



# THE BUBBLE HEAD NEWS

VOLUME 1, ISSUE 1—1ST QUARTER— 2008

JANUARY 2008

## HISTORY OF THE ENIGMA MACHINE

The Enigma machine as shown far right, was a device used extensively by the German Navy, including surface ships and more importantly, the U-Boats. It had a standard QWERTY keyboard, the same keyboard configuration we use on today's PC and laptop keyboards. In 1915, two Dutch Naval officers had first invented a machine to encrypt messages. In 1918, a German businessman named Arthur Scherbius, patented the Enigma. It was originally used commercially by banks and other businesses.

The basic secret to the Enigma Machine is that it enciphers a message with a basic substitution cipher. For example, every letter that is depressed on the keyboard, is replaced by another letter from the alphabet—for example, A for E, B for Z, and so on. The Enigma Machine expands on this concept in two interesting ways; first, it accomplishes this substitution by a series of electrical connections that are hidden from the user. Second, these connections are placed in a set of rotors which can rotate, changing the elec-



trical connections and thus the substitution cipher. This rotation is what made the Enigma code so difficult to crack—it meant that every letter in a message

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## REMEMBERING THE USS WAHOO

One of the most famous submarines of World War II was the USS Wahoo, SS-238, a Gato-class submarine. Her keel was laid June 28, 1941 at the Mare Island Navy Yard, Vallejo, California. She was launched on February 14, 1942 sponsored by Mrs.

William C. Barker, Jr., and commissioned on May 15, 1942 with Lieutenant Commander Marvin G. "Pinky" Kennedy in command.

Following fitting out and initial training along the California coast which took her as far south as San

Diego, California, Wahoo departed Mare Island on August 12, for Hawaii. She arrived at Pearl Harbor on August 18, and underwent exercise training until 21 August.

Wahoo, under the com-

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## ENIGMA—CONTINUED

was enciphered using a different substitution cipher, because the rotors would rotate after every letter was entered. In 1924, the Enigma machine's place in history was secured when the German armed forces began using a specially adapted military version to encrypt their communications. In 1935, Nazi Germany bought the rights to the Enigma cipher machine

and the sale was restricted to the Army only.

There were several instances during World War II, that helped the Allies defeat the German U-Boat was in the Atlantic. Two of the most famous incidents for recovering Enigma cipher machines from German vessels was from *U-110* on May 9, 1941, and the capture of *U-505* on June 4, 1944.

However, many more incidents would help rid the Atlantic of the U-Boats that had tried to strangle the British by attacking and sinking their ships, filled with life sustaining supplies. Two of the extra wheels supplied to German Naval Enigma operators, in addition to the five wheels used by all telegraphists in the German armed forces,

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**3 Rotor Version of the Enigma Cipher Machine**

Courtesy of [www.w1tp.com/enigma](http://www.w1tp.com/enigma)

## WAHOO—CONTINUED

mand of Lieutenant Commander Marvin Kennedy were average, but when Dudley "Mush" Morton took over command, things changed dramatically. Gone were the "safe" tactics of staying submerged most of the patrol and sending back reports of enemy convoys. With Morton's leadership, the *Wahoo* aggressively went after Japanese shipping with a venge-

ance. Morton was quoted by saying "*We'll go wherever the Japs are, and do whatever it takes to sink them.*"

Some of Morton's aggressive tactics included a successful down the throat attack against a Japanese Destroyer, surface-running attacks and he formed a rubber-boat landing and assault team known as *Wahoo's Commandos*. With

all these new tactics, the *Wahoo* was leading in number of ships sunk. One of the first spectacular achievements of *Wahoo* was the sinking of a 4-ship convoy in one day.

*Wahoo* performed seven patrols and on the seventh patrol, she was sunk by Japanese aircraft in La Pérouse Strait, October 11, 1943. 80 men

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**"WE'LL GO WHEREVER THE JAPS ARE, AND DO WHATEVER IT TAKES TO SINK THEM."**

- DUDLEY "MUSH" MORTON

## SUBMARINE TRIVIA

**Did you know that two American submarines were credited for sinking two German U-Boats during World War II?**

On March 21, 1943, what U.S. Submarine is credited

with sinking *U-163*, a type IXC U-Boat.

On April 23, 1945, what U.S. Submarine is credited with sinking *U-183*, a type IXC/40 U-Boat.

**Where are they now?**

1. What submarine is in Muskogee, Oklahoma?

2. What submarine is in Cleveland, Ohio?
3. What submarine is in Mobile, Alabama?
4. What submarine is in Muskegon, Michigan?
5. What submarine is in Galveston, Texas?

