

Secret

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# GERMAN NAVY

(Destroyers and Torpedo Boats)

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MARCH, 1917

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Reprint of British Admiralty Publication

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NAVY DEPARTMENT  
OFFICE OF NAVAL INTELLIGENCE

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GERMAN NAVY.

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NAVY DEPARTMENT,  
OFFICE OF NAVAL INTELLIGENCE,  
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*Captain, U. S. N., Director of Naval Intelligence.*

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Part III  
Section 4.  
March, 1917.

C.B. 1182.

**GERMAN NAVY.**

PART III.

SECTION 4.

DESTROYERS AND TORPEDO BOATS.

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Captain U. S. N. Dore  
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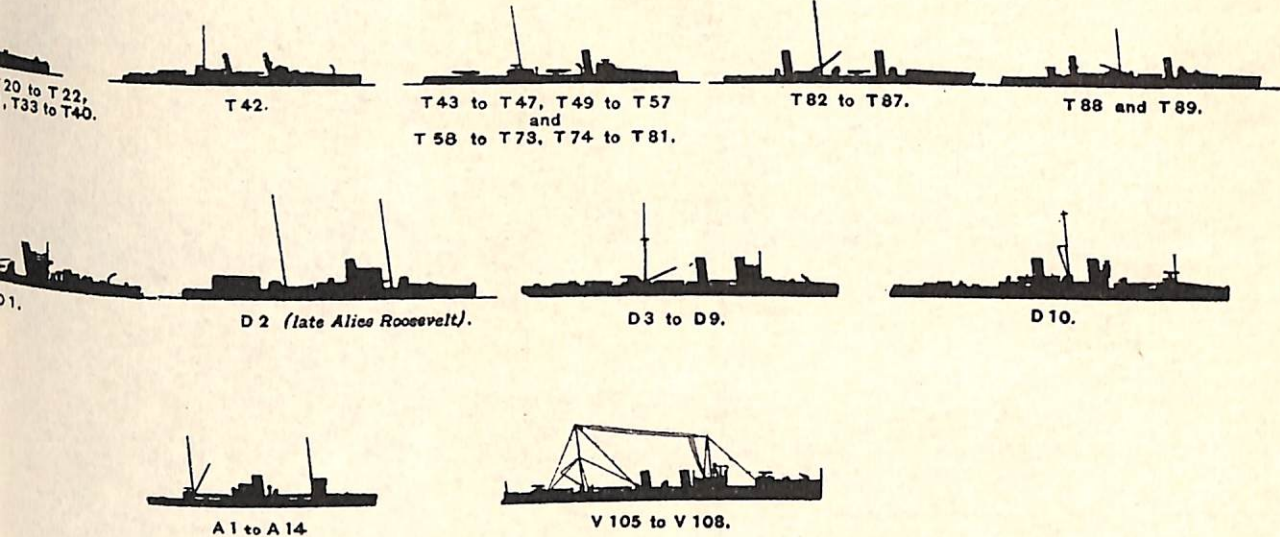
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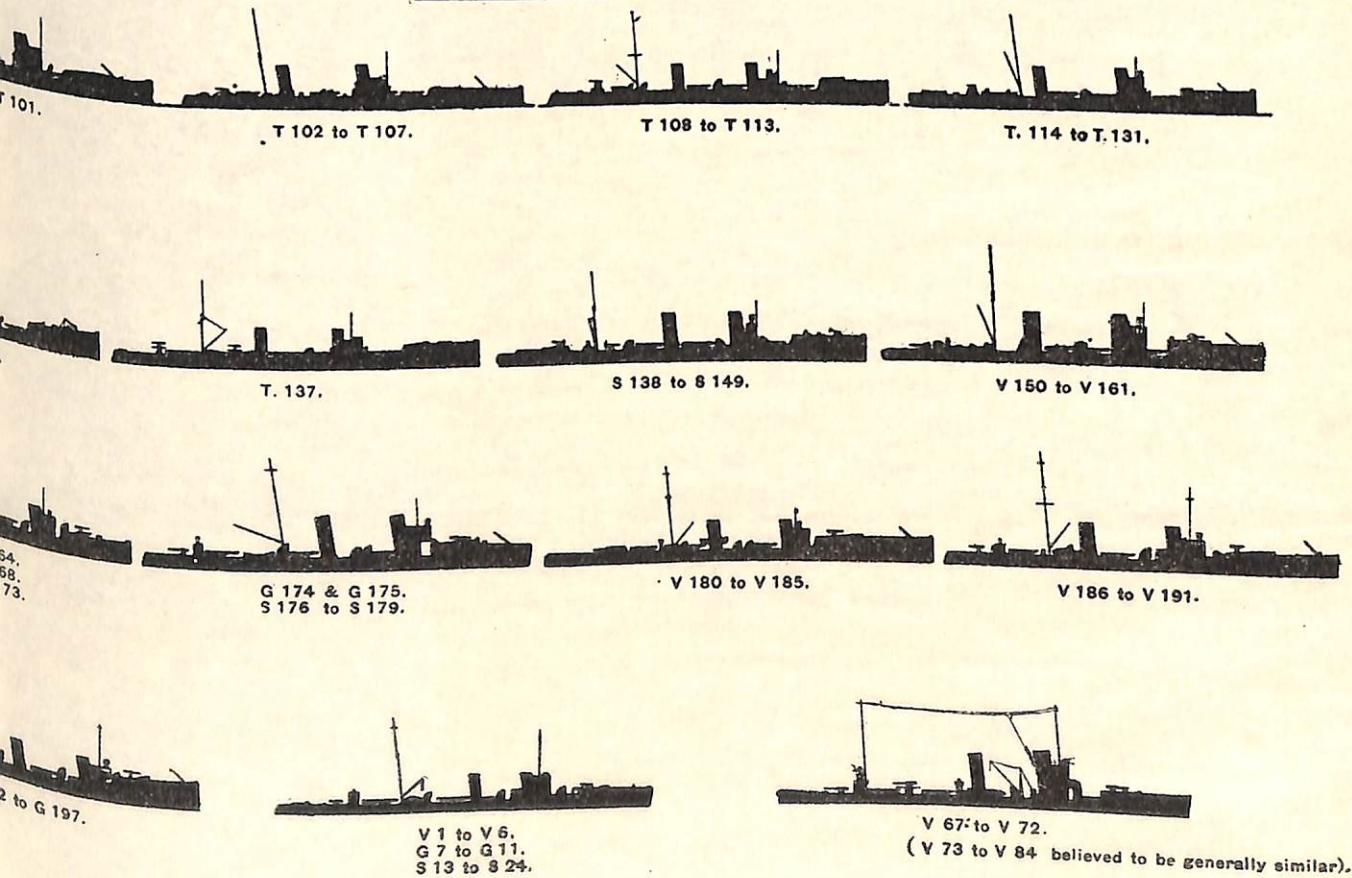
## TORPEDO BOATS AND DESTROYERS.

Scale 1" = 125ft.

### TORPEDO BOATS.



### DESTROYERS.



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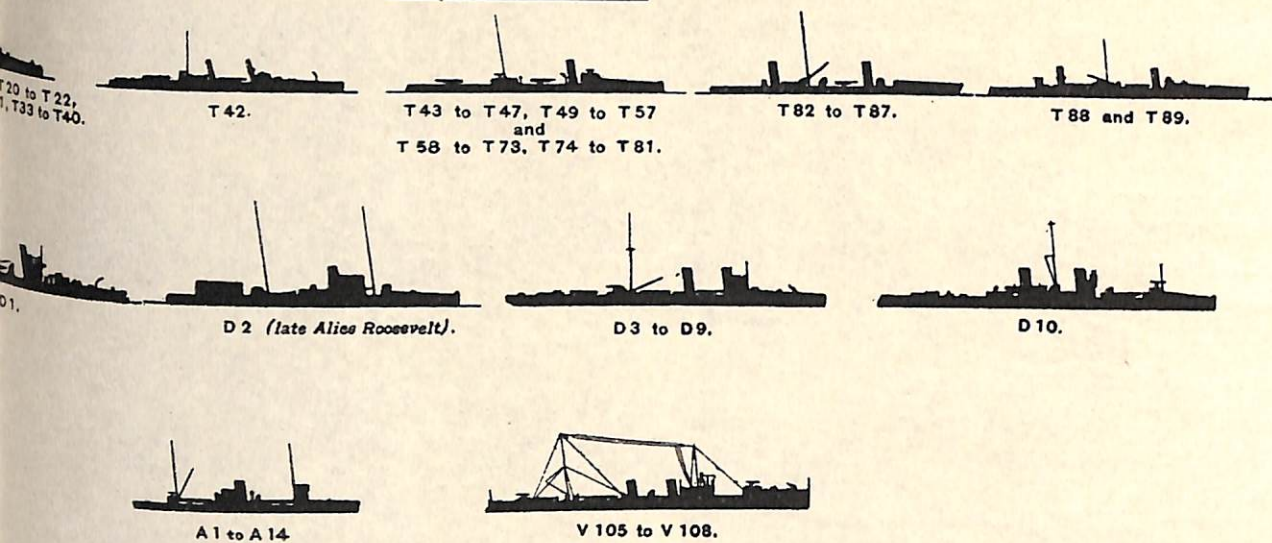
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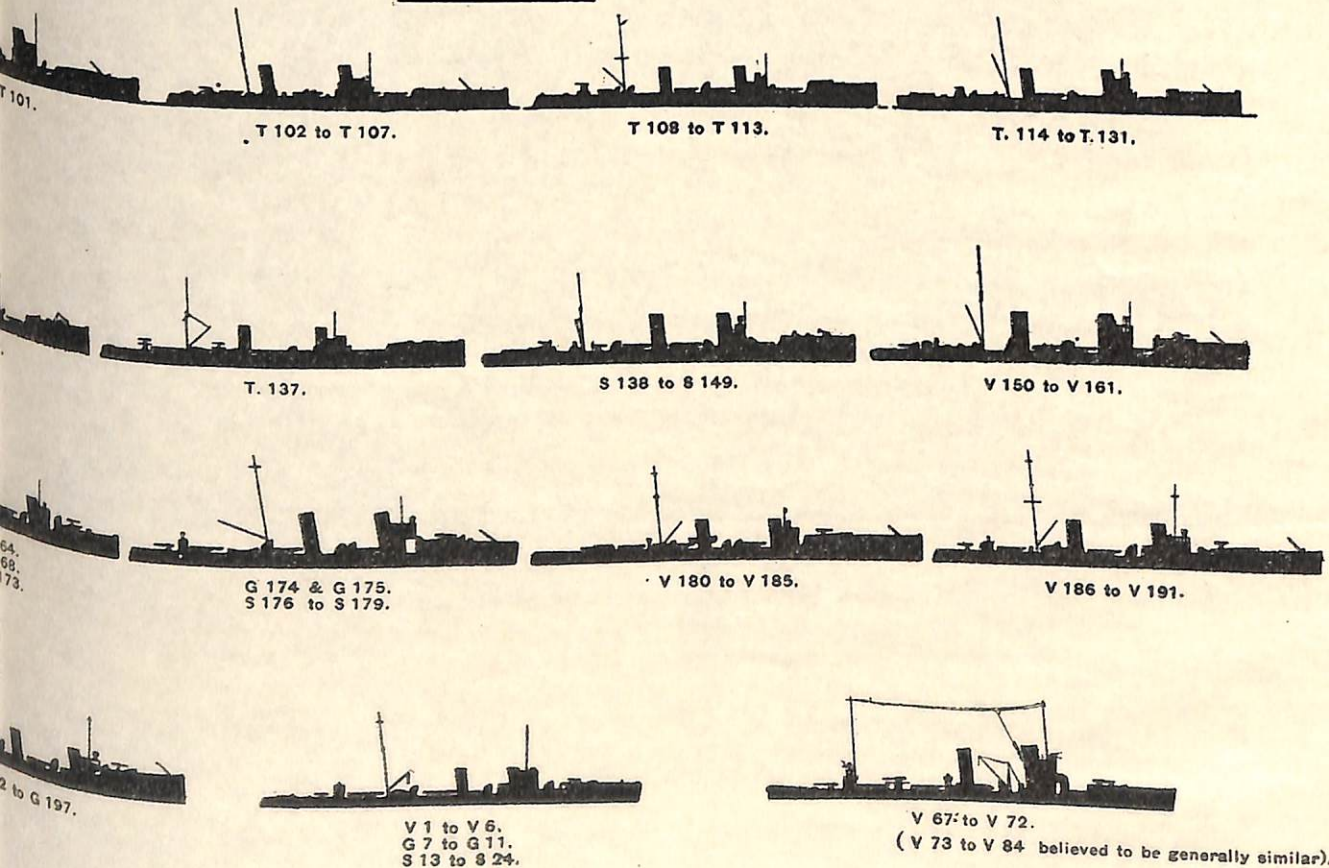
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### TORPEDO BOATS.



### DESTROYERS.



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## DESTROYERS AND TORPEDO BOATS.

Part III.  
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Destroyers  
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### General Notes.

**Armament.**—Up to the outbreak of war all German torpedo craft were designed as torpedo-boats proper and not as destroyers, and hence carried a strong torpedo armament with a relatively weak gun armament. During the war, however, a considerably heavier gun armament has been introduced. Prior to the war, two 22-pr. (8.8 cm.) L/30 guns formed the standard armament. In the boats completed towards the end of 1914 the number of 22-prs. was increased to three. In the course of 1915 a new 4.1-in. (10.5 cm.) L/50 semi-automatic gun was introduced, and during 1916 boats appeared armed with three 4.1-in. The latter appears now to have been adopted as the standard armament, and the earlier boats are to be re-armed as guns become available. A few specially large 3-funnel boats carry four 4.1-in. guns. No gun shields are fitted.

**Ammunition Supply.**—22-pr. ammunition is supplied to the gun in cylindrical leather cases, each containing five rounds. Probably similar cases are used for 4.1-in. ammunition. Metal racks for these cases are fitted abreast the guns. The foremost gun is supplied from a magazine immediately below it; the after gun or guns from a magazine aft.

