. submarines participated in World War II combat operations
- 52 of the submarines were lost due to various causes:
  - Aircraft bombs
  - Depth charges
  - Mines
  - Operational losses
  - Grounding
  - Friendly fire
  - Faulty torpedoes
- Loss of a submarine on war patrol usually resulted in loss of the entire crew



## The Bells Left Behind



Mush Morton's grand nephew, Bryan MacKinnon, stands behind the ship's bell from Wahoo, now on display in the Submarine Museum at Pearl Harbor.

The ship's bells of submarines departing Pearl Harbor on war patrol were usually left behind to eliminate a potential noise source. Two bells still residing at Pearl Harbor share a common bond. Wahoo's bell is on display at the USS Bowfin Submarine Museum. The other is located in the Submarine Base chapel, where each Sunday Argonaut's bell tolls for one of the 52 lost submarines. Argonaut, like Wahoo, never returned home to claim her bell; she was lost with all hands near Bougainville on 10 January 1943.

# Old Farming Markin Passa

#### **Old Enemies Meet in Peace**



Mush Morton's widow Harriet Morton Bradford lays a wreath at the Wahoo Peace Memorial assisted by Mr. Uchida, a Japanese pilot who took part in the attack that sank Wahoo. To his surprise, she displayed no animosity toward the man who had helped kill her husband and his crew.



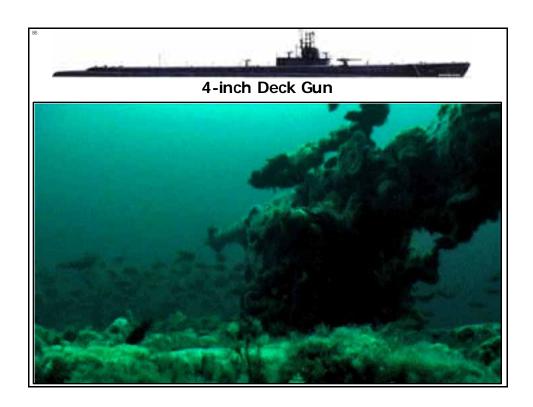
The Wahoo Peace memorial located at Wakkanai, Hokkaido, Japan was dedicated on September 9, 1995. The memorial, which stands overlooking Wahoo's final resting place in La Perouse Strait, commemorates not only her crew but also her Japanese victims.

