In naval terminology, a **destroyer** is a fast and maneuverable warship of long-endurance intended to escort larger vessels in a fleet, convoy or battle group and defend them against smaller, powerful, short-range attackers. They were originally developed in the late 19th century as a defense against torpedo boats, and by the time of the Russo-Japanese War in 1904, these *torpedo boat destroyers* (TBD) were "large, swift, and powerfully armed torpedo boats designed to destroy other torpedo boats."[1] Although the term *destroyer* had been used interchangeably with the terms "TBD" and "torpedo boat destroyer" by navies since 1892, the term *torpedo boat destroyer* had been generally shortened to simply *"destroyer"* by nearly all navies by the First World War.[2]

Prior to World War II, destroyers were light vessels with little endurance for unattended ocean operations; typically a number of destroyers and a single destroyer tender operated together. After the war, the advent of the guided missile allowed destroyers to take on the surface combatant roles previously filled by battleships and cruisers. This resulted in larger and more powerful destroyers more capable of independent operation.

At the beginning of the 21st century, destroyers are the heaviest surface combatant ships in general use, with only three nations (the United States, Russia, and Peru) operating the heavier class cruisers and none operating battleships[3] or true battlecruisers.[4] Modern destroyers, also known as guided missile destroyers, are equivalent in tonnage but vastly superior in firepower to cruisers of the World War II era, capable of carrying nuclear missiles. Guided missile destroyers such as the *Arleigh Burke*-class class are actually larger and more heavily armed than most previous ships classified as guided missile cruisers, due to their massive size at 510 feet (160 m) long, displacement (9200 tons) and armament of over 90 missiles.[5]

ORIGINS

The emergence and development of the destroyer was related to the invention of the self-propelled torpedo in the 1860s. A navy now had the potential to destroy a superior enemy battle fleet using steam launches to launch torpedoes. Fast boats armed with torpedoes were built and called torpedo boats. The first seagoing vessel *designed* to fire the self-propelled Whitehead torpedo was HMS *Lightning*. It was armed with self-propelled Whitehead torpedoes and had two drop collars to launch torpedoes; these were replaced in 1879 by a single torpedo tube in the bow. By the 1880s, these had evolved into small ships of 50–100 tons, fast enough to evade enemy picket boats.

At first, the danger to a battle fleet was considered only to exist when at anchor, but as faster and longer-range torpedoes were developed, the threat extended to cruising at sea. In response to this new threat, more heavily gunned picket boats called "catchers" were built which were used to escort the battle fleet at sea. They needed the same seaworthiness and endurance, and as they necessarily became larger, they became officially designated "torpedo boat destroyers", and by the First World War were largely known as "destroyers" in English. The anti-torpedo boat origin of this type of ship is retained in its name in other languages, including French (*contre-torpilleur*), Italian (*cacciatorpediniere*), Portuguese (*contratorpedeiro*), Polish (*kontrtorpedowiec*), Czech (*torpédoborec*), Greek (*antitorpiliko*,*αντιτορπιλικό*), and Dutch (*torpedobootjager*).[6]
Once destroyers became more than just catchers guarding an anchorage, it was realized that they were also ideal to take over the role of torpedo boats themselves, so they were fitted with torpedo tubes as well as guns. At that time, and even into World War I, the only function of destroyers was to protect their own battle fleet from enemy torpedo attacks and to make such attacks on the battleships of the enemy. The task of escorting merchant convoys was still in the future.

EARLY DESIGNS

An important development came with the construction of HMS *Swift* in 1884.[7] This was a large torpedo boat with six 47 mm quick-firing guns and three torpedo tubes. While still not fast enough to engage torpedo boats reliably, the ship at least had the armament to deal with them.
Another forerunner of the torpedo boat destroyer, was the Japanese *torpedo boat*[8] *Kotaka* (*Falcon*), built in 1885.[9] Designed to Japanese specifications and ordered from the London Yarrow shipyards in 1885, she was transported in parts to Japan, where she was assembled and launched in 1887. The 165-foot (50 m) long vessel was armed with four 1-pounder (37 mm) quick-firing guns and six torpedo tubes, reached 19 knots (35 km/h), and at 203 tons, was the largest torpedo boat built to date. In her trials in 1889, *Kotaka* demonstrated that she could exceed the role of coastal defense, and was capable of accompanying larger warships on the high seas. The Yarrow shipyards, builder of the parts for the *Kotaka*, "considered Japan to have effectively invented the destroyer".[10]

TORPEDO GUNBOAT

The first vessel design for the explicit purpose of hunting and destroying

torpedo boats, was the torpedo gunboat. Essentially very small cruisers, torpedo gunboats were equipped with torpedo tubes and an adequate gun armament, intended for hunting down smaller enemy boats. By the end of the 1890s torpedo gunboats were made obsolete by their more successful contemporaries, the torpedo boat destroyers, which were much faster.