**Gun Control.**—Fire is controlled by means of electric transmitter, telephone or flexible voice-piping.

The electrical receiving apparatus is fixed above each gun just in front of the breech. It shows the range to the nearest 100 metres, and the deflection and the orders for firing. The latter are as follows:—Rapid Fire (*Schnellfeuer*), Independent orders for firing (*Selbständig*), Local Control (*Geschützweise*) and Cease Firing (*Batterie Halt*). Fire gongs are fitted.

Salvo firing is always used as long as the control remains intact, and salvo firing in half-flotillas appears to be practised considerably. A short rangefinder is fitted in some of the recent boats, on the fore searchlight platform.

**Torpedo Tubes and Torpedoes.**—All destroyers prior to the 1909–10 programme (S. 176, &c.) carry three 17.7-in. revolving tubes mounted in the centre line, so that all three will bear on either broadside. Five torpedoes are carried—three in the tubes and two spare.

In the destroyers from 1909–10 to 1912–13 programmes inclusive (S. 176 to S. 24), the number of tubes was increased to four, and the calibre to 19.7 in. The two foremost tubes are mounted one on either side, directly abaft fore-castle, with an arc of training of about 45° from nearly right ahead to about 40° before the beam. The other two are mounted in the centre line for all-round training. This disposition permits of the use of three tubes on either beam. Five torpedoes are carried—four in the tubes and one in a watertight holder on deck.

All destroyers from V. 25 onwards, except G. 101–104, apparently carry six torpedo tubes, one on either side, directly abaft fore-castle, the other four mounted in pairs in the centre line (see Plate 60). Seven torpedoes are carried, six in the tubes and one spare.

In all modern boats, along one side of the upper deck, rails are fitted for a torpedo trolley. They are usually on the port side in "S" and "V" boats, and on the starboard side in "G" boats.

**Torpedo Control.**—Torpedoes are usually fired from the bridge, a director being fitted on either side. In practice the two foremost tubes are kept locked, usually on the extreme forward bearing, owing to their being inaccessible in anything but fine weather; the two pairs of tubes aft are trained to the most suitable bearing shortly before firing.

**Mines.**—(See under Minelaying, p. 7.)

**Boats.**—Modern destroyers carry two—a dinghy and a whaler, which in boats up to S. 24 are stowed just before the mainmast, but in all subsequent 2-funnel boats occupy the space between the funnels. They are hoisted out by derrick. Leaders of flotillas (recent vessels) carry a motor boat instead of a whaler.

**Classification.**—German above-water torpedo craft are classified officially as Small (*kleine*) and Large Torpedo-boats (*grosse Torpedoboote*).

T. 11 to T. 89 are classified as Small Torpedo-boats, whilst the Division boats (D. 1-10), and all boats subsequent to T. 89 are classified as Large Torpedo-boats.

In this work the Large Torpedo-boats (Division boats excepted) are styled Destroyers; but this title is not applied to them by the Germans, who prefer the term Torpedo-boat as being more correctly descriptive of their purpose.

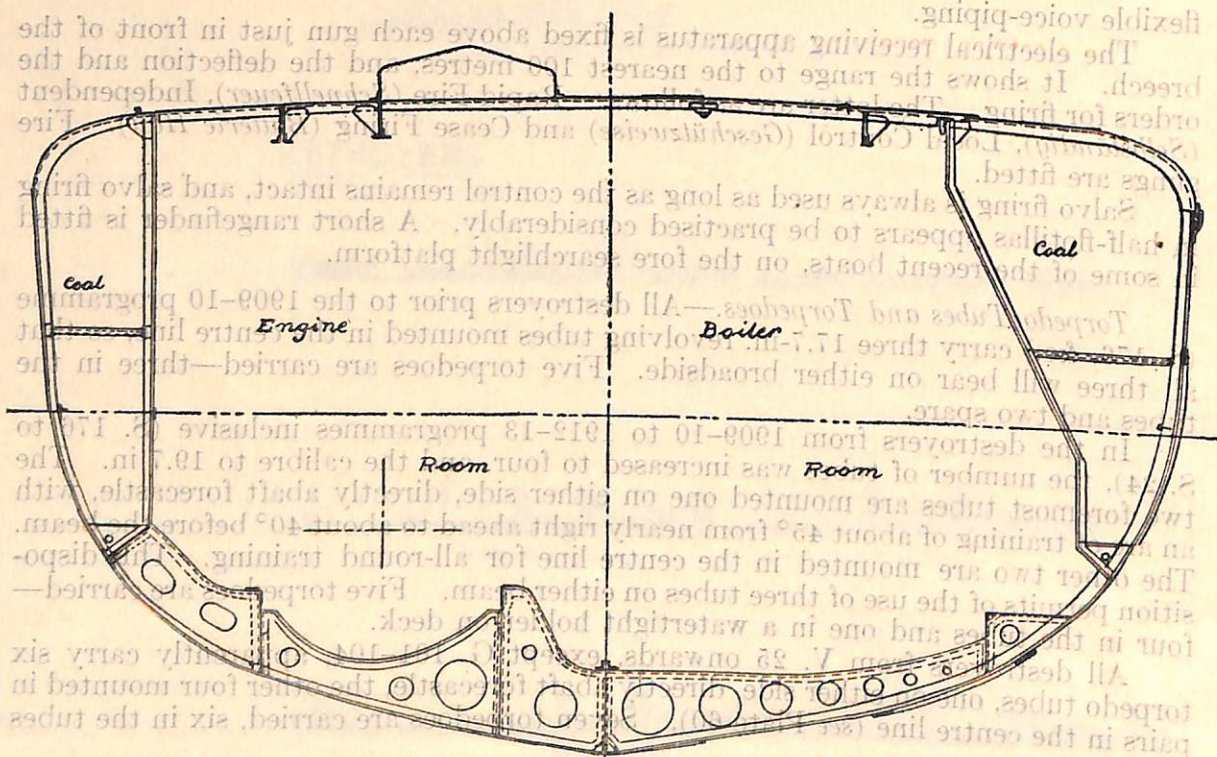
The Germans reserve the name of Destroyer for the big boats, G. 101-104 (originally building for the Argentine), B. 97-98 and 109-112, &c., which correspond roughly (in dimensions, speed, and armament) to our Flotilla Leaders.

**Colour.**—All destroyers are now painted a light grey. Bow waves are occasionally painted on.

**Constructive Details.**

**General.**—In the endeavour to ensure the continuance of the essential characteristic of German torpedo craft—that of true torpedo-boats—whilst embodying all the latest improvements and meeting all demands, without, on the other hand, unduly increasing their size and visibility, the construction of these vessels has been kept admittedly light. It is claimed, nevertheless, that by a careful choice of material as well as the mode of their construction, the requisite strength has been secured; and this appears to be borne out on the whole, as far as the hull is concerned, by the tests of active service.

**Frames.**—The inset plan shows a section through Engine and Boiler Rooms of V. 1-6 class.



The frames are 19.7 ins. apart amidships.

**Plating.**—The plating, which is of Siemens-Martin steel, has apparently increased in thickness. It is reported as being, for—

S. 114-131 (1902 to 1904-5 programmes)	bottom, plating	16"
	side plating	14"
S. 138-149 (1906-7 programme)	plating amidship	29"
V. 1-6 (1911-12 programme)	side and bottom plating	37" to 14"

The figures for the last-named programme are authentic.

**Weights.**—Great economy in weights, both above and below deck, is observed, and to this end aluminium has been introduced to an increasing extent. In S. 138-149, all panels and lockers are made of it; in S. 165-168 the boiler casings in part also; and in V. 1-6 and G. 7-12 many fittings, formerly made of steel, are now of aluminium.

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**External Details.**—In spite of the progressive movement in armament, speed, &c., and certain minor differences, there is a very great resemblance between all 2-funnel German destroyers, and they form a type very distinct from the British boats.

The 3-funnel destroyers represent a new departure, and there is at present (March 1917) no evidence that any considerable number of these boats are being built.

All 2-funnel German destroyers are noticeable for their low freeboard. In pre-war types the fore-castle is not joined to the navigating bridge. Its height varies slightly and its length considerably, in the vessels of different programmes (see Plates). In V. 1-G. 12 the freeboard at the stem is 11½ ft.

In all destroyers up to S. 24 the bridge is kept back to the foremost funnel, and in the majority well away from the fore-castle, enabling torpedo-tubes to be mounted in the interval. In V. 162-185 however, it is placed so close to the fore-castle, while yet remaining separate, that there is no room for any tubes, and they are therefore mounted abaft the fore-bridge. The bridge is housed in and roofed over, and a chart-house is fitted abaft the steering position.

Destroyers from V. 25 onwards form two or three distinct classes. In the new "V" and "S" boats the bridge is close back against the fore funnel, as in earlier types. In recent "G" boats the bridge abuts on fore-castle, and there is a considerable interval between bridge and funnel. The characteristic feature, however, of all these later destroyers is the increased armament, viz., 3 guns and 6 torpedo tubes, instead of 2 guns and 4 tubes. Other features are (1) the position of the mainmast, which has been carried aft to the wheelhouse, (2) the increased height of the fore-mast, and (3) a derrick with samson post fitted between the funnels for hoisting boats.

In all these destroyers the bridge has been raised about 7 ft., the increased height having been found particularly necessary in the case of the "G" boats. At the same time the fore funnel has been raised, and the big cowl, formerly fitted for ventilating the forward stokehold, has been replaced by a conspicuous trunk, led vertically and then horizontally, terminating under the bridge (see Plate 60).

For an example of a new "V" or "S" boat, see Plate 60; for an example of a new "G" boat, see Plate 64.

The foremost steering position and steering engine are under the break of the fore-castle, and, in all recent destroyers, there is a deck-house aft, containing the reserve steering position and steering engine.

The freeboard amidships is from 6 to 7 ft. The decks are rounded at their junction with the sides. This rounding is of varied extension, being carried right aft in some types, whilst in others it only exists between fore-castle and after wheelhouse.

German destroyers, especially the "S" boats, have very fine lines both forward and aft. The "G" boats generally have rather fuller lines forward and more freeboard aft than the "S" boats.

**Subdivision.** Internally the hull is divided into 12 or more water-tight compartments.

**Metacentric Height.**—In V. 1-6 is about 32½ inches.

**Cost.**—The average cost of one destroyer of each year's programme was:—

Series.	Programme Year.	Hull, Machinery, &c.	Gun Armament.	Torpedo Armament.	Total Cost.	Remarks.
T. 90—T. 95	1898-99	£ 39,742	£ 3,474	£ 4,892	£ 48,108	
T. 96—101	1899-1900	39,742	3,474	4,892	48,108	Reciprocating engines.
T. 102—107	1900-01	47,619	3,474	4,892	55,985	
T. 108—113	1901-02	47,619	3,474	4,892	55,985	T. 125 turbines.
T. 114—119	1902-03	45,173	3,474	4,892	53,539	New type of torpedo introduced, and number of torpedoes increased.
T. 120—125	1903-04	45,173	3,474	7,338	55,985	T. 137 alone received turbines. Gun armament of all vessels increased.
T. 126—131	1904-05	45,173	3,474	7,338	55,985	
T. 132—137	1905-06	45,173	6,279	7,338	58,790	
S. 138—149	1906-07	58,709	6,930	7,338	72,977	V. 161 alone received turbines. Price of boilers increased.
V. 150—161	1907-08	61,155	6,930	7,338	75,423	

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Series.	Programme Year.	Hull, Machinery, &c. £	Gun Armament. £	Torpedo Armament. £	Total Cost. £	Remarks.
V. 162—164 S. 165—168 G. 169—173	1908—09	77, 870	7, 746	9, 377	94, 993	Displacement increased. All destroyers of this and succeeding programmes fitted with turbines. An improvement was effected at this date in Torpedoes.
G. 174—175 S. 176—179 V. 180—185	1909—10	77, 870	7, 746	13, 698	99, 314	
V. 186—191 G. 192—197	1910—11	77, 870	7, 746	13, 698	99, 314	The number of torpedo tubes was increased from three to four, and the calibre to 19.7 in.
V. 1—6 G. 7—12	1911—12	67, 271	7, 746	13, 698	88, 715	
S. 13—24	1912—13	67, 271	7, 746	13, 698	88, 715	The displacement was reduced from about 640 to about 560 tons.
V. 25—30 S. 31—36	1913—14	80, 724	7, 746	17, 539	106, 009	

**Distinctive Marks.—**

*On Funnels.*—In peace time, (a) Leaders of half-flotillas have a large white distinguishing letter painted on the sides of the after funnel, viz.:—

No. of Flotilla.	No. of Half-Flotilla.	Letter.	No. of Half-Flotilla.	Letter.
1st	1st	A	2nd	B
2nd	3rd	C	4th	D
3rd	5th	E	6th	F
4th	7th	G	8th	H
5th	9th	J	10th	K
		and so on.		

(b) Leaders of flotillas have the number of the flotilla painted in Arabic figures on one of the funnels.

*On Bow.*—In peace time, the official number (omitting the hundred and the yard letters—S., V. or G.—e. g. 69 for G. 169) is painted in large white figures—about 6 ft. high—on either bow. The full official number (e. g., G. 169) is also painted in very small figures, &c. on either bow.

*On Masts.*—The destroyers of a flotilla generally carry a shaped frame with centre cut out (triangle, circle, &c.) on the foremast as flotilla sign, and a second shape of varying description on the mainmast as individual sign. In some cases the flotilla is distinguished by the absence of the foremost sign.