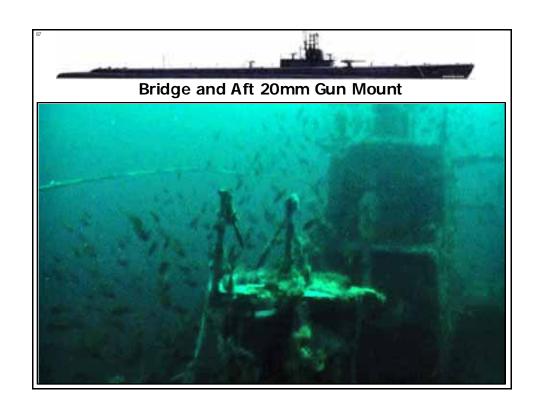


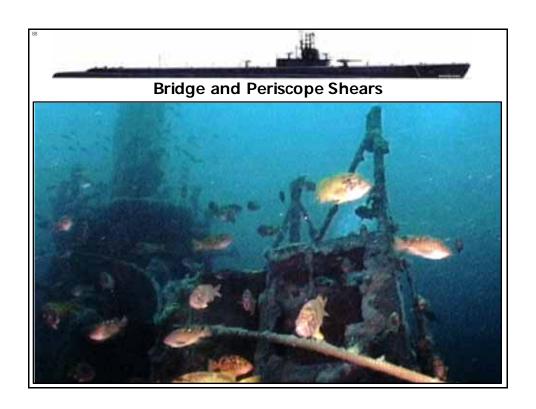
## Wahoo is Located After 63 Years

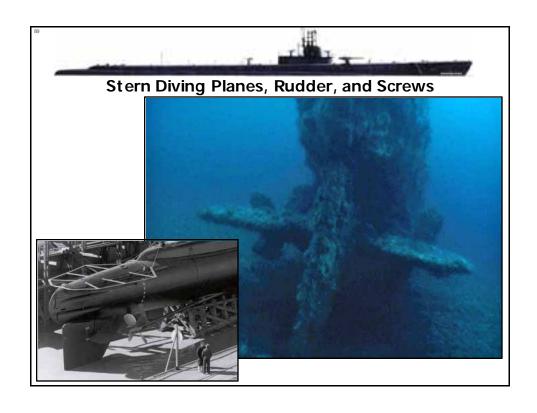
- The Wahoo Project Group, led by Brian MacKinnon, had determined the approximate location of the sinking from a review of Japanese war records and first-hand accounts of the participants
- The outline of a U.S. submarine was observed on sidescan sonar images obtained by a Russian oil survey expedition at the request of the Wahoo Project Group
- Russian commercial divers in July 2006 photographed the wreckage located in 213 feet of water
- The Navy officially declared Wahoo found on October 31, 2006 after analyzing Russian photographic evidence
- Classified as a war gravesite, under Naval tradition Wahoo is considered a fitting resting place for her lost crew



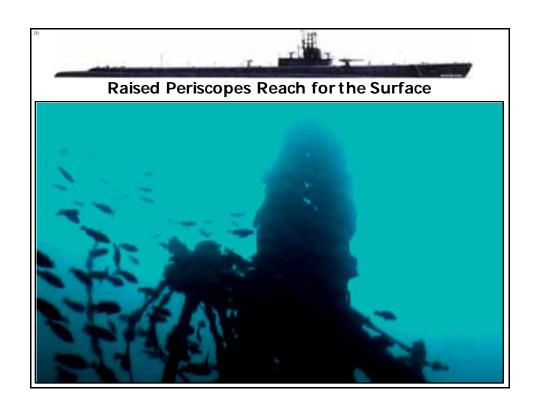


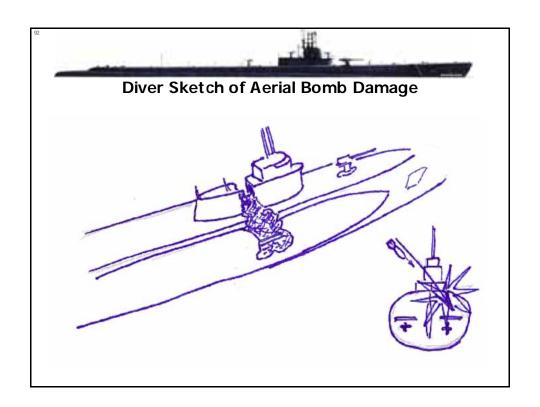
















9 July 2007 - Aboard submarine tender USS Frank Cable in La Perouse Strait, Rear Admiral McAneny, Commander of Submarine Squadron 7, lays a wreath in remembrance of the crewmen entombed aboard USS Wahoo





## Wahoo - In Memoriam

#### Crew of USS Wahoo (SS 238) Lost 11 October 1943

Anders, F. MM3
Andrews, J. S. EM1
Balley, R. E. SC3
Bair, A. I. TM3
Berg, J. C. MM3
Browning, C. E. MOMM2
Brown, D. R. LTJG
Bruce, C. L. MOMM1
Burgan, W. W. LT
Campbell, J. S. ENS
Carr, W. J. CGMA
Carter, J. E. RM2
Davison, W. E. MOMM1
Deaton, L. N. TM1
Erdey, J. S. EM3
Fielder, E. F. LTJG
Finkelstein, O. TM3 Anders, F. MM3 Fielder, E. F. LT3G Finkelstein, O. TM3 Galli, W. O. TM3 Garrent, G. C., Jr. MOMM2 Gerlacher, W. L. S2 Goss, R. P. MOMM1 Greene, H. M. LT Hand, W. R. EM2 Hartman, L. M. MM3 Hayes, D. M. EM2

