Year 2024, Vol. 21, Nº 1, pp. 127 - 137. Complementary Edition
DOI: https://doi.org/10.35628/resup.v16i2.141

The Western Approaches Tactical Unit (WATU) and the Development of Convoys Protection Tactics

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Abstract: This article analyzes the development of doctrine and tactics for the defense of logistical supply convoys during the Battle of the Atlantic, presenting the development and implementation of the coordinated attack by German submarines and the establishment of the Western Approach Tactical Unit (WATU), as doctrine development and analysis unit for the defense of convoys.

Keywords: Doctrine, Tactics, Western Approach Tactical Unit (WATU), Submarines, Convoys.

1. INTRODUCTION

During World War I, the emergence of submarines resulted in the birth of new tactics and the beginning of submarine warfare.

This article introduces the events of the Battle of the Atlantic, where the German U-Boat Force operated for the first time to cut off the supply lines of England, and how England developed the defense mechanisms against it.

2. ATTACK TACTICS OF THE GERMAN U-BOAT FORCE

According to Admiral Karl Doenitz[1], Commander of the German U-boat Force in World War II, in the spring of 1917 (during World War I), Captain Bauer asked for permission to conduct a joint multiple U-boat operation against a convoy in the west of Ireland, which was rejected, probably because it was considered too theoretical and difficult to carry out. The implementation of the convoy system during World War I resulted in the failing of German U-boat Force attacks. Therefore, in 1935, Admiral Doenitz decided to develop the concept of group tactics, based on the concept of tactical operation, for which it was necessary first to locate the enemy, communicate the information, and then attack the convoy using more submarines.

IMAGE 1
Admiral Karl Doenitz

Source: By Bundesarchiv, Bild 146-1976-127-06A / CC-BY-SA 3.0, CC BY-SA 3.0 de, https://commons.wikimedia.org/w/index.php?curid=93420001

The tactic of U-boats operations was tested during large maneuvers carried out by the German Armed Forces in the autumn of 1937. The mission was to locate a concentration of enemy ships and a convoy in the Baltic Sea to attack. The exercise proved to be successful, and after further exercises in the North Sea, all the details were developed for inclusion in the Submarine Commander's Manual. England, which is an island, depended on merchant traffic to receive matériel and raw material from the United States to sustain war efforts.

[1] Ten years and Twenty days. The Memoirs of Karl Doenitz

Due to the fall of France in June 1940[2] during World War II, the approach routes from the West were abandoned as convoy routes, thus all convoys for the remainder of the war had to go north, bordering Ireland. The difficulty in maintaining this new route was determined by the lack of naval means and radar equipment on ships and aircraft necessary to cover this area.

The German U-boat Command realized this and responded effectively. U-boat operations against the convoys were characterized by group coordinated attacks to maximize the sinking of merchant ships, managing to sink a total of 282 ships on the new route between July and October 1940, representing a total of 1,485,795,000 tons of cargo.

Additionally, the absence of bases to support the convoy route forced the creation of additional bases in 1941, which were completed and operationalized in February 1942.

Likewise, at critical moments only one or two destroyers accompanied each convoy, and it was not until 1941 that the Royal Navy began to use cross-border protection for transatlantic convoys. The British forgot that convoys on their own played a crucial role in blocking the U-boat offensive in 1917. The Royal Navy made a series of assumptions in the 1930s by giving great confidence to the Asdic, which was a primitive active sonar that was believed to be the technological solution to any future threat, and it believed that the submarine threat could be met with technology alone. If the situation continued without changes, Admiral Donitz estimated that Germany could win the war by sinking 700 tons of cargo every month.

3. THE WESTERN APPROACHES TACTICAL UNIT (WATU)[3]

The Western Approaches Command was the largest operational command of the Royal Navy during World War II, and it was responsible for the safety of British traffic in the Western Approach area.

In January 1942, the creation of the Western Approaches Tactical Unit (WATU) marked the beginning of the operation of a system to collect, transfer, and integrate knowledge to test standards, objectives, and policies that would facilitate the adoption of tactics to counter German U-boats attacks on convoys, effectively teaching the doctrine and disseminating it throughout the fleet. Gilbert Roberts was the officer designated to command this new unit.

[2] Wargaming the Atlantic War: Captain Gilbert Roberts and the Wrens of the Western Approaches' Tactical Unit

[3] https://En.Wikipedia.Org/Wiki/Western_Approaches_Tactical_Unit

IMAGE 2
Operating room at Derby House.

Source: Public Domain, https://commons.wikimedia.org/w/index.php?curid=481274

He initially focused on gathering all kinds of knowledge and experiences, interviewing Commanders of the destroyers protecting the convoys. He would ask them: When you are protecting a convoy at night and a ship is torpedoed, what do you do? Everyone would reply: "Cover the battle stations and increase speed", but the real answer would be: "Nothing".

Because of this, response methods and instructions in case of submarine contact or attack were developed. By giving out the order "butter cap" over radio, all destroyers would turn outwards and increase their speed to maximum power firing flares for 20 minutes, after which they would return to

IMAGE 3
Commander Gilbert Roberts

Source: By Royal Navy - Imperial War Museum, Public Domain, https://commons.wikimedia.org/w/index.php?curid=81070393

their station. This procedure succeeded in the sinking of two U-boats during the protection of convoy HG76.

These tactics were important but still insufficient, which is why the initial problem was divided into two sub-questions:

a. How far do U-boats fire and how do they approach the convoy? They assumed the German U-boats fired from outside the destroyers' range and considered the rage of their torpedoes to be 5,400 yards (3.6 miles).
b. b. How far from the convoy are destroyers operating? Destroyers operated up to 5,000 yards (3.3 miles) outside the convoy.

Gilbert Roberts reached a new conclusion: For a successful shot, the firing distance should be half the maximum range. This led to two more sub-questions:

a. Are German U-boats attacking within the convoys?
b. How do they approach the convoy?

He then identified four possibilities:

a. Submarines race ahead on surface
b. Submarines dive and surface in the middle of the convoy
c. Submarines race from the convoy side
d. Submarines infiltrate the convoy from stern

The most probable option among these possibilities was that the submarine could arrive submerged at 12 knots and, compared to the convoy's speed of 7 knots, it could infiltrate from behind at a speed of 5 knots and, from there, it could fire torpedoes from the surface and from inside the convoy.

To develop the tactics, they summoned six female volunteers from the Royal Navy, who helped develop wargaming that were played on the headquarters floor. The floor was covered with brown linoleum and a grid was painted in the center. The grid was the game board known as the "tactical table". It was spaced out by 10 inches, representing a nautical mile. Cloth perforated curtains surrounded the grid and the players controlling the destroyers stayed behind them. They could only see the boards through those perforations; players controlling the submarines could see the whole game board.

Submarines and ships were represented by small wooden models on the board, the movement lines of the submarines were drawn in green chalk, a color that contrasted little with the brown color of the floor, and the players behind the curtains could hardly see the movements of the escort ships, which were drawn in white chalk that could easily be seen by the players behind the curtains.

IMAGE 4
A naval war game conducted at the Western Approaches Tactical Unit (WATU) in Liverpool during World War II. The woman in the foreground is Jean Laidlaw. 1942

Source: By Lt. C. H. Parnall – https://www.iwm.org.uk/collections/item/object/205159247, Public Domain, https://commons.wikimedia.org/w/index.php?curid=81035376

Each player was given two minutes per turn to make decisions and give out orders, which were passed to the girls in pieces of paper, preventing anyone from hearing those orders. Facilitators used these orders to calculate their results, drawing the ships' trajectories with chalk.

Captain Gilbert Roberts provided the facilitators with the characteristics of all ships, such as the range of German torpedoes, the speed of the ships, the turning speed, their sonar capabilities, night visibility, etc.

The next step was to develop tactics to counter the attack of U-boats infiltrated from the rear of the convoy, creating the Raspberry Doctrine. The first doctrine formulated by WATU and disseminated to the fleet.

As a result of this system, the group began to analyze and develop the maneuvers necessary to face U-boat attacks on convoys.

IMAGE 5
Birds and wolves game

Source: By National Museums Liverpool - A Game of Birds and Wolves by Simon Parkin, originally sourced from National Museums Liverpool., Public Domain, https://commons.wikimedia.org/w/index.php?curid=84667859

The doctrines formulated and disseminated by WATU were first applied against the Germans in 1941. The SC-104 convoy is a good example of the impact of the new doctrines. The convoy set sail from New York on 3 October 1942, and it was under attack from 11 October onwards. Between 10:15 on October 13 and 2:30 a.m. on October 14, six merchant ships were torpedoed and once the escorts returned, they executed the "Perry" maneuver. At 03:18, HMS-FAME made contact by sonar within four miles of the convoy, carrying out an attack using five

IMAGE 6
Birds and wolves game

Source:By Lt C H Parnall - Imperial War Museum (https://www.iwm.org.uk/collections/item/object/205159252), Public Domain, https://commons.wikimedia.org/w/index.php?curid=84678124

depth charges and causing the U-boat to surface, escaping the area. At 14:07, two miles ahead of the fourth column, it successfully detected the U-boat and fired at 2000 yards, bringing it to the surface, while the U-353 was rammed and sunk.