**Draught Marks.**—The draught is marked in decimetres (1 dcm.=3.93 in.).

**Fuel.—**

Coal only is used in all destroyers up to and including the 1907—08 programme. In the following year's programme (V. 162—G. 173) a small supply of oil-fuel was first carried in addition to coal, and a separate boiler for oil-firing only was fitted. Its introduction was contemporaneous with the final adoption of turbine propulsion in destroyers. The practice of carrying coal as well as oil was followed until 1913, but in the boats of the 1913—14 programme (V. 25—S. 36) all-oil firing was adopted. Great importance had previously been attached to the protection against gunfire afforded by the coal bunkers, but the advantages of oil were evidently now at length recognised, and no subsequent boats carry coal. During the war, the coal-burning boats have fallen lower and lower in estimation, and their boilers are now being converted to burn oil and coal (mixed firing).

*Coal.*—In Home waters, Westphalian coal is used exclusively.

It is generally supplied ready, in bags of thick jute (having two rope loops at the top), which are estimated to hold 220 lbs.

Destroyers up to T. 114 are allowed a deck cargo of 10 tons; T. 120 to S. 149, 15 tons; and later types, 20 tons.

In peace time, whenever flotillas were attached to a fleet, all battleships (except the Fleet Flagship) and all battle-cruisers and cruisers were each obliged to keep 20 tons of coal in bags ready for immediate delivery to the destroyers.

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**Funnels.**—All German destroyers have two funnels, except a few larger boats, completed during the war, which have three. In all the new oil-burning destroyers, the inner funnel is continued above the outer and slopes downward from forward aft, forming a conspicuous feature (see Plates 60 and 64).

Some of the torpedo-boats are fitted with two funnels, some with one funnel only.

**Machinery and Boilers.—**

*Main Engines.*—The destroyers up to V. 160 inclusive were fitted with two vertical, triple-expansion engines, except T. 125 (lost 1916) and T. 137. These two as well as V. 161 were experimental boats fitted with turbine machinery.

Since the 1908—09 programme inclusive (V. 162—G. 173), turbine machinery only has been fitted; and in that of 1909—10 Parsons turbines, the only system hitherto fitted on three shafts, were brought into line with the other systems and fitted to work on two shafts.

A further development was the fitting of three boats of 1913—14 programmes with Föttinger transformers which, however, transmit only about 88 per cent. of the power developed by the turbines, but, being reversible, do away with the necessity of installing separate turbines for going astern, besides rendering a very high power available for that purpose.

*Boilers.*—In all destroyers up to and including T. 136 (1905—06 programme) three water-tube boilers are fitted. From T. 137 to G. 197, four are fitted, of which, from V. 162 inclusive onwards, one is fitted to burn oil and three to burn coal only. This arrangement is now being extended to boats prior to V. 162. In the first of the new series of boats, from V. 1 to S. 24, there are three boilers, the foremost of which is double-ended and fitted to burn oil only, the other two being fitted to burn coal; these two are now being converted to burn coal and oil. All destroyers from V. 25 to G. 96 have three boilers fitted to burn oil only, the two after ones being double-ended.

*Dynamos.*—The voltage is 110.

**Masts.**—All destroyers up to S. 24 have two masts, namely, a pole mast situated immediately before the foremost funnel, and a mainmast with light topmast and with a derrick for hoisting in boats, &c., which is abaft the after funnel.

Destroyers from V. 25 onwards have two masts of practically equal height, both with topmasts. The derrick (as mentioned on p. 5) is fitted between the funnels.

**Minelaying.**—Destroyers carry mines only when they are detailed for that particular purpose, and whilst carrying them are considered to be precluded from undertaking other offensive operations, in view of their dangerous cargo, and are usually provided with an escort.

When detailed for mining, each destroyer carries 12 mines, six on either side amidships, lashed as convenient. There are no special fittings for them, except in a few of the older boats. Rollers are fitted on the under side of the sinkers to facilitate moving about the deck. The mines are laid at a speed of about 15 knots. They are simply pushed overboard, alternately from starboard and port side.

**Minesweeping.**—A considerable number of destroyers, including some of the most recent types, are fitted for minesweeping. A large double fairlead is fitted aft, as shown in Plate 60 (V. 67—72). Minesweeping is carried out by half-flotillas in line abreast, the two ends of each sweep being towed by adjacent destroyers. A kite is fitted midway along the sweep, which is of 1½ in. to 2 in. wire. The destroyers are 164 yards apart.

All torpedo boats, except those few which are used as despatch boats and tenders, are fitted for minesweeping and in war time are principally employed on minesweeping duties.

**Nomenclature.**—German torpedo-boats and destroyers are designated by one of the letters A., B., D., G., S., T., V., as well as a number, e. g., G. 192. The letter A. is used as prefix for two classes of torpedo-boats built during the war, the first of which consisted of very small boats, capable of transport in sections by rail, whilst the second class is a much improved type. The letter D. is equivalent to Division Boat—a special larger type of vessel introduced in 1886 as leader of a "division" of smaller torpedo-boats. The letters B., G., S., V. are the initial letters of the firms which build destroyers, viz.: Blohm and Voss Works (Hamburg), Germania Yard (Kiel), Schichau Works (Elbing), Vulcan Works (Stettin and Hamburg). The A. and D. boats each form a separate numerical series. The B., G., S., and V. boats all belong to a single numerical series, which commenced with the oldest torpedo-boats, and was continued through all the destroyer programmes up to 1910—11., i. e., to G. 197. A fresh numerical series was then commenced with V. 1.

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In November 1910, torpedo-boats lettered "S."—up to S. 57 inclusive—were re-lettered "T." whilst retaining their old number, *e. g.*, T. 57. In 1914 this re-lettering was extended up to G. 113 inclusive, the letters "S." and "G." both being replaced by the letter "T." In 1916 the re-lettering was further extended up to G. 137. This is done in order to prevent confusion between the boats of the new and the old series, and will no doubt eventually be continued right up to G. 197.

**Refits and Repairs** (peace routine).—An annual refit is carried out by every destroyer which is regularly, though not necessarily continuously, in commission throughout the year. It is carried out during an interval in which the vessel is not in commission (*i. e.*, when the crew is in barracks) at the dockyard to which the destroyer is attached for administrative purposes. The vessel is then docked and her bottom coated.

A second docking is effected annually by every destroyer regularly in commission and the bottom is again coated.

A thorough overhaul is effected by every destroyer after 3 consecutive years' flotilla work. As each flotilla, as a rule, is actively employed for 3 consecutive years, this means that one flotilla of each group of 3 is withdrawn at the end of 3 years for this purpose. The destroyers are turned over to the dockyards without crews.

**Searchlights.**—In all destroyers up to and including those of 1913–14 programme (V. 25–S. 36) one 23-in. searchlight is carried on the platform above the fore-bridge. More recent destroyers carry two searchlights, one above the fore bridge, the other on a platform over after wheel-house.

**Signals.**—In peace time, under normal conditions, destroyers communicate visually by searchlights, star signals, and the Night Signalling Apparatus, consisting of three vertical lights, red and white. But every endeavour is made to reduce signalling to a minimum and to confine it to the use of hand flags, hand-flashing lamps, and megaphones.

In war time, communication *between* destroyers is almost entirely by megaphone, supplemented by whistle for helm signals, and shaded stern lights for speed signals.

**Smoke-producing Apparatus.**—All modern destroyers carry, aft on either quarter, a metal cylinder, about 2 feet in length, mounted on a sloping platform. These two cylinders, which contain some chemical composition, are in connection with the compressed air service, and are used for developing a smoke-screen. The apparatus is controlled from the after wheel-house. The smoke produced is greyish-white in colour.

In addition, the boilers are utilised to produce excessive smoke as required.

**Speed** (see **Trials** also).—Before the war, the cruising speed of destroyers was fixed as follows:—

- (a) For the boats from T. 90 to T. 136 inclusive ----- 14 knots.
- (b) For the boats from T. 137 onwards ----- 17 knots.

In turbine boats with two shafts, for speeds of 12 knots and under one shaft only is to be used, if possible, the other being allowed to run idle.

**Steam Heating, &c.**—Most, if not all, German T.B.'s and T.B.D.'s are fitted with steam heating installations, together with arrangements whereby one vessel can supply steam for heating one or more boats lying alongside. All German torpedo-craft are also lined with either wood or linoleum to prevent sweating.

**Steering Gear and Steering Positions.**—All destroyers and torpedo-boats are fitted with a bow as well as a stern rudder. The bow rudder is situated below the keel about 12 feet abaft the stem. It can be raised into a recess in the hull by means of a fine-pitched screw, and has to be so raised before the boat can be taken in tow. It is always used when manoeuvring, as the steering capabilities are insufficient without it.

There are two steering engines, one of which, the main, is forward, under the break of the fore-castle, and the second, or reserve, aft. The three steering positions are situated—

- (1) on the bridge;
- (2) under the break of the fore-castle, with the main steering-engine;
- (3) aft (in the after wheel-house, where fitted) with the reserve steering-engine.

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Nos. 1 and 2 are connected with the main steering gear by a system of rods and chains, fitted with bottle screws at intervals, carried along on both sides of the upper deck, on rollers, to the tiller.

No. 3 works a duplicate set of gear, also carried along the upper deck.

Each of these positions can be connected up with the bow-rudder by special chain-and-rod gearing. When Nos. 1 and 2 are in use, the gear of No. 3 leading to both bow and stern rudders is disconnected, and *vice versa*.

**Submarine Attack.**—Destroyers usually carry six large cylindrical depth charges, and are fitted to tow an explosive kite. A launching trough for depth charges is fitted on either quarter. The kite is towed from the minesweeping fairlead aft (*see p. 7*), where fitted.

**Trials.**—

**Newly-built Destroyers.**—The following are some of the trials carried out by newly-built destroyers in peace time:—

- (1) Acceptance trial.
- (2) Three hours' full power trial.
- (3) Measured mile trials.
- (4) Twelve hours' trial (? coal consumption trial).
- (5) Storm trials.

With the exception of (5) all the above are carried out in the Baltic; the storm trials are carried out in the North Sea. The measured mile trials are carried out chiefly on the two-mile course near Neukrug in the Gulf of Danzig.

The measured mile trials, it is stated, are carried out entirely with naval ratings, and with the full equipment of stores, ammunition, and water, and the normal supply of coal, the vessels being structurally complete otherwise. Any deficiency in numbers of crew or in stores is made up with ballast.

The 12 hours' trial is carried out with the destroyer fully loaded at the start, *i. e.*, with all fuel, &c., and provisions for one month.

Storm trials are carried out by newly-built destroyers in the North Sea, between Cuxhaven and Heligoland, to test their seaworthiness. At least one destroyer of every batch delivered by a Yard is so tested. It is reported that the test has to be carried out at 17 knots in a gale for a few hours, the behaviour of the vessel being tested with the sea on the bow, beam, and quarter. The force of the wind is variously stated as 8–10 and 7; the latter is apparently the approximate average.

**Other Vessels in commission, &c. (peace routine).**—

On first commissioning a three hours' trial is carried out, of which half-an-hour is at full speed with forced draught.

The boats of each series do a one hour's full power trial in the beginning of spring directly after commissioning for exercise. This is to be carried out by all the boats under similar (the most favourable) conditions of wind and weather, if possible.

**Wireless Telegraphy.**—In destroyers from V. 186 to S. 24, a wireless house, about 6 ft. by 4 ft., is fitted just abaft the fore funnel. In most destroyers from V. 25 onwards the wireless house is fitted on the starboard side under the bridge. The usual destroyer wireless set has a normal effective night range of about 200 miles.

The following detailed description of the destroyer series V. 1–6 is authentic, and this series may be regarded as typical of modern *pre-war* German destroyers.

**V. 1–6.\***

(*See Plates 61 and 65.*)

**General Remarks.**—These six destroyers form half of the 1911–12 programme, and were built at the Vulcan Works at Stettin.

**Cost.**—For average cost, *see page 6.*

**Complement.**—73.

**General Dimensions, &c.**—

Length	{	between perpendiculars.....	223 ft.	1 ins.
		L. W. L.....	230 "	3 "
		over all.....	233 "	1 "
Breadth, extreme, at upper deck.....		24 "	11 "	

\* V. 4 was lost on 31 May or 1 June 1916.

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General Dimensions, &c.—cont.

Height of—	{	forecastle above W. L.-----	13 ft. 1 ins.
		freeboard amidships at centre line	6 " 10 "
Designed Load	{	" " at side-----	6 " 3 "
		deck above keel amidships-----	14 " 5 "
Draught*	{	to bottom of keel-----	7 " 7 "
		to bottom of rudder-----	10 " 0 "
Designed Dis- placement	{	at load draught*-----	561 tons.
		at extreme draught-----	689 "
Tons per inch immersion-----			about 9.2
Speed, designed-----			32.5 knots.

Fuel Stowage.—

Coal {	(V. 1-4)-----	141 tons.	Oil {	(V. 1-4)-----	54 tons.
	(V. 5-6)-----	139 "		(V. 5-6)-----	68 "
	Deck cargo--	20 "			

Hull.—

Material.—Siemens-Martin steel, tensile strength 35 tons per sq. in.

Constructive Details:—

Vertical keel—25" plating, height under engine room 23 ins.  
 Flat keel—31" plating, decreasing to 21" aft and 18" forward, width 3' 8".  
 Vertical keel plates connected with double butt straps are double-riveted.  
 Angle-bar for vertical keel—upper 2.1" x 2.1" x .23", lower 2.9" x 2.5" x .27".  
 Bulkheads—lower plates .16", upper plates .12".  
 Frames—consist of angle-bar 2.4" x 1.6" x .2" placed 19.7" apart, but closer at after end.  
 Side and bottom plating—37" to 14".  
 Deck plating—16", strengthened in wake of heavy weights.

Armament.—

2—22-pr. (8.8-cm.) Q. F., L/30 (1 on forecastle, 1 abaft deck-house aft).  
 2—machine guns.  
 4—19.7-in. torpedo tubes (1 on either side of deck directly abaft forecastle—arc of training about 45°, i. e., from almost right ahead to about 40° before the beam; 1 tube directly abaft the second funnel and 1 directly before deck-house aft, both in centre line, with all-round training).  
 At least five torpedoes are carried, four in the tubes and one in a watertight holder the starboard side abreast second funnel.