Henderson, R. N. LT Holmes, W. H. EM1 House, V. A. S1 Howe, H. J. EM2 Jacobs, O. MOMM1 Jasa, R. L. MM3 Jayson, J. O. CK3 Jayson, J. O. CK3
Johnson, K. B. TM1
Keeter, D. C. CMOMMA
Kempr, W. W. GM9
Kessock, P. F1
Kirebs, P. H. S1
Kirk, E. T. S1
Lape, A. D. F1
Lindemann, C. A. S1
Logue, R. B. FC1
Lynch, W. L. F1
MacAlman, S. E. PHM1
MacGowen, T. J. MOMM1
Magyar, A. J. MM3 MagGower, T. J. MOM Magyar, A. J. MM3 Manalisay, J. C. ST3 Mandjiak, P. A. MM3 Massa, E. E. S1 Maulding, G. E. TM3 McGill, T. J. CMOMMA McGilton, H. E. TM3

McSpadden, D. J. TM1 Mills, M. L. RT1 Misch, G. A. LTJG Morton, D. W. CDR Neel, P. TM2 O'Brien, F. L. EM1 O'Neal, R. L. EM3 O'Neal, R. L. EM3
Ostrander, E. E. MM3
Phillips, P. D. SC1
Rennels, J. L. SC2
Rerino, H. S1
Seal, E. H. Jr. TM2
Simonetti, A. R. SM2
Skjonsby, V. L. LCDR
Smith, D. O. BM1
Stevens, G. V. MOMM2
Terrell, W. C. QM3
Thomas, W. S1 Thomas, W. S1 Tyler, R. O. TM3 Vidick, J. EM2 Wach, L. J. COX Waldron, W. E. RM3 Ware, N. C. CEM White, W. T. Y2 Whipp, K. L. MM2 Witting, R. L. MM3



USS SEALION (SS 195) USS S-36 (SS 141) USS S-26 (SS 131) USS SHARK (SS 174) USS PERCH (SS 176) USS S-27 (SS 132) USS GRUNION (SS 216) USS S-39 (SS 144) USS ARGONAUT (SS 166) USS AMBERJACK (SS 219) USS GRAMPUS (SS 207) USS TRITON (SS 201) USS PICKEREL (SS 177) USS GRENADIER (SS 210) USS RUNNER (SS 275) USS R-12 (SS 89) USS POMPANO (SS 181) USS GRAYLING (SS 209)

USS CISCO (SS 290) USS S-44 (SS 155) USS WAHOO (SS 238) USS DORADO (SS 248) USS CORVINA (SS 226) USS SCORPION (SS 278) USS GRAYBACK (SS 208) USS TROUT (SS 202) USS TULLIBEE (SS 284) USS HERRING (SS 233) USS GUDGEON (SS 211) USS GOLET (SS 361) USS S-28 (SS 133) USS ROBALO (SS 273) USS FLIER (SS 250) USS HARDER (SS 257) USS SEAWOLF (SS 197) USS ESCOLAR (SS 294)

USS DARTER (SS 227) USS SHARK II (SS 314) USS TANG (SS 306) USS ALBACORE (SS 218) USS GROWLER (SS 215) USS SCAMP (SS 277) USS SWORDFISH (SS 193) USS BARBEL (SS 316) USS KETE (SS 369) USS TRIGGER (SS 237) USS SNOOK (SS 279) USS LAGARTO (SS 371) USS BONEFISH (SS 223) USS BULLHEAD (SS 332) USS SCULPIN (SS 191) USS CAPELIN (SS 289)

Thirteen other U.S. submarines have been lost at sea (one in World War I, twelve in peacetime)

# The Empty Berths...

"There is a port of no return, where ships May ride at anchor for a little space And then, some starless night, the cable slips, Leaving an eddy at the mooring place... Gulls, veer no longer. Sailor, rest your oar. No tangled wreckage will be washed ashore."

- Leslie Nelson Jennings ("Lost Harbor")