*(Continued on page 3)*



**Test your submarine knowledge!**

## ENIGMA—CONTINUED

were captured from *U-33* on February 12, 1940. On April 26, 1940, the German trawler *April Polares*, was captured off the coast of Norway. The British retrieved Enigma operator logs, some Enigma operator logs, some Enigma settings and the explanation specifying how the Naval Enigma system worked. This capture enabled some of the very first Enigma

messages to be read. On March 4, 1941, a German trawler, the *March Krebs* was captured off the Lofoten Islands in Norway. Captured from this vessel was a Naval Enigma settings book. On May 7, 1941, the German weather ship *May Munchen* was captured. Captured from this vessel were more Naval Enigma settings. On May 9, 1941, the *U-110* was

captured. The entire Enigma machine is taken off the U-Boat, along with Enigma settings and some code books. The *U-110* was towed for a while, in hopes of capturing the submarine intact, however, it sank during the towed attempt. On June 4, 1941, the German supply ship *June Gedania* was captured by the British. Enigma

*(Continued on page 4)*



**4 Rotor Cipher Machine**

## WAHOO—CONTINUED

went down with Wahoo.

Since 1995, the Wahoo Project Group (an international team of Americans, Australians, Japanese, and Russians and led by a relative of Commander Morton) has been searching for her based on the available evidence. Japanese Vice Admiral Kazuo Ueda working with the Wahoo Project Group examined the

historical record and correctly predicted the location of Wahoo. In 2005, electronic surveys in the region yielded what turned out to be of a U.S. Gato class submarine in the Strait; in July, 2006, the Russian team "Iskra" investigated the site which contributed further evidence of location of the Wahoo. On October 31, 2006 the United States Navy confirmed that

the images provided by the "Iskra" team are of Wahoo, the wreckage lying in about 213 feet (65 meters) of water in the La Perouse (Soya) Strait between the Japanese island of Hokkaido and the Russian island of Sakhalin."

*Facts and information taken from Wahoo, by Richard H. O'Kane and Wikipedia.*

"ON OCTOBER 31, 2006, THE U.S. NAVY CONFIRMED THAT THE IMAGES...ARE OF WAHOO"

## TRIVIA—CONTINUED

- |   |  |   |
|---|--|---|
| 6. What submarine is in Manitowoc, Wisconsin?   | sey?   | Carolina?   |
| 7. What submarine is in Buffalo, New York?      | 10. What submarine is in Fall River, Massachusetts?  | 13. What submarine is in San Francisco, California?   |
| 8. What submarine is in Honolulu, Hawaii?       | 11. What submarine is in Philadelphia, Pennsylvania? | 14. What submarine is in North Little Rock, Arkansas? |
| 9. What submarine is in Hackensack, New Jersey? | 12. What submarine is in Mount Pleasant, South       |   |

**Answers in next issue!**



**Do you know the answers?**

## VOLUNTEER BASE—MIDDLE TENNESSEE—"WE'LL BE THERE!"

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### WE'RE ON THE WEB AT:

[HTTP://WWW.SUBHISTORY.ORG/  
VOL\\_INDEX.HTM](http://www.subhistory.org/vol_index.htm)

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ANY COMMENTS REGARDING THE  
NEWSLETTER, PLEASE EMAIL PAUL  
SNIEGON AT: [TNDOGS@COMCAST.NET](mailto:TNDOGS@COMCAST.NET)

Welcome to the Tennessee Volunteer Base website. We meet four times a year, generally in the middle Tennessee area. Base dues are \$10 per year. Dues are used primarily to support the base (to cover mailing and meeting costs) and to support the submarine community and our fellow submariners.

We welcome anybody who wears dolphins of any era to join the Volunteer Base. If you can not afford to join the Volunteer Base, USSVI, or SubVets of WWII, our base has a booster club our members have contributed to to help pay those dues. If you live in Tennessee or any surrounding state and are not a member of a base, please consider joining our group.

### VOLUNTEER BASE MEETING INFORMATION:

[Our next meeting of the Volunteer Base will be on  
Saturday, March 15, 2008.](#)



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## ENIGMA—CONTINUED

documents were retrieved from this vessel. On June 28, 1941, the German weather ship *June Lauenburg* was captured. Enigma documents were retrieved from this vessel. June 27, 1941, *U-570* is captured intact, and towed to Thorlakshafn, Iceland where she was salvaged. Enigma documents were retrieved off this vessel. On October 30, 1942, two British sailors drowned after boarding *U-559*. Some codebooks and a short weather report codebook are captured before it sank. On February 17, 1941, *U-205* is captured. Before sinking, Enigma codebooks were re-

trieved. June 4, 1944, *U-505* is captured intact off the West African coast. A full Enigma machine is captured, along with codebooks and other Enigma documents. *U-505* is now displayed at the Museum of Science and Industry, in Chicago, Illinois.

The talents of everyone involved with the breaking of the Enigma code, enabled the Allies to virtually destroy the German U-Boat fleet and save many lives on Allied merchant vessels travelling the Atlantic and other waters during World War II.

Out of 820 U-Boats that participated in the Battle of the

Atlantic, during World War II, 781 were destroyed in action. Out of 40,000 men, more than 30,000 are on eternal patrol.



The plugboard (Steckerbrett) was positioned at the front of the machine, below the keys. When in use, there were up to 13 connections. In the above photograph, two pairs of letters have been swapped (S-O and J-A).

*Facts and information taken from Enigma, The Battle for the Code, by Hugh Sebag-Montefiore and U-Boat Commander, by Peter Cremer.*