Searchlights.—

1—23-in., on chart-house forward; 60 ampères and 48 volts.

Communications.—Voice-pipes from bridge to engine-room, chart-house, wireless room, and steering positions forward and aft.

Wireless Telegraphy.—The wireless room, which is situated directly abaft the first funnel, is insulated against heat and sound.

Rudders.—A bow rudder is fitted which can be raised into a recess in the hull when boat is to be towed, &c.

Steering Gear.—2 steam steering engines and 3 steering positions, one of which is on the bridge, and one at each steering engine.

Machinery and Boilers.—

Machinery:—

2 Curtis-A. E. G.-Vulcan turbines, in two compartments, one abaft the other. Each shaft is fitted with an astern turbine. Designed S. H. P. 15,000. Pressure 272 lbs. per sq. in.

Boilers:—

3 Schulz-Vulcan, in separate compartments. The foremost boiler is double-ended and fitted to burn oil only—heating surface 7,320 sq. ft. Centre and after boiler fitted to burn coal—total heating surface of these two boilers 9,688 sq. ft., total grate surface 182 sq. ft.

\* With 70 tons of coal and 20 of oil on board.

Machinery and Boilers.—cont.

Propellers:—

2 in number, bronze, 3-bladed.

Auxiliary Machinery.

2 air-pumps, vertical turbine-driven.  
 2 circulating pumps.  
 2 evaporators, capacity 18 tons in 24 hrs.  
 1 distilling apparatus, capacity 2 tons in 24 hrs.  
 2 main duplex feed-pumps----- } In engine-room.  
 1 auxiliary duplex feed-pump----- }  
 2 duplex suction pumps----- }  
 2 electric fans.  
 3 duplex auxiliary feed-pumps.  
 1 ash-ejector fitted with bilge suction.  
 2 ash-ejectors.  
 1 oil-heating apparatus.  
 2 turbo-dynamos, 110 volts, for all purposes, each capable of supplying current for all lighting purposes, except searchlight. When the searchlight is in use, both are required. One turbo-dynamo is fitted in the fore and the other in the after engine-room.

Miscellaneous.—

3 feed tanks in boiler-room, and 1 overflow tank in engine-room, total capacity 19.5 tons.  
 Fresh water tanks—3 tons. Small hand-pump in galley.  
 Living spaces are steam-heated and electrically lighted. Five portable coal stoves are fitted in various parts of the boat.

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DESTROYERS

Part III.  
Section A.  
Destroyers.

Class	Year	Builder	Commissioned	Decommissioned	Notes
1	1917				
2	1917				
3	1917				
4	1917				
5	1917				
6	1917				
7	1917				
8	1917				
9	1917				
10	1917				
11	1917				
12	1917				
13	1917				
14	1917				
15	1917				
16	1917				
17	1917				
18	1917				
19	1917				
20	1917				
21	1917				
22	1917				
23	1917				
24	1917				
25	1917				
26	1917				
27	1917				
28	1917				
29	1917				
30	1917				

TABULAR DETAILS.

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DESTROYERS.

Part III.  
Section 4.  
Destroyers.

OFFICIAL NUMBER.	Where Built.	Date of Launch.	Comple- ment.	Hull.				Armament.
				Length.		Designed Load.		
				(a) P.P. (b) L.W.L. (c) extreme.	Breadth (extreme).	Draught.	Displace- ment.	
* * * (12 in No.) *		1916-17		Ft. Ins.	Ft. Ins.	Ft. Ins.	Tons (Eng.).	
* * * (12 in No.) *		1916						
B 112..... B 111..... B 110..... B 109.....	Blohm & Voss, Hamburg.	1915		(c) 320 0†	32 0†	11 0†	1,300†	4—4.1" 2—m. 6—T.
G 104†..... G 103†..... G 102†..... G 101†.....	Germania, Kiel.	1914		(c) 312 8	30 1	9 4	1,250	3—4.1" 2—m. 4—T.

† Approximate only.

‡ Originally building for Argentina.

DESTROYERS.

Part III.  
Section 4.  
Destroyers.

No. of Pro- pellers.	Machinery and Boilers.		Fuel Supply.		General Remarks.	OFFICIAL NUMBER.	
	(a) Engines. (b) Boilers.	Horse Power. (a) Designed. (b) Mean on trial.	Speed. (a) Designed. (b) Mean on trial.	(a) Coal (max.). (b) Oil.			Endurance at 15 Knots (with deck cargo).
		Knots.	Tons.	Miles.			
2			(a) 34.0†	Oil only.	(See Plate 62. High forecastle separated from bridge. 3 funnels, the center one being much broader than the other two. 4.1" guns all on center line; 1 on forecastle, 1 between foremost and center funnels, 1 between center and after funnels, 1 aft abaft deck-house. 2 tubes, one on either side, directly abaft forecastle; 4 tubes, mounted in pairs on the center line abaft after funnel.	* * * (12 in No.) *	
2	(a) Germania turbines. (b) 3 double ended.	(a) 24,000 (T.).	(a) 32.0	(a) Nil (b) 345	(See Plate 63. High forecastle extending to after edge of 1st funnel. 3 funnels of equal size, equidistant, with slight rake. 2 masts (foremast just before 1st funnel, mainmast some way abaft 3d funnel). Bridge directly before 1st funnel. Deck-house between mainmast and stern. 1—4.1" on forecastle; 1—4.1" before and 1 abaft deck-house aft. Tubes between the funnels. 1 searchlight on top of chart-house. Standard compass on deck-house.	* * * (12 in No.) *	

106291-17-3

† Approximate only.

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Part III.  
Section 4.  
Destroyers.

Destroyers—

OFFICIAL NUMBER.	Where Built.	Date of Launch.	Comple- ment.	Hull.				Armament.
				Length.	Breadth (extreme).	Designed Load.		
						Draught.	Displace- ment.	
(a) P. P. (b) L. W. L. (c) extreme.	Ft. Ins.	Ft. Ins.	Ft. Ins.	Tons (Eng.).				
V 100.....	Vulcan, Stettin.	1915		(c) 320 0†	32 0†	11 0†	1,300†	4—4.1" 2—m. 6—T.
B 98.....	Blohm & Voss, Hamburg.	1915		(c) 320 0†	32 0†	11 0†	1,300	4—4.1" 2—m. 6—T.
B 97.....								
G 96.....	Germania, Kiel.	1915-16		(c) 255 0†				3—4.1" 2—m. 6—T. (19.7").
G 95.....								
G 94.....								
G 93.....								
G 92.....								
G 91.....								
G 90.....								
G 89.....								
G 88.....								
G 87.....								
G 86.....								
G 85.....								
V 84.....	Vulcan, Stettin.	1915-16		(c) 255 0†				3—4.1" 2—m. 6—T. (19.7").
V 83.....								
V 82.....								
V 81.....								
V 80.....								
V 79.....								
V 78.....								
V 77.....								
V 76.....								
V 75.....								
V 74.....								
V 73.....								

† Approximate only.

continued.

Part III.  
Section 4.  
Destroyers.

No. of Pro- pellers.	Machinery and Boilers.		Fuel Supply.		General Remarks.	OFFICIAL NUMBER.
	(a) Engines.	Horse Power.	Speed.	(a) Coal (max.).		
	(b) Boilers.	(a) Designed. (b) Mean on trial.	(a) Designed. (b) Mean on trial.	(b) Oil.		
			Knots.	Tons.	Miles.	
2			(a) 34.0†	Oil only.		Generally resembles B. 109-112 (see above). V 100.
2			(a) 34.0†	Oil only.		Same type as B. 109-112 (see above). B 98. B 97.
2			(a) 34.0†	Oil only.	(See Plate 64. Raised fore-castle (with break-water), cut away on both sides for torpedo tubes. 2 funnels, the fore funnel higher than the after one. 2 masts (foremast immediately abaft bridge, mainmast just before after wheel-house). Bridge and fore-castle in one; interval between bridge and fore funnel. 1—4.1" on fore-castle. 1—4.1" on platform between after funnel and mainmast. 1—4.1" abaft after wheel-house. 2 tubes, one on either side, directly abaft fore-castle. 4 tubes, mounted in pairs in the centre line before and abaft midship gun. 2 searchlights, one above bridge, one on platform over after wheel-house.	G 96. G 95. G 94. G 93. G 92. G 91. G 90. G 89. G 88. G 87. G 86. G 85.
2			(a) 34.0†	Oil only.		Differ from G. 85-96 (see above) in having a well-deck between fore-castle and bridge. Same general type as V. 67-72 (see Plate 60). V 84. V 83. V 82. V 81. V 80. V 79. V 78. V 77. V 76. V 75. V 74. V 73.

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Part III.  
Section 4.

Destroyers.

OFFICIAL NUMBER.	Where Built.	Date of Launch.	Comple-ment.	Hull.				Armament.
				Length.	Breadth (extreme).	Designed Load.		
						(a) P. P. (b) L. W. L. (c) extreme.	Draught.	
Ft. Ins.	Ft. Ins.	Ft. Ins.	Tons (Eng.).					
V 72 V 71 V 70 V 69 V 68 V 67	Vulcan, Hamburg.	1915-16		(c) 255 0†			3-4.1" (or 22-pr.) 2-m. 6-T. (19.7").	
S 66 S 65 S 64 S 63 S 62 S 61 S 60 S 59 S 58	Schichau, Elbing.	1916		(c) 255 0†			3-4.1" 2-m. 6-T. (19.7").	
S 57 S 56 S 55 S 54 S 53 S 52 S 51 S 50 S 49	Schichau, Elbing.	1913-15	90†	(c) 250 0†			3-4.1" (or 22-pr.) 2-m. 6-T. (19.7").	

† Approximate only.

continued.

No. of Pro-pellers.	Machinery and Boilers.				Fuel Supply.		General Remarks.	OFFICIAL NUMBER.
	(a) Engines. (b) Boilers.	Horse Power.	Speed.	(a) Coal (max.). (b) Oil.	Endurance at 15 Knots (with deck-cargo).			
		(c) Designed. (b) Mean on trial.	(a) Designed. (b) Mean on trial.					
			Knots.	Tons.	Miles.			
2			(a) 34.0†	Oil only.		See Plate 60. Differ from G. 85-96 (see p. 17) in having a well-deck between fore-castle and bridge.	V 72. V 71. V 70. V 69. V 68. V 67.	
2			(a) 34.0†	Oil only.		Same general type as V. 67-72 (see Plate 60).	S 66. S 65. S 64. S 63. S 62. S 61. S 60. S 59. S 58.	
2			(a) 34.0†	Oil only.		Same general type as V. 67-72 (see Plate 60).	S 57. S 56. S 55. S 54. S 53. S 52. S 51. S 50. S 49.	

† Approximate only.

Part III.  
Section 4.

Destroyers.

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Part III.  
Section 4.

Destroyers—

Destroyers.

OFFICIAL NUMBER.	Where Built.	Date of Launch.	Comple- ment.	Hull.				Armament.
				Length.	Breadth (extreme).	Designed Load.		
						Draught.	Displace- ment.	
(a) P. P. (b) L. W. L. (c) extreme.	Ft. Ins.	Ft. Ins.	Ft. Ins.	Tons (Eng.).				
<b>1914-15 PROGRAMME.</b>								
V 48.....	Vulcan, Stettin.	1915	90†	(c) 250 0†				3—4.1" or 22-pr. 2—m. 6—T. (19.7").
V 47.....								
V 46.....								
V 45.....								
V 44.....								
V 43.....								
<b>1913-14 PROGRAMME.</b>								
G 42.....	Germania, Kiel.	1915	90†	(c) 250 0†				3—4.1" or 22-pr. 2—m. 6—T. (19.7").
G 41.....								
G 40.....								
G 39.....								
G 38.....								
G 37.....								
<b>1913-14 PROGRAMME.</b>								
S 36.....	Schichau, Elbing.	1913-14	90†	(c) 245 0†			640†	3—22-pr. 2—m. 6—T. (19.7").
S 34.....								
S 33.....								
S 32.....								

Part III.  
Section 4.

Destroyers.

continued.

No. of Pro- pellers.	Machinery and Boilers.				Fuel Supply.		General Remarks.	OFFICIAL NUMBER.
	(a) Engines. (b) Boilers.	Horse Power	Speed.		(a) Coal (max.).	Endurance at 15 knots (with deck-cargo).		
		(a) Designed. (b) Mean on trial.	(a) Designed. (b) Mean on trial.	(a) Coal (max.). (b) Oil.				
			Knots.	Tons.	Miles.			
2	(a) A. E. G. Vulcan turbines.		(a) 34.0†	Oil only		Same general type as V. 67-72 (see Plate 60).	<b>1914-15 PROGRAMME.</b> V 48. V 47. V 46. V 45. V 44. V 43.	
2	(a) Germania turbines.		(a) 34.0†	Oil only		Same general type as G. 85-96 (see p. 17).	G 42. G 41. G 40. G 39. G 38. G 37.	
2	(a) Schichau turbines.	(a) 20,000 (T).	(a) 32.5	(a) Nil (b) 240†		Raised forecastle (with break-water), cut away on both sides for torpedo tubes. 2 funnels well forward, fore funnel higher than after funnel. 2 masts (foremast immediately abaft bridge, mainmast just before after wheel-house). Interval between bridge and forecastle and between bridge and fore funnel. 1—22-pr. on forecastle. 1—22-pr. on platform between after funnel and mainmast. 1—22-pr. abaft after wheel-house. 2 tubes, one on either side, directly abaft forecastle. 4 tubes, mounted in pairs, in the centre line, on twin turntables before and abaft mid-ship gun. 1 searchlight above bridge.	<b>1913-14 PROGRAMME.</b> S 36. S 34. S 33. S 32.	

† Approximate only.

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Part III.  
Section 4.  
Destroyers.