The first example of this was HMS *Rattlesnake*, designed by Nathaniel Barnaby in 1885, and commissioned in response to the Russian War scare.[11] The gunboat was armed with torpedoes and designed for hunting and destroying smaller torpedo boats. Exactly 200 feet (61 m) long and 23 feet (7.0 m) in beam, she displaced 550 tons. Built of steel, *Rattlesnake* was un-armoured with the exception of a ¾-inch protective deck. She was armed with a single 4-inch/25-pounder breech-loading gun, six 3-pounder QF guns and four 14-inch (360 mm) torpedo tubes, arranged with two fixed tubes at the bow and a set of torpedo dropping carriages on either side. Four torpedo reloads were carried.[11]

A number of torpedo gunboat classes followed, including the *Grasshopper* class, the *Sharpshooter* class, the *Alarm* class and the *Dryad* class - all built for the Royal Navy during the 1880s and the 1890s. Fernando Villaamil, second officer of the Ministry of the Navy of Spain, designed his own torpedo gunboat to combat the threat from the torpedo boat.[12] He asked several British shipyards to submit proposals capable of fulfilling these specifications. In 1885 the Spanish Navy chose the design submitted by the shipyard of James and George Thomson of Clydebank, near the Yarrow shipyards. The *Destructor* was laid down at the end of the year, launched in 1886, and commissioned in 1887.

She displaced 348 tons, and was equipped with triple-expansion engines generating 3,784 horsepower (2,822 kW), for a maximum speed of 22.6 knots (41.9 km/h),[13] which made her one of the faster ships in the world by 1888.[14] She was armed with one 90 mm (3.5 in) Spanish-designed Hontoria breech-loading gun,[15] four 57 mm (2.2 in) (6-pdr) Nordenfeldt guns, two 37 mm (1.5 in) (3-pdr) Hotchkiss cannons and two 15-inch (38 cm) Schwartzkopff torpedo tubes.[13] The ship carried three torpedoes per tube.[15] She was manned by a crew of 60.[13]

In terms of gunnery, speed and dimensions, the specialised design to chase torpedo boats and her high seas capabilities, *Destructor* is an important precursor to the torpedo-boat destroyer.[16]

The torpedo gunboat in practice failed in their primary objective, as they were not fast enough to keep up with torpedo boats. They were phased out with the introduction of the first destroyers in the 1890s.

Development of the modern destroyer

The first ships to bear the formal designation "boat destroyer" (TBD) were the *Daring* class of two ships and *Havock* class of two ships of the Royal Navy.
Early torpedo gunboat designs lacked the range and speed to keep up with the fleet they were supposed to protect. In 1892, the Third Sea Lord, Rear Admiral Jackie Fisher ordered the development of a new type of ships equipped with the then novel water-tube boilers and quick-firing small calibre guns. Six ships to the specifications circulated by the Admiralty were ordered initially, comprising three different designs each produced by a different shipbuilder: HMS *Daring* and HMS *Decoy* from John I. Thornycroft & Company, HMS *Havock* and HMS *Hornet* from Yarrows, and HMS *Ferret* and HMS *Lynx* from Laird, Son & Company.[17]
These boats all featured a turtleback (i.e. rounded) forecastle that was characteristic of early British TBDs. HMS *Daring* and HMS *Decoy* were both built by Thornycroft, displaced 260 tons (287.8 tons full load) and were 185 feet in length. They were armed with one 12-pounder gun and three 6-pounder guns, with one fixed 18-in torpedo tube in the bow plus two more torpedo tubes on a revolving mount abaft the two funnels. Later the bow torpedo tube was removed and two more 6-pounder guns added instead. They produced 4,200 hp from a pair of Thornycroft water-tube boilers, giving them a top speed of 27 knots, giving the range and speed to travel effectively with a battle fleet. In common with subsequent early Thornycroft boats, they had sloping sterns and double rudders.[18]
The French navy, an extensive user of boats, built its first boat destroyer in 1899, with the *Durandal*-class 'torpilleur d'escadre'. The United States commissioned its first boat destroyer, USS *Bainbridge*, Destroyer No. 1, in 1902 and by 1906 there were 16 destroyers in service with the US Navy.[19]

SUBSEQUENT IMPROVEMENTS