

TORPEDO A DEADLY WEAPON IN MODERN NAVAL WARFARE

Description of the Terrible Little Weapon of Destruction
in General Use in the Various Fleets—Cost £600
Each and Can Destroy Ships
Worth Millions

MOST people have some idea of what a torpedo is for and what it looks like. They know that it is shaped like a cigar, that it is charged with a high explosive, and that when it strikes the object at which it is aimed it explodes. They know that this cigar shaped object at a few yards in length and less than two feet in diameter, is capable of destroying the biggest battleship, and sending to the bottom of the sea a thousand men and a fighting machine which has cost two and a half millions sterling.

These things are known to everybody, but as to the construction of these weapons of naval warfare, the wonderful mechanism which sends them driving through the water at tremendous speed on their errand of destruction, the ingenious contrivance upon their course, turning neither to the left nor the right, the ordinary person has only the haziest notion.

Charged With Gun Cotton

The length of a torpedo is from sixteen to eighteen feet, and those used in the British navy are of three sizes—14in., 18in., and 21in., in diameter. It has a very blunt head, and at the tail are the twin propellers which drive it, while just in front of these are horizontal and vertical fins fitted with rudder, which, actuated by the internal mechanism, keep the weapon straight and at a proper depth when running.

Let us take a torpedo, however, and go through its various compartments in proper order.

First comes the head, which in war time contains the explosive charge of gun cotton, built up in sections to fit inside. This gun-cotton explodes on impact by means of an appliance fitted in the nose of the torpedo, while a safety device prevents the head being exploded until the weapon has travelled a certain distance after leaving the torpedo tube.

In peace time what is called a "collision head" is utilized, and this, of course, contains no explosive, and merely crumples up on hitting a vessel. What is known as "Holmes light" (after the name of the inventor) is contained in the collision head so when, in practice the torpedo comes to the end of its run, the action of the water on the preparation of calcium in the Holmes light will create a large volume of smoke and flame, which will enable the torpedo to disclose its whereabouts.

Torpedoes each cost £600 to £800, and it would not do for such expensive weapons to be lost every time they were fired in peace times.

Powerful Engines

The next compartment to the head, as you will see in the diagram, is the "air chamber." This is a cylinder about one-third of an inch thick bored out of an ingot of the finest quality high tensile steel.

It will stand a pressure of some 2,250lb. to the square inch, and the air is pumped in by means of air compressing engines, and finds its way through to the engines on certain valves being opened.

The third compartment is the balance chamber. Inside of this is contained the mechanism which actuates the horizontal rudders at the tail, and so keeps the torpedo at its correct depth, which is accurately set before the weapon is fired.

Behind the balance chamber is the engine room, containing the air engines which drive the torpedo through the water, and also various delicate mechanism for adjusting the range, etc. The engines themselves are enormously powerful for their size and can drive the weapon along at 35 knots or more.

The Gyroscope

The "buoyancy chamber" comes next. This compartment contains the gyroscope, which works on exactly the same principle as the gyroscopic toys which will spin at any angle, and consists of a brass fly-wheel that is started spinning when the torpedo is fired.

The fly-wheel of the gyroscope will always spin in the same plane, and consequently if the torpedo alters its course to the left or right, the gyroscope wheel remains steady, and by means of connecting rods works the vertical rudders to bring the weapon back to its true course. A torpedo gyroscope is a very delicate instrument, and costs some £50.

The buoyancy chamber, however, as its name implies, fulfils another purpose, for it gives the necessary buoyancy to enable the torpedo to float after it has been run for practice. In war time, however, a torpedo floating on the surface would be dangerous alike to friend and foe, so if it is fired and misses its mark, this buoyancy chamber is so contrived that it is automatically flooded and the weapon sinks to the bottom.

The Tail

The last compartment is the "tail." This contains the gearing for conveying the motion of the engines to the two propellers astern. One propeller revolves in the same direction as the hands of a watch, and the other in the opposite way, the idea of this being that each counter-balances the other as regards its tendency to cause the whole torpedo to turn to right or left.