Destroyers—

OFFICIAL NUMBER.	Where Built.	Date of Launch.	Comple-ment.	Hull.				Armament.
				Length.	Breadth (extreme).	Designed Load.		
						Draught.	Displace-ment.	
(a) P. P. (b) L. W. I. (c) extreme.	Ft. Ins.	Ft. Ins.	Ft. Ins.	Tons (Eng.)				
<b>1913-14 PROGRAMME—cont.</b>								
V 30.....	Vulcan, Stettin.	1914	90†	(c) 245 0†			640	3—22-pr. 2—m. 6—T. (19. 7'').
V 28.....								
V 26.....								
<b>1912-13 PROGRAMME.</b>								
S 24.....	Schichau, Elbing.	1912-13	73	(c) 234 7	24 4	10 0	555	2—22-pr. 2—m. 4—T. (19. 7'').
S 23.....								
S 22.....								
S 21.....								
S 20.....								
S 19.....								
S 18.....								
S 17.....								
S 16.....								
S 15.....								
S 14.....								
S 13.....								
<b>1911-12 PROGRAMME.</b>								
G 11.....	Germania, Kiel.	1911-12	73	(c) 233 1	24 11	10 0	555	2—22-pr. 2—m. 4—T. (19. 7'').
G 10.....								
G 9.....								
G 8.....								
G 7.....								

† Approximately.

continued.

Part III.  
Section 4.  
Destroyers

No. of Propellers.	(a) Engines. (b) Boilers.	Horse Power (a) Designed (b) Mean on trial.	Speed. (a) Designed (b) Mean on trial.	Fuel Supply.		General Remarks.	OFFICIAL NUMBER.
				(a) Coal (max.).	Endurance at 15 knots (with deck cargo).		
				(b) Oil.	Miles.		
2	(a) A. E. G. Vulcan turbines.	(a) 20,000 (T)	(a) 32.5	(a) Nil		Same general type as S. 31-36 (see p. 21).	<b>1913-14 PROGRAMME—cont.</b>
			(b) 240†				V 30. V 28. V 26.
2	(a) Schichau turbines. (b).	(a) 15,000 (T)	(a) 32.5 (a) 32.5 (a) 32.5 (a) 32.5 (a) 32.5 (a) 32.5 (a) 32.5 (a) 32.5 (a) 32.5 (a) 32.5	(a) 132 + 20† (b) 55	1,700	See Plate 65. Raised fore-castle (with break-water), cut away on both sides for torpedo tubes. 2 funnels. 2 masts (foremast by bridge, mainmast abaft 2nd funnel). Bridge directly before 1st funnel; a large interval between bridge and fore-castle. Wireless house abaft 1st funnel. After wheel-house well abaft mainmast. 1—22-pr. on fore-castle. 1—22-pr. abaft deck-house aft. 2 tubes, one on either side directly abaft fore-castle. 1 tube in centre line directly abaft 2nd funnel. 1 tube in centre line directly before after wheel-house. 1 searchlight above bridge. Standard compass on after wheel-house.	<b>1912-13 PROGRAMME</b>
							S 24. S 23. S 22. S 21. S 20. S 19. S 18. S 17. S 16. S 15. S 14. S 13.
2	(a) Germania turbines. (b) 3	(a) 15,000 (T)	(a) 32.5 (a) 32.5 (a) 32.5 (a) 32.5	(a) 136 + 20† (b) 53	1,620		<b>1911-12 PROGRAMME.</b>
							G 11. G 10. G 9. G 8. G 7.

† Deck cargo.

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Part III.  
Section 4.

Destroyers.

Destroyers—

OFFICIAL NUMBER.	Where Built.	Date of Launch.	Comple- ment.	Hull.				Armament.	
				Length.		Breadth (extreme).	Designed Load.		
				(a) P. P. (b) L. W. I. (c) extreme.	Ft. Ins.		Ft. Ins.		Tons (Eng.).
<b>1911-12 PROGRAMME —cont.</b>									
V 6*	Vulcan, Stettin.	1913	73	(a) 223 1	24 11	10 0	561	2—22-pr. 2—m. 4—T. (19.7").	
V 5*		1913		(b) 230 3					
V 3		1911		(c) 233 1					
V 2		1911							
V 1		1911							
<b>1910-11 PROGRAMME.</b>									
G 197	Germania, Kiel.	1910-11	83	(a) 232 11	25 11	10 6	638	2—22-pr. 2—m. 4—T. (19.7").	
G 196				(c) 242 10					
G 195									
G 193									
G 192									
V 190	Vulcan, Stettin.	1911	83	(a) 232 11	25 11	10 6	646	2—22-pr. 2—m. 4—T. (19.7").	
V 189		1911		(c) 242 6					
V 186		1910							

\* Built to replace two similarly numbered which were building for the German Navy, and which the Contractors were permitted to sell to Greece in 1912—delivery to the German naval authorities not having taken place.

Part III.  
Section 4.

Destroyers.

continued.

No. of Propellers.	Machinery and Boilers.		Fuel Supply.		General Remarks.	OFFICIAL NUMBER.
	(a) Engines. (b) Boilers.	Horse Power	Speed.			
		(a) Designed. (b) Mean on trial.	(a) Designed. (b) Mean on trial.	(a) Coal (max.). (b) Oil.		
2	(a) A. E. G. Vulcan turbines. (b) 3 Schulz-Vulcan.	(a) 15,000 (T).	(a) 32.5 (b) 33.4 (c) 32.5	(a) 139 +20† (b) 68	1,830	1911-12 PRO-GRAMME —cont. V 6.* V 5.* V 3. V 2. V 1.
2	(a) Germania turbines. (b) 4 Schulz Navy type.	(a) 16,000 (T).	(a) 32.5	(a) 168 +20† (b) 54	1,260	1910-11 PRO-GRAMME. G 197. G 196. G 195. G 193. G 192. V 190. V 189. V 186.
2	(a) A. E. G. Vulcan turbines. (b) 4 Schulz Navy type.	(a) 16,000 (T).	(a) 32.5	(a) 160 +20† (b) 53	1,230	

† Deck cargo.

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Part III.  
Section 4.

Destroyers.

Destroyers—

OFFICIAL NUMBER.	Where Built.	Date of Launch.	Comple- ment.	Hull.				Armament.
				Length.	Breadth (extreme).	Designed Load.		
						Draught.	Displace- ment.	
(a) P. P. (b) L. W. I. (c) extreme.								
<b>1909-10 PROGRAMME.</b>								
V 185.....	Vulcan, Stettin.	1909-10	83	(c) 242 6	25 11	10 2	626	2—22-pr. 2—m. 4—T. (19.7").
V 184.....								
V 183.....								
V 182.....								
V 181.....								
V 180.....								
S 179.....	Schichau, Elbing.	1910	83	(c) 243 5	25 11	10 2	625	2—22-pr. 2—m. 4—T. (19.7").
S 178.....								
S 176.....								
G 175.....	Germania, Kiel.	1910	83	(b) 241 2	25 11	10 2	643	2—22-pr. 2—m. 4—T. (19.7").
G 174.....				(c) 242 10				
<b>1908-09 PROGRAMME.</b>								
G 173.....	Germania, Kiel.	1908-09	83	(a) 234 7 (c) 242 10	25 11	10 2	625	2—22-pr. 2—m. 3—T. (17.7"). 5 torpedoes.
G 172.....								
G 170.....								
G 169.....								
S 168*.....	Schichau, Elbing.	1910-11	83	(c) 243 5	25 11	9 10	605	2—22-pr. 2—m. 3—T. (17.7"). 5 torpedoes.
S 167*.....								
S 166*.....								
S 165*.....								
V 164.....	Vulcan, Stettin.	1909	83	(c) 242 6	25 11	9 10	603	2—22-pr. 2—m. 3—T. (17.7"). 5 torpedoes.
V 163.....								
V 162.....								

\* Built to replace four similarly numbered which were building for the German Navy and which the contractors were permitted to sell to Turkey in 1910, delivery to the German naval authorities not having taken place.

Part III.  
Section 4.

Destroyers.

continued.

No. of Pro- pellers.	Machinery and Boilers.			Fuel Supply.		General Remarks.	OFFICIAL NUMBER.
	(a) Engines. (b) Boilers.	Horse-Power.	Speed.	(a) Coal (max.).	Endurance at 15 knots (with deck cargo).		
		(a) Designed. (b) Mean on trial.	(a) Designed. (b) Mean on trial.	(a) Coal (max.). (b) Oil.			
			Knots.	Tons.	Miles.		1909-10 PRO-GRAMME.
2	(a) A.E.G. Vulcan turbines. (b) 4-Schulz Navy type.	(a) 16,000 (T).	(a) 32.5 (a) 32.5 (a) 32.5 (b) 32.15 (a) 32.5 (b) 32.2 (a) 32.5 (b) 32.6 (a) 32.5 (b) 32.7	(a) 148 +20† (b) 40	1,300	(See Plate 66. Raised fore-castle, with break-water. 2 funnels. 2 masts (stump foremast by bridge, mainmast abaft 2nd funnel). Bridge directly before 1st funnel; as in 1908-09 programme, interval between bridge and fore-castle is so small as not to admit of a torpedo tube being carried there as customary in earlier boats.	V 185. V 184. V 183. V 182. V 181. V 180.
2	(a) Melms and Pfenninger turbines. (b) 4-Schulz Navy type.	(a) 16,000 (T).	(a) 32.0 (a) 32.0 (b) 33.0	(a) 148 +20† (b) 50	1,460	After wheel-house abaft main-mast. 1—22-pr. on fore-castle. 1—22-pr. abaft deck house aft. 2 broadside tubes, one on either side, abaft 1st funnel. 1 tube in center line abaft 2nd funnel.	S 179. S 178. S 176.
2	(a) Parsons turbines (modified). (b) 4-Schulz, Navy type.	(a) 16,000 (T).	(a) 31.5	(a) 189 +20† (b) 47	1,240	1 tube in center line before after wheel-house. 1 searchlight above bridge. Standard compass directly abaft mainmast, in some cases on after wheel-house.	G 175. G 174.
3 (G. 173 has 2.)	† (a) Parsons turbines. Note.—G. 173 has Zoelly turbines. (b) 4-Schulz.	(a) 14,000 (T). (b) 16,400 (T). (a) 14,000 (T). (a) 14,000 (T). (a) 14,000 (T).	(a) 30.0 (b) 32.9 (a) 30.0 (a) 30.0 (b) 33.7 (a) 30.0 (b) 33.8	(a) 159 +20† (b) 40	1,260	(See Plate 66. Raised fore-castle. 2 funnels. 2 masts (stump foremast by bridge, mainmast abaft 2nd funnel). Bridge directly before 1st funnel; interval between bridge and fore-castle is so small as not to admit of a torpedo tube being mounted there as customary in earlier boats.	G 173. G 172. G 170. G 169.
2	(a) Schichau turbines. (b) 4-Schulz.	(a) 14,000 (T).	(a) 32.0	(a) 150 +20† (b) 40	1,200	After wheel-house abaft main-mast. 1—22-pr. on fore-castle. 1—22-pr. abaft after wheel-house. 1 tube between funnels. 1 tube abaft 2nd funnel. 1 tube before after wheel-house.	S 168*. S 167*. S 166*. S 165*.
2	(a) A.E.G. turbines. Note.—V. 164 has A.E.G. Vulcan turbines. (b) 4-Schulz.	(a) 14,000 (T).	(a) 30.0 (b) 34.4 (a) 30.0 (b) 33.0 (a) 30.0 (b) 32.2	(a) 150 +20† (b) 40	1,200	1 searchlight above bridge. Standard compass fitted on after wheel-house.	V 164. V 163. V 162.

† In two engine rooms; three shafts, except G. 173, which has two shafts.

‡ Deck cargo.

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Section 4.

Destroyers.

OFFICIAL NUMBER.	Where Built.	Date of Launch.	Comple- ment.	Hull.				Armament.
				Length.	Breadth (extreme).	Designed Load.		
						(a) P.P. (b) L.W.I. (c) Extreme.	Draught.	
Ft. Ins.	Ft. Ins.	Ft. Ins.	Tons (Eng.).					
<b>1907-08 PROGRAMME.</b>								
V 161	Vulcan, Stettin.	1907-08	83	(a) 228 0	25 7	10 2	545	2—15-pr. 2—m. 3—T. (17.7"). 5 torpedoes.
V 160				(c) 236 7				
V 159								
V 158								
V 157								
V 156								
V 155								
V 154								
V 153								
V 152								
V 151								
V 150								
<b>1906-07 PROGRAMME.</b>								
S 149	Schichau, Elbing.	1906-07	80	(a) 229 8	25 7	8 10	520	1—15-pr. 3—4-pr. 2—m. 3—T. (17.7"). 5 torpedoes.
S 148				(c) 231 0				
S 147								
S 146								
S 145								
S 144								
S 143								
S 142								
S 141								
S 140								
S 139								
S 138								

Part III.  
Section 4.

Destroyers.

continued.

No. of Pro- pellers.	Machinery and Boilers.		Fuel Supply.		General Remarks.	OFFICIAL NUMBER.	
	(a) Engines. (b) Boilers.	Horse Power.	Speed.	(a) Coal (max.). (b) Oil.			Endurance at 15 Knots (with deck cargo).
		(a) Designed. (b) Mean on trial.	(a) Designed. (b) Mean on trial.	(a) Coal (max.). (b) Oil.			
			Knots.	Tons.	Miles.		
2	(a) Vertical triple expansion. Note—V. 161 has A.E.G. turbines. (b) 4 Schulz.	(a) 10,250 (T). (b) 13,000 (T).	(a) 30.0 (b) 32.1	(a) 165 +20†. (b) Nil	1,575	V 161.	
		(a) 10,250 (T).	(a) 30.0			V 160.	
		(a) 10,250 (T).	(a) 30.0			V 159.	
		(a) 10,250 (T).	(a) 30.0			V 158.	
		(a) 10,250 (T).	(a) 30.0			V 157.	
		(a) 10,250 (T).	(a) 30.0			V 156.	
		(a) 10,250 (T).	(a) 30.0			V 155.	
		(a) 10,250 (T).	(a) 30.0	(a) 158 +20†. (b) Nil	1,450	V 154.	
		(a) 10,250 (T).	(a) 30.0 (b) 31.55			V 153.	
		(a) 10,250 (T).	(a) 30.0 (b) 31.12			V 152.	
		(a) 10,250 (T).	(a) 30.0 (b) 31.4			V 151.	
		(a) 10,250 (T).	(a) 30.0 (b) 31.4			V 150.	
2	(a) Vertical triple expansion. (b) 4 Schulz.	(a) 10,000	(a) 30.0	(a) 190 +15†. (b) Nil	2,500	1906-07 PROGRAMME. S 149.	
						S 148.	
						S 147.	
						S 146.	
						S 145.	
						S 144.	
						S 143.	
						S 142.	
						S 141.	
						S 140.	
						S 139.	
						S 138.	