On 19 November 1942, Admiral Max Kennedy Horton[4] assumed command of the Western Approaches Command. Horton's leadership was vital in the ultimate defeat of the U-boat threat due to his experience as a submariner and former Commander of the Submarine Force.

The Admiral used the increasing number of escorts available to organize "support groups" that were used to reinforce the convoys that were attacked. He visited WATU and participated in wargaming, playing as the Commander of a German U-boat due to his experience; while Janet Hay Okell[5] , one of the young WRENS, played as Commander of the Escort Group. She defeated the Admiral five times using the "Beta Search" method, which was included in the Fleet Orders.

[4] https://EN.WIKIPEDIA.ORG/WIKI/MAX HORTON
[5] https://EN.WIKIPEDIA.ORG/WIKI/JANET OKELL

IMAGE 7
Admiral Max Horton

Source: By Smith Wales (Capt), Royal Navy official photographer - This photograph A 20789 comes from the collections of the Imperial War Museums (collection no. 4700-01), Public Domain, https://commons.wikimedia.org/w/index.php?curid=8711681

IMAGE 8
Janet Okell

Fuente: By Royal Navy - A Game of Birds and Wolves by Simon Parkin., Public Domain, https://commons.wikimedia.org/w/index.php?curid=84678953

The work carried out by WATU allowed the development of doctrines and tactics for searching and attacking U-boats in different situations, such as:

- **Pineapple:** It was designed as an alternative in case more than one submarine attacked the convoy.
- **Banana:** It was designed in case a single submarine attacked the convoy. As soon as a merchant ship was torpedoed, the protective escort fired white lights and radioed the banana signal, starting scanning with sonar and radar at the highest possible speed.
- **Beta Search Plan:** It was developed in case a destroyer wanted to locate a U-boat that had been seen chasing the convoy.
- **Betha Search:** The escort turned towards the submarine, but not directly.
- **Step Aside:** Maneuver in which a ship can attack a submarine with acoustic torpedoes, especially the T5 Zaunkoning.

4. TEACHING THE DOCTRINE[6]

Between 1942 and 1945, WATU taught a course on the developed doctrine, facilitating the implementation of one of the most important Principles of War: Unity of Effort. Within a week, it managed to complete 132 courses, each one with an interval of one day. Student officers ranged from 1 Admiral, 6 Senior Officers and 479 Lieutenants. In addition, 118 students from the Royal Air Force (RAF) participated in the course, achieving in the end a total of 3,585 graduated student officers from different courses.

5. CONCLUSIONS

The creation of the Western Approaches Tactical Unit (WATU) with personnel selected for their skills and capabilities, including young volunteers from the Royal Navy, enabled the establishment of an effective and efficient institution, which allowed not only the development of procedures, but the dissemination, teaching, and training necessary to achieve rapid internalization of doctrines for the effective protection of maritime supply lines. The creativity and tactical skill achieved within the unit allowed to establish analysis processes of information received from experienced officers and intelligence, which allowed to determine how the German U-boat Force attacked convoys. The use of wargaming with scale models and traces on the floor was enough to achieve the perfect representation of units' maneuvers, allowing the realistic and useful assessment of different situations for the design of doctrines.

[6] The Royal Navy and Organizational Learning the Western Approaches Tactical Unit and the Battle of the Atlantic, Naval War College Review Volume 72, Number 4 Autumn 2019.

References

Ten Years and Twenty Days. The Memoires of Karl Doenitz. Illustrated edition (19 Abril 2012). England Editorial Frontline Books.

Wargaming the Atlantic War: Captain Gilbert Roberts and the Wrens of the Western Approaches Tactical Unit

The Royal Navy and Organizational Learning the Western Approaches Tactical Unit and the Battle of the Atlantic, Naval War College Review, Volume 72, Number 4, Autumn 2019

Https://en.wikipedia.org/wiki/western_approaches_tactical_unit

Https://en.wikipedia.org/wiki/max_horton

Https://en.wikipedia.org/wiki/janet_okell