A Speed of 43 Knots

The latest 18-inch torpedo has a speed of 35 knots for about 1,000 yards, but even this is not great enough for use for destroyers which can steam at 36 knots.

The weapon supplied to all the latest battleships, cruisers and torpedo-boat destroyers, therefore, is 21 inches in diameter, and has a speed of 43 knots for a distance of 1,000 yards, and 28 knots or so for 4,000. The effective range, however, is 7,000 yards, or roughly three and a half miles, and the explosive charge contains 3,000lbs. of gun-cotton—one of the most powerful explosives known.

The interior of the torpedo may well be imagined, as a maze of complicated machinery, for the weapon has to be fitted with appliances which will ensure its running at a certain depth, maintaining a straight course, and travelling at a known speed for a certain distance.

The officers and men of the Navy

NOTICE

Attention is called to that part of the DEER ACT which provides that NO MORE THAN THREE CARIBOU MAY BE KILLED OR TAKEN IN ONE SEASON BY ANY ONE RESIDENT.

GOWER RABBITS,
Secretary, Game & Inland Fisheries Board.
Oct. 6, 31.

Recruits Required FOR THE Newfoundland Royal Naval Reserve!

Recruits are required for the Newfoundland Royal Naval Reserve. Suitable young men from 18 to 25 years of age wishing to enrol should apply to the nearest Magistrate or Customs Official for a free pass to join H. M. S. "Calypso." Only Seamen and Fishermen are eligible for entry.

A. MacDERMOTT,
Lieutenant-Commander.
Oct. 6, 31

Was In "Pathfinder" When She Was Lost

Survivor of Warship Tells Tale of a Wonderful Escape

A Hull man on the ill-fated Pathfinder, describing the blowing up of the warship, says:

"All the ship's company were in the fore part having tea. I saw a flash, and the ship seemed to lift right out of water. Down went the mast and forward funnel and the forward part of the ship, and all the men there must have been blown to atoms. I bobbed down for a few seconds for fear of being hit by the debris, which was blown sky high.

"I then scrambled to the quarter-deck and heard the captain shout, 'To the boats,' but there were only two, and they were smashed. The other boats, and practically all the wood-work, had been left on shore. We fired a gun as a signal of distress, and by this time the ship was practically covered with water. It was every man for himself, and I jumped overboard and swam hard to put as much space between myself and the ship as I could.

"I turned round when about fifty yards away and saw her after end sticking upright 100 feet in the air. She gradually heeled over and sank. I was afraid the after end of the ship might fall on me. I was swept round and round like a cork, but managed to grab a lifebuoy which floated past me. I must have been in the water an hour before being rescued."

who are responsible for these deadly weapons of destruction have, therefore, to be specially qualified for their work, and undergo courses in the torpedo school ship at Portsmouth, H.M.S. Vernon. All big ships carry a torpedo lieutenant, and he is in sole charge of the torpedo armaments.

How They Are Fired

In large vessels, such as the battleships and cruisers, torpedoes are fired from submerged or under water tubes; by means of compressed air; but in small craft, such as torpedo-boats, destroyers, scouts and third-class cruisers, they are discharged from a tube on deck by means of a small powder charge which is just sufficient to throw the weapon clear of the ship's side.

Even in the short space of time torpedoes have been in existence, they have achieved very great results in several naval engagements and wars, and the Japanese torpedo craft during the Russo-Japanese war were able to sink and disable several ships through their use. They are now even more effective weapons, owing to their increased range, speed and destructive power.

Protection Against Torpedoes

All large vessels in our Navy are supplied with a great number of anti-torpedo guns for use in driving off hostile torpedo craft, but as there are circumstances under which a torpedo boat or destroyer might be able to slip in unobserved, all our large battleships and first class cruisers are fitted with torpedo nets.

These nets are of steel wire, and when not in use are kept rolled up on a shelf running round the ship. When it is required to place them in position, they are swung out on a number of steel booms and form a species of curtain extending from the water to about twenty or twenty-five feet below it.

These nets, however, are by no means infallible, and the best means of protection against torpedo attack is undoubtedly a very heavy gun-fire which will sink the attacking craft before she gets within effective range.

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