†Deck cargo.

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## Destroyers.

## Destroyers—

OFFICIAL NUMBER.	Where Built.	Date of Launch.	Comple- ment.	Hull.				Armament.	
				Length.		Breadth (extreme).	Designed Load.		
				(a) P.P. (b) L.W.L. (c) extreme.	Ft. Ins.		Ft. Ins.		Draught.
<b>1905-1906 PROGRAMME.</b>									
T 137.....	Germania, Kiel.	1907	80	(a) 224 9	25 1	9 10	560	1—15-pr. 3—4-pr. 2—m. 3—T. (17.7"). 5 torpedoes.	
T 136.....		1906	68	(a) 207 0	23 0	7 7	480	4—4-pr. 2—m. 3—T. (17.7"). 5 torpedoes.	
T 135.....		1906	68	(a) 207 0	23 0	7 7	480	1—15-pr. 2—4-pr. 2—m. 3—T. (17.7"). 5 torpedoes.	
T 134.....		1906	68	(a) 207 0	23 0	7 7	480	4—4-pr. 2—m. 3—T. (17.7"). 5 torpedoes.	
T 133.....		1906	68	(a) 207 0	23 0	7 7	480	4—4-pr. 2—m. 3—T. (17.7"). 5 torpedoes.	
T 132.....	1906	68	(a) 207 0	23 0	7 7	480	4—4-pr. 2—m. 3—T. (17.7"). 5 torpedoes.		
<b>1904-1905 PROGRAMME.</b>									
T 131.....	Schichau, Elbing.	1905	60	(a) 207 8	23 0	7 7	480	3—4-pr. 2—m. 3—T. (17.7"). 5 torpedoes.	
T 130§.....									
T 129.....									
T 128.....									
T 127.....									
T 126*.....									
<b>1903-1904 PROGRAMME.</b>									
T 123.....	Schichau, Elbing.	1904	60	(a) 205 1	23 0	7 7	465	3—4-pr. 2—m. 3—T. (17.7"). 5 torpedoes.	
T 122.....									
T 121.....									
T 120.....									

\* Sunk November 1905; raised May 1906 in two portions.

§ Reported to have been damaged beyond repair.

Part III.  
Section 4.

## Destroyers.

continued.

No. of Pro- pellers.	Machinery and Boilers.			Fuel Supply.		General Remarks.	OFFICIAL NUMBER.
	(a) Engines. (b) Boilers.	Horse Power.	Speed.	(a) Coal (max.).	Endurance at 15 knots (with deck cargo).		
		(a) Designed. (b) Mean on trial.	(a) Designed. (b) Mean on trial.	(b) Oil.	Miles.		
3	(a) Parsons turbines. (b) 4 Schulz- Thornycroft.	(a) 10,000 (T) (b) 13,800 (T) (est.)	(a) 30.0 (b) 33.0	(a) 165 + 15‡ (b) Nil.	1,500	See Plate 67. Same as T. 132-134 (see below), but has— 1—4-pr. at either end of bridge. 1—4-pr. between funnel and mainmast on platform. 1—15-pr. on platform abaft main- mast. 1 tube directly abaft forecastle. 1 tube before 2nd funnel. 1 tube abaft mainmast.	1905-1906 PRO- GRAMME. T 137.
2	(a) Vertical triple expansion. (b) 3 Schulz.	(a) 6,000	(a) 27.0	(a) 129 + 15‡ (b) Nil.	1,280	See Plate 66. Raised forecastle, with break- water. 2 slightly raking funnels. 2 masts (stump foremast by bridge, mainmast abaft 2nd funnel). Bridge directly before 1st fun- nel; a large interval between bridge and forecastle. 1—4-pr. at either end of bridge. 2—4-prs. on platforms in centre line abaft mainmast. 1 tube directly abaft forecastle. 2 tubes, in center line, between funnels. 1 searchlight above bridge. T. 135 has 1—15-pr. in place of 2—4-prs. on platform abaft mainmast.	T 136.
		(a) 6,000	(a) 27.0			T 135.	
		(a) 6,000	(a) 27.0			T 134.	
		(a) 6,000 (b) 6,500	(a) 27.0 (b) 29.0			T 133. T 132.	
2	(a) Vertical triple expansion. (b) 3 Schulz- Thornycroft.	(a) 6,500 (a) 6,500 (b) 6,600 (a) 6,500 (a) 6,500	(a) 27.0	(a) 113 + 15‡ (b) Nil.	1,640	Low forecastle, about 2½ feet above upper deck level, with raised platform at break. 2 slightly raking funnels. 2 masts (stump foremast by bridge; mainmast abaft 2nd funnel). Bridge directly before 1st funnel; a large interval between bridge and fore- castle. 1—4-pr. on either side abreast the bridge. 1—4-pr. abaft mainmast. 1 tube directly abaft forecastle. 2 tubes, in center line, between funnels. 1 searchlight above bridge.	1904-1905 PRO- GRAMME. T 131. T 130. T 129. T 128. T 127. T 126.*
2	(a) Vertical triple expansion. (b) 3 Schulz- Thornycroft.	(a) 6,500 (b) 6,800 (a) 6,500 (b) 6,600 (a) 6,500 (b) 6,750	(a) 27.0 (b) 28.3‡ (a) 27.0 (b) 27.0‡ (a) 27.0 (b) 27.1‡ (a) 27.0 (b) 27.01‡	(a) 113 + 15‡ (a) 113 + 51‡ (a) 113 + 15‡ (a) 113 + 15‡	1,890 1,890 1,890 1,890	Same type as T. 126-131 (see above).	1903-1904 PRO- GRAMME. T 123. T 122. T 121. T 120.

‡ Mean of three hours' trial.

‡ Deck cargo.

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Section 4.

## Destroyers.

## Destroyers—

OFFICIAL NUMBER.	Where Built.	Date of Launch.	Comple- ment.	Hull.				Armament.
				Length.		Designed Load.		
				(a) P. P. (b) L. W. I. (c) extreme.	Breadth (extreme).	Draught.	Displace- ment.	
<b>1902-1903 PROGRAMME.</b>				Ft. Ins.	Ft. Ins.	Ft. Ins.	Tons (Eng.).	
T 114.....	Schichau, Elbing.	1902	56	(a) 201 2	23 0	7 7	413	3—4-pr..... 2—m. 3—T. (17.7"). 5 Torpedoes.
<b>1901-1902 PROGRAMME.</b>								
T 113.....	Germania, Kiel.	1901-02	56	(a) 207 8	22 0	7 7	394	3—4-pr..... 2—m. 3—T. (17.7"). 5 Torpedoes.
T 112.....								
T 111.....								
T 110.....								
T 109.....								
T 108.....								
<b>1900-1901 PROGRAMME.</b>								
T 107.....	Schichau, Elbing.	1901	56	(a) 200 2 (c) 210 0	23 0	7 7	394	3—4-pr..... 2—m. 3—T. (17.7"). 5 Torpedoes.
T 106.....								
T 105.....								
T 104.....								
T 103.....								
T 102.....								
<b>1899-1900 PROGRAMME.</b>								
T 101.....	Schichau, Elbing.	1900-01	56	(a) 200 2 (c) 210 0	23 0	7 7	394	3—4-pr..... 2—m. 3—T. (17.7"). 5 Torpedoes.
T 100.....								
T 99.....								
T 98.....								
T 97 (Sleipner)....								
T 96.....								

Part III.  
Section 4.

## Destroyers.

continued.

No. of Pro- pellers.	(a) Engines. (b) Boilers.	Machinery and Boilers.		Fuel Supply.		General Remarks.	OFFICIAL NUMBER.
		Horse Power.	Speed.	(a) Coal (max.).	Endurance at 15 knots (with deck cargo).		
		(a) Designed. (b) Mean on trial.	(a) Designed. (b) Mean on trial.	(b) Oil.	Miles.		
2	(a) Vertical, triple expansion. (b) 3 Schulz- Thornycroft.	(a) 6,200	(a) 26.0	(a) 98 + 10‡ (b) Nil	1,350	Same type as T. 126-131 (see above).	<b>1902-1903 PRO- GRAMME.</b> T 114.
2	(a) Vertical, triple expansion. (b) 3 Thorny- croft.	(a) 6,000	(a) 26.0 (a) 26.0 (a) 26.0 (a) 26.0 (a) 26.0 (b) 29.1	(a) 110 + 10‡ (b) Nil	1,840	Low forecastle, about 2½ ft. above upper deck level, with raised platform at break. 2 slightly raking funnels, rather far apart. 2 masts (stump foremast by bridge, mainmast abaft 2nd funnel). Bridge directly before 1st funnel, a large interval between bridge and forecastle. 1—4-pr. on either side nearly abreast bridge. 1—4-pr. abaft mainmast. 1 tube directly abaft forecastle. 2 tubes, in centre line, between funnels.	<b>1901-1902 PRO- GRAMME.</b> T 113. T 112. T 111. T 110. T 109. T 108.
2	(a) Vertical, triple expansion. (b) 3 Thorny- croft.	(a) 5,400	(a) 26.0 (b) 28.3 (a) 26.0 (a) 26.0 (a) 26.0 (a) 26.0	(a) 92 + 10‡ (b) Nil	1,300	Low forecastle, about 2½ ft. above upper deck level. 2 raking funnels, rather far apart. 2 masts (stump foremast by bridge, mainmast abaft 2nd funnel). Bridge directly before first fun- nel; a large interval between bridge and forecastle. Sternpost slopes outwards from deck to waterline. 1—4-pr. on either side, abreast bridge. 1—4-pr. abaft mainmast. 1 tube directly abaft forecastle. 1 tube before and 1 tube abaft second funnel.	<b>1900-1901 PRO- GRAMME.</b> T 107. T 106. T 105. T 104. T 103. T 102.
2	(a) Vertical, triple expansion. (b) 3 Thorny- croft.	(a) 5,400	(a) 26.0 (a) 26.0 (a) 26.0 (a) 26.0 (a) 26.0 (a) 26.0	(a) 92 + 10‡ (b) Nil	1,300	Same type as T. 102-107 (see above); but T. 97, which before the war was used as the Emperor's despatch boat, may differ slightly, and prob- ably still has one mast only, abaft forecastle.	<b>1899-1900 PRO- GRAMME.</b> T 101. T 100. T 99. T 98. T 97 (Sleipner). T 96.

‡ Deck cargo.

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Part III.  
Section 4.  
Destroyers.

Destroyers—

OFFICIAL NUMBER.	Where Built.	Date of Launch.	Comple- ment.	Hull.				Armament.	
				Length.		Breadth (extreme).	Designed Load.		
				(a) P. P. (b) L. W. I. (c) extreme.	Ft. Ins.		Draught.		Displace- ment.
1898-1899 PROGRAMME.				Ft. Ins.	Ft. Ins.	Ft. Ins.	Tons. (Eng.).		
T 95.....	Schichau, Elbing.	1899-1900.	56	(a) 200 2	23 0	7 7	394	3—4-pr. .... 2—m. 3—T. (17.7"). 5—torpedoes.	
T 94.....				(c) 210 0					
T 93.....									
T 92.....									
T 91.....									

Part III.  
Section 4.  
Destroyers.

continued.

No. of Pro- pellers.	Machinery and Boilers.				Fuel Supply.		General Remarks.	OFFICIAL NUMBER.
	(a) Engines. (b) Boilers.	Horse Power.	Speed.		(a) Coal (max.).	Endurance at 15 Knots (with deck-cargo).		
		(a) Designed. (b) Mean on trial.	(a) Designed. (b) Mean on trial.	(b) Oil.				
2	(a) Vertical, triple expansion. (d) 3 Thornycroft.	(a) 5,400	(a) 26.0 Knots.		(a) 92+ 10‡ (b) Nil.	1,300 Miles.	Same type as T. 102-107 (see p. 33).	1898-1899 PRO-GRAMME. T 95. T 94. T 93. T 92. T 91.

‡ Deck Cargo.

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TORPEDO

Part III.  
Section 4.

Torpedo  
Boats.

OFFICIAL NUMBER.	Where Built.	Date of Launch.	Comple-ment.	Hull.				Armament.					
				Length.		Breadth (extreme).	Designed Load.						
				(a) P. P. (b) L. W. I. (c) extreme.	Ft. Ins.		Ft. Ins.		Tons (Eng.).				
V 108*	Vulcan, Stettin.	1914	.....	(c) 201	1	20	4	6	1	318	2—13-pr. 4—T. (17.7'').		
V 107*													
V 106*													
V 105*													
DIVISIONAL.													
iD 10.....	Thorny-croft, Chiswick.	1898	60	(c) 210	0	19	4	7	7	349	5—4-pr. 2—m. 2—T. (17.7''). 5 torpedoes.		
D 9.....	Schichau, Elbing.	1894	59	(c) 196	10	25	3	12	2	374	3—4-pr. 2—m. 1—S. T. (17.7''). 2—T. (17.7''). 5 torpedoes.		
D 8.....	"	1891	49	(c) 195	10	23	0	11	6	344	3—4-pr. 2—m. 1—S. T. (17.7''). 2—T. (17.7''). 5 torpedoes.		
D 7.....													
D 6.....	"	1888-89	49	(c) 190	0	23	0	11	6	315	3—4-pr. 2—m. 1—S. T. (17.7''). 2—T. (17.7''). 5 torpedoes.		
D 5.....													
D 4.....	"	1887	49	(c) 181	5	21	8	10	6	295	3—4-pr. 2—m. 1—S. T. (17.7''). 2—T. (17.7''). 5 torpedoes.		
D 3.....													
D 2 (late Alice Roosevelt).	"	1886	46	(c) 183	0	21	8	9	9	226	3—4-pr. 2—m. 1—S. T. (17.7''). 2—T. (17.7''). 5 torpedoes.		
D 1.....													

\*Originally building for Holland.

BOATS.

Part III.  
Section 4.

Torpedo  
Boats.

No. of Pro-pellers.	Machinery and Boilers.			Fuel Supply.		General Remarks.	OFFICIAL NUMBER.
	(a) Engines. (b) Boilers.	Horse Power.	Speed.	(a) Coal (max.).	(b) Oil.		
		(a) Designed. (b) Mean on trial.	(a) Designed. (b) Mean on trial.				
2	(a) A. E. G. Vulcan turbines. (b) 3 (2 coal-burning, 1 oil).	(a) 5,300 (T.).	27.0			(See Plate 68. Short high forecastle. Considerable interval between fore-castle and bridge. 2 raking masts; foremast close abaft bridge, mainmast well aft. 2 raking funnels.	V 108. V 107. V 106. V 105.
DIVISIONAL.							
2	(a) Triple expansion. (b) 3 Thorny-croft.	(a) 5,500	(a) 26.0	(a) 79		(See Plate 69. 2 raking funnels, with mast between; stump foremast on forecastle. Tur-tle-back forecastle, with raised super-structure at break on which are mounted 2—4-pr. guns.	D 10.
2	(a) Triple expansion. (b) 3 locomotive.	(b) 4,040	(b) 24.5	(a) 105			D 9.
2	(a) Triple expansion. (b) 2 locomotive.	(a) 4,000	(a) 26.0	(a) 75		Turtle-back forecastle. 2 raking funnels. 1 mast abaft 2nd funnel. In some of these vessels there is a stump foremast also. High bridge before fore funnel.	D 8. D 7.
2	(a) Triple expansion. (b) Scholz. (a) Triple expansion. (b) Locomotive.	(a) 3,600	(a) 23.0	(a) 90		2—4-prs. on forebridge. 1—4-pr. on conning tower aft. In D. 8 the 2 tubes are on the middle line abaft after conning-tower. Searchlight mounted above fore-bridge.	D 6. D 5.
2	(a) Triple expansion. (b) Locomotive.	(a) 2,500	(a) 21.0	(a) 65			D 4. D 3.
2	(a) Triple expansion. (b) Locomotive.	(a) 1,800	(a) 21.0	(a) 55		2 pole masts, 1 funnel; deck house abaft the mainmast. Other details as for D. 1. 1—4-pr. mounted on either side just before bridge. 1 mast and 1 funnel; 2 conning towers, 1 before funnel, the other abaft mast, bridge before funnel, with a search-light projector on port side. Turtle-back forecastle.	D 2 (late Alice Roosevelt). D 1.

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Section 4.  
Torpedo  
Boats.

Torpedo

OFFICIAL NUMBER.	Where Built.	Date of Launch.	Comple- ment.	Hull.				Armament.
				Length.	Breadth (extreme).	Designed Load.		
						Draught.	Displace- ment.	
(a) P. P. (b) L. W. I. (c) extreme.								
				Ft. Ins.	Ft. Ins.	Ft. Ins.	Tons (Eng.).	
<b>1st CLASS.</b>								
A 29.....	Vulcan, Hamburg.	1915-16	.....	(c) 170 0†	.....	.....	200†	2—22-pr. 1—T. (17.7"). 2 torpedoes.
A 28.....								
A 27.....								
A 26.....								
A 25.....								
A 24.....								
A 23.....								
A 22.....								
A 21.....								
A 20.....								
A 19.....								
A 18.....								
A 17.....								
A 16.....	Vulcan, Hamburg.*	1915	29	(c) 142 0†	.....	8 2†	95†	1—4-pr. 2—T. (17.7"). 2 torpedoes.
A 15.....								
A 14.....								
A 13.....								
A 12.....								
A 11.....								
A 10.....								
A 9.....								
A 8.....								
A 7.....								
A 5.....								
A 4.....								
A 3.....								
A 1.....								

\* Some of these boats were sent in sections by rail from Hamburg to Antwerp and there put together. † Approximate only.

Boats—continued.

Part III.  
Section 4.  
Torpedo  
Boats.

No. of Pro- pellers.	Machinery and Boilers.				Fuel Supply.	General Remarks.	OFFICIAL NUMBER.
	(a) Engines. (b) Boilers.	Horse Power.	Speed.	(a) Coal (max.). (b) Oil.			
		(a) Designed. (b) Mean on trial.	(a) Designed. (b) Mean on trial.				
			Knots.	Tons.			
							<b>1st CLASS.</b>
							A 29.
							A 28.
							A 27.
							A 26.
							A 25.
							A 24.
							A 23.
			(a) 28.0†	Oil only.		High forecastle. 1—22-pr. on forecastle. 1—22-pr. aft.	A 22.
							A 21.
							A 20.
							A 19.
							A 18.
							A 17.
							A 16.
							A 15.
1	(a) Recipro- cating.		20.0†	(a) 27		(See Plate 69. Turtle-backed forecastle with bridge close abaft it. 1 raking funnel; 2 masts. A small conning tower is fitted below bridge. 1—4-pr. on platform abaft mainmast. 1 tube between funnel and foremast. 1 tube between funnel and mainmast. Standard compass on pedestal close before funnel.	A 14.
							A 13.
							A 12.
							A 11.
							A 10.
							A 9.
							A 8.
							A 7.
							A 5.
							A 4.
							A 3.
							A 1.

† Approximate only.

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Part III.  
Section 4.  
Torpedo  
Boats.

## Torpedo

OFFICIAL NUMBER.	Where Built.	Date of Launch.	Comple- ment.	Hull.				Armament.
				Length. (a) P. P. (b) L. W. I. (c) extreme.	Breadth (extreme).	Designed Load.		
						Draught.	Displace- ment.	
1st CLASS— cont.								
T 89.....	Germania, Kiel.	1897-98	24	Ft. Ins.	Ft. Ins.	Ft. Ins.	Tons (Eng.).	1—4-pr..... 2—T. (17.7"). 4 torpedoes.
T 88.....				(a) 154 2	16 5	9 6	152	
T 87.....	Schichau, Elbing.	1897	24	(a) 152 7	16 6	7 3	152	1—4-pr., on after con- ning tower. 1—S. T. 17.7" in bow. 2—17.7" T. 4 torpedoes.
T 86.....								
T 85.....								
T 84.....								
T 83.....								
T 82.....								
T 81.....	Schichau, Elbing.	1894-95	24	(a) 152 7	16 6	7 3	150	1—4-pr., on after con- ning tower. 1—S. T. 17.7" in bow. 2—17.7" T. 4 torpedoes.
T 80.....								
T 79.....								
T 78.....								
T 77.....								
T 76.....								
T 75.....								
T 74.....	Schichau, Elbing.	1895	24	(a) 152 7	16 6	7 3	143	1—4-pr. on conning tower aft. 1—S. T. 17.7" in bow. 2—17.7" T. 4 torpedoes.
T 73.....	Schichau, Elbing.	1893	21	(a) 152 7	16 6	7 3	167	1—4-pr. on conning tower aft. 1—S. T. (17.7") in bow. 2—T. (17.7"). 4 torpedoes.
T 72.....								
T 71.....								
T 70.....								
T 69.....								
T 68.....								
T 67.....								
T 66.....								

## Boats—continued.

Part III.  
Section 4.  
Torpedo  
Boats.

No. of Pro- pellers.	Machinery and Boilers.			Fuel Supply.	General Remarks.	OFFICIAL NUMBER.
	(a) Engines. (b) Boilers.	Horse-Power	Speed.	(a) Coal (max.).		
		(a) Designed. (b) Mean on trial.	(a) Designed. (b) Mean on trial.	(b) Oil.		
1	(a) Triple expansion. (b) Thorny- croft-Schulz.	(a) 1,800	(a) 25.0	(a) 30 (b) 7	1 mast between 2 funnels, which are far apart. Turtle-back to fore con- ning tower which is just before fore funnel. After conning tower abaft after funnel.	1st CLASS— cont. T 89. T 88.
1	(a) Triple expansion. (b) Thornycroft.	(a) 1,800	(a) 25	(a) 30*	1 mast between 2 funnels which are far apart, rounded stem, turtle back to fore conning tower which is just before fore funnel. After conning tower abaft after funnel.	T 87. T 86. T 85. T 84. T 83. T 82.
1	(a) Triple expansion. (b) 2 Locomotive.	(a) 1,800	(a) 25	(a) 30*	1 funnel, 2 conning towers. The train- ing tubes are fitted with powder im- pulse only.	T 81. T 80. T 79. T 78. T 77. T 76. T 75.
1	(a) Triple expansion. (b) Thornycroft.	(a) 1,800	(a) 26	(a) 30*	1 funnel, 2 conning towers. The train- ing tubes are fitted with powder im- pulse only.	T 74.
1	(a) Triple expansion. (b) 2 Locomotive.	(a) 1,800	(a) 22	(a) 30*	1 mast aft, 1 funnel rounded stem, par- tial turtle back to fore conning tower. After conning tower abaft mast.	T 73. T 72. T 71. T 70. T 69. T 68. T 67. T 66.

\* N. B.—Some of these boats have been fitted to burn oil fuel.

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Part III.  
Section 4.  
Torpedo  
Boats.

Torpedo

OFFICIAL NUMBER.	Where Built.	Date of Launch.	Comple- ment.	Hull.				Armament.
				Length.	Breadth (extreme).	Designed Load.		
						(a) P. P. (b) L. W. I. (c) extreme.	Draught.	
2nd and 3rd CLASSES.								
T 40.....	Schichau, Elbing.	1887	16	(a) 131 3	14 9	5 11	84	1—4-pr. on conning tower aft. 1—S. T. (13.8") in bow. 2—T. (13.8").
T 39.....								
T 38.....								
T 37.....								
T 36.....								
T 35.....								
T 34.....								
T 33.....								
T 31.....								
T 30.....								
T 29.....	Schichau, Elbing.	1885-86	16	(a) 123 10	15 9	6 6	84	1—4-pr. on conning tower aft. 1—S. T. (13.8") in bow. 2—T. (13.8").
T 28.....								
T 27.....								
T 25.....								
T 24.....								
T 22.....								
T 21.....								
T 20.....								
T 16.....								
T 15.....								
T 14.....								
T 13.....								
T 11.....								

Boats—continued.

Part III.  
Section 4.  
Torpedo  
Boats.

No. of Propellers.	Machinery and Boilers.			Fuel Supply.		General Remarks.	OFFICIAL NUMBER.
	(a) Engines. (b) Boilers.	Horse Power.	Speed.	(a) Coal (max.).	(b) Oil.		
		(a) Designed. (b) Mean on trial.	(a) Designed. (b) Mean on trial.	(a) Coal (max.).			
1	(a) Triple expansion. (b) 1 Locomotive.	(a) 1,000	(a) 20 Knots.	(a) 34*	Tons.	† 1 mast aft; 1 funnel, large, raking; deck flat with rounded edges, and partially turtle-backed forward to conning tower; there is an after conning tower abaft mainmast.	2nd and 3rd CLASSES. T 40. T 39. T 38. T 37. T 36. T 35. T 34. T 33. T 31. T 30. T 29. T 28. T 27.
1	(a) Triple expansion. (b) 1 Locomotive.	1,000	20	(a) 26	Tons.	† 1 mast aft; 1 funnel, large, raking; deck flat with rounded edges, and partially turtle-backed forward to conning tower; there is an after conning tower abaft mainmast.	T 25. T 24. T 22. T 21. T 20. T 16. T 15. T 14. T 13. T 11.

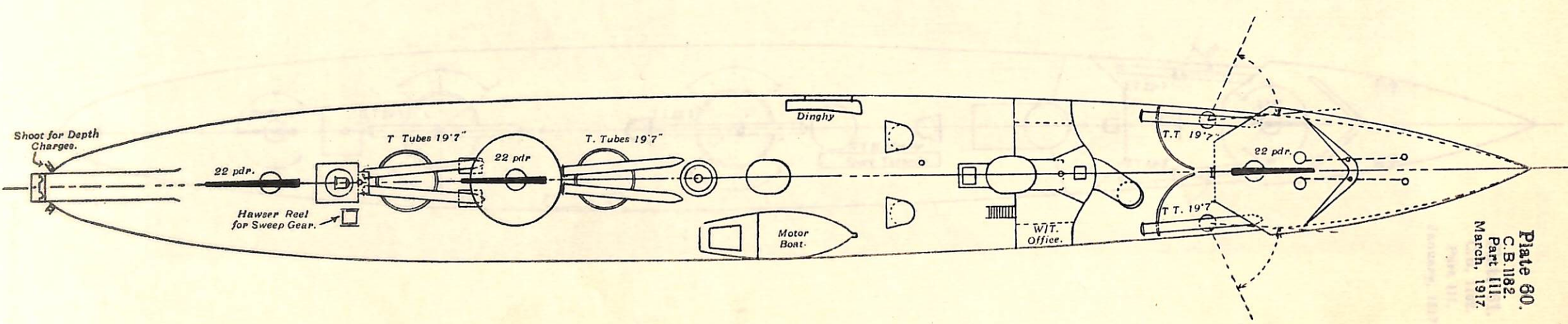
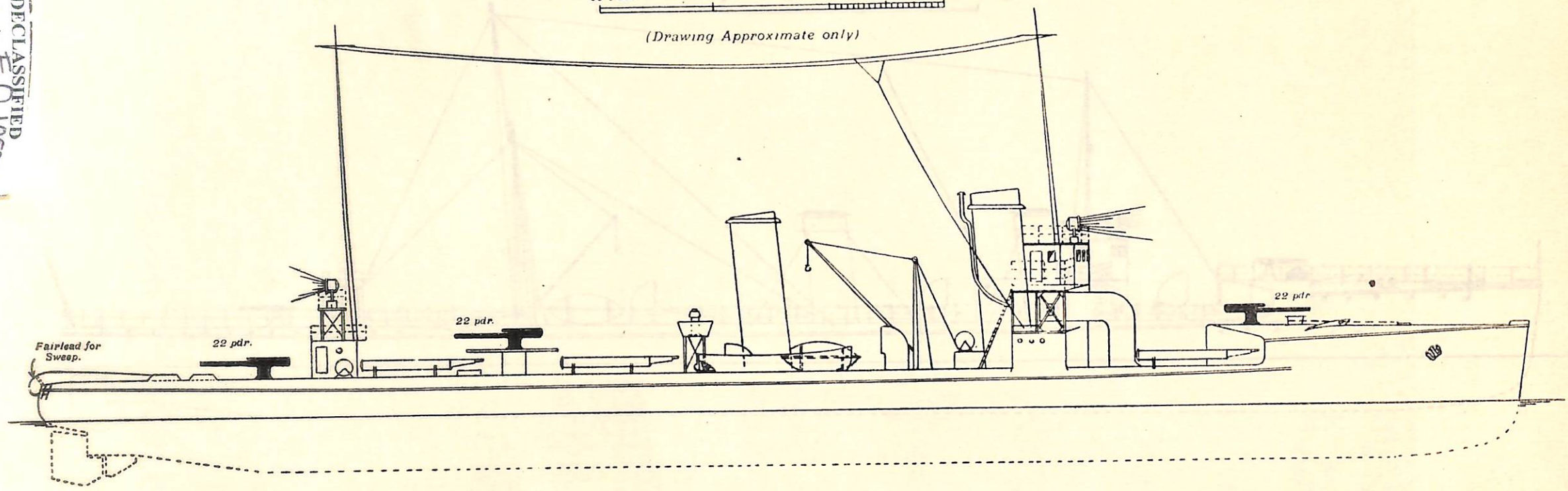
\* N. B.—Some of these boats have been fitted to burn oil fuel. † Some of these boats are reported now to have 2 masts.

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# TORPEDO BOAT DESTROYERS V. 67-72

40 Feet 20 Scale 0 10 20 Feet

(Drawing Approximate only)



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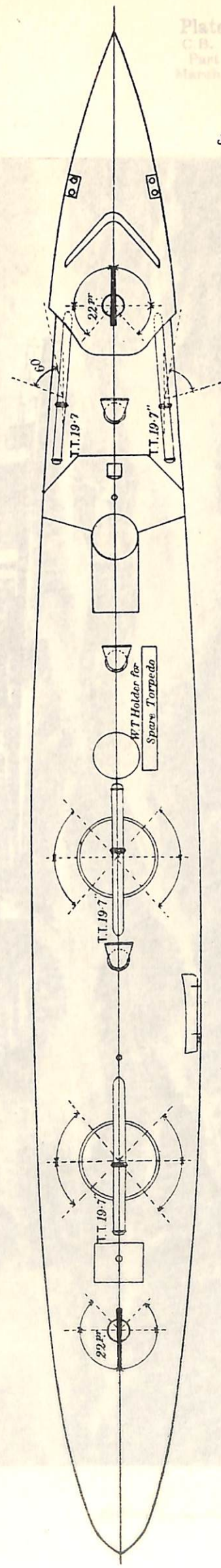
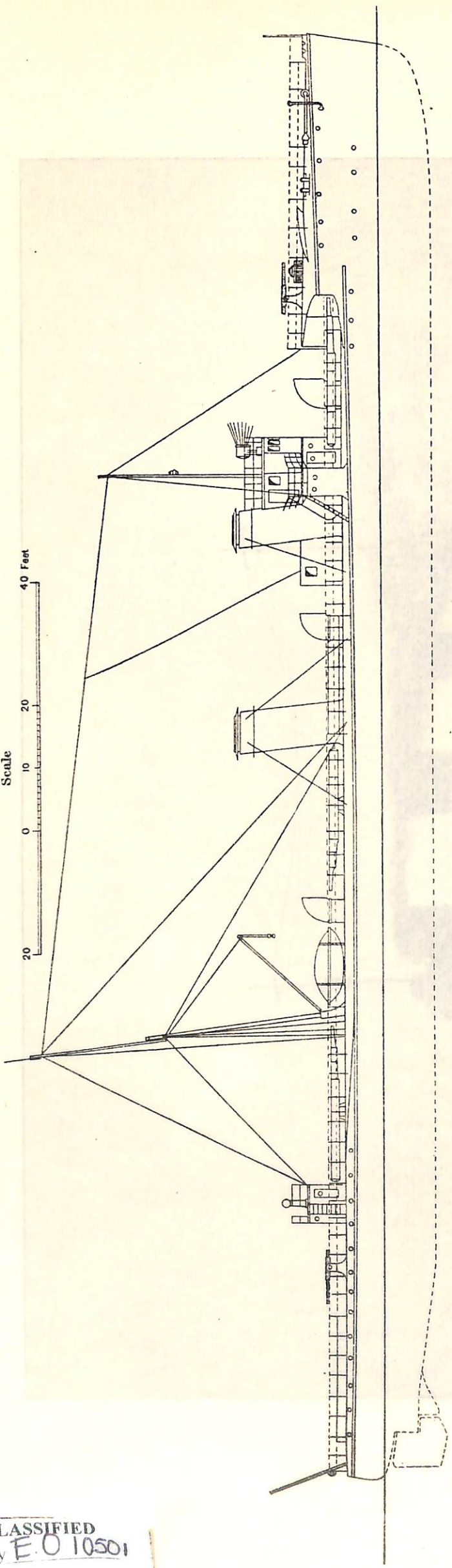
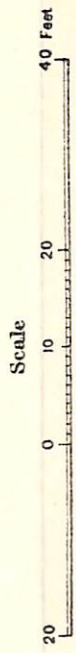
Ordnance Survey, March, 1917

Plate 60.  
C.B. 1182.  
Part III.  
March, 1917.

Plate 62.  
C.B. 1182.  
Part III.  
March 1917.

Plate 61.  
C.B. 1182.  
Part III.  
January, 1917.

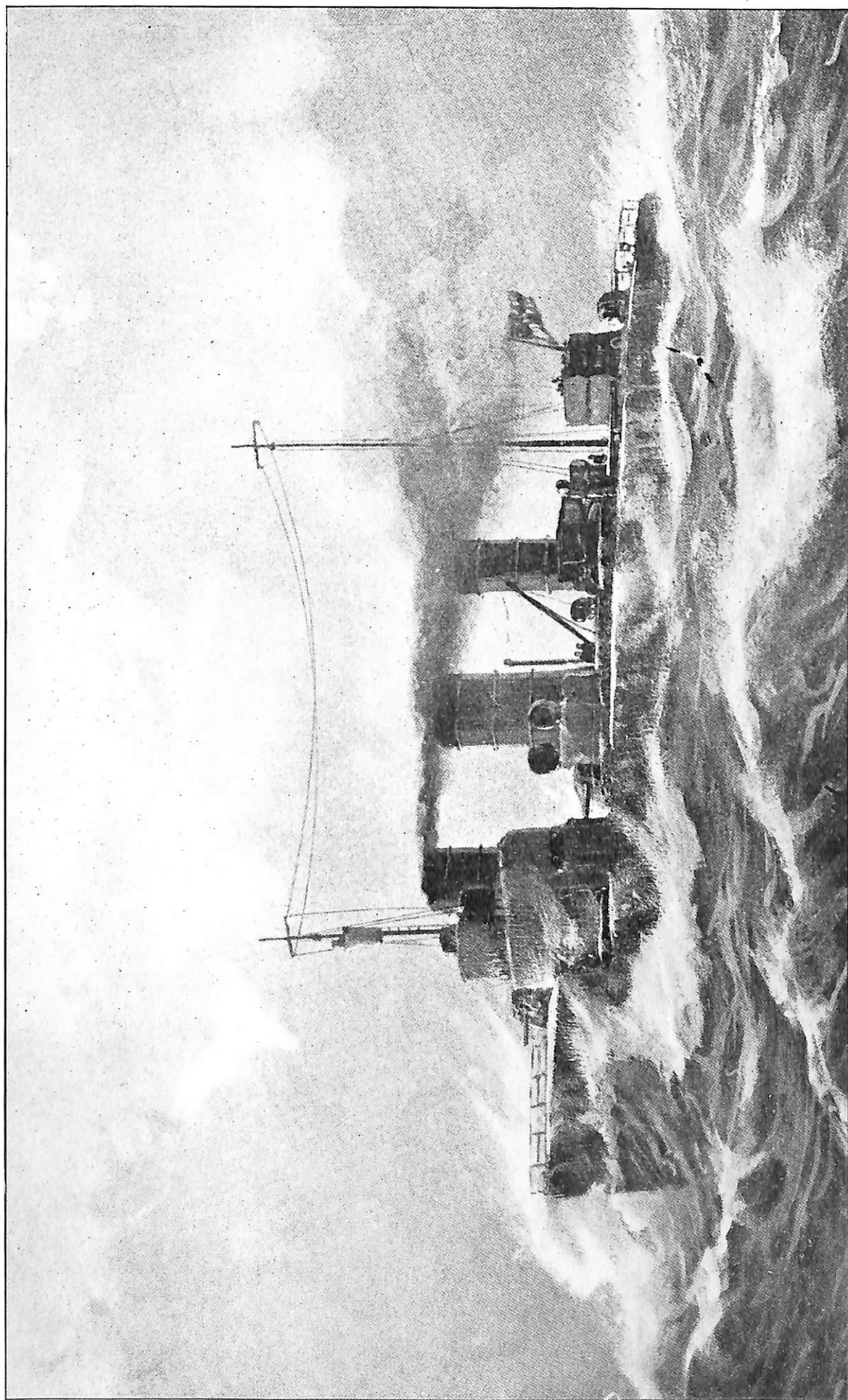
TORPEDO BOAT DESTROYERS V.1-6.



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TORPEDO BOAT DESTROYERS B. 97, B. 98, B. 109-112.

(From a rough sketch).



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**TORPEDO BOAT DESTROYERS G.101-104.**  
*Originally building for ARGENTINA.*

Scale  
 30 0 30 60 Feet

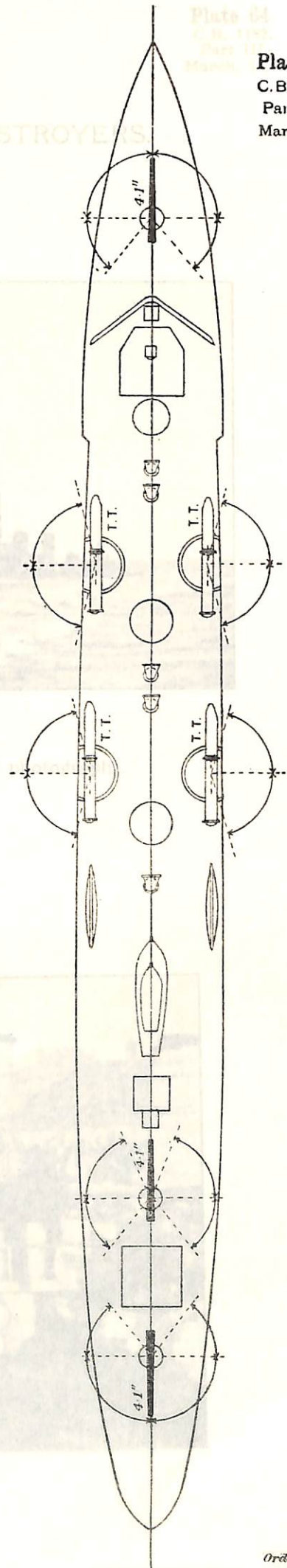
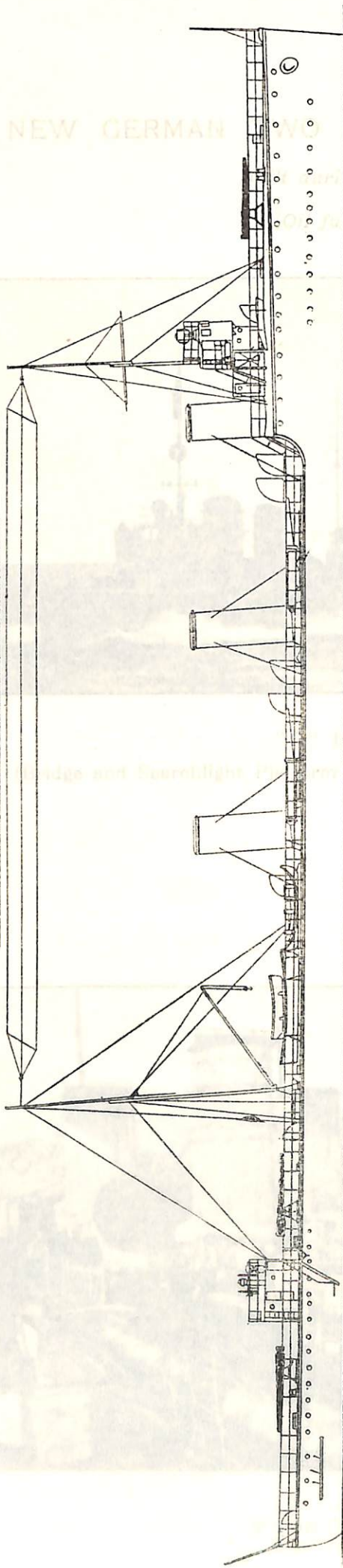


Plate 63  
 C.B. 1182.  
 Part III.

March, 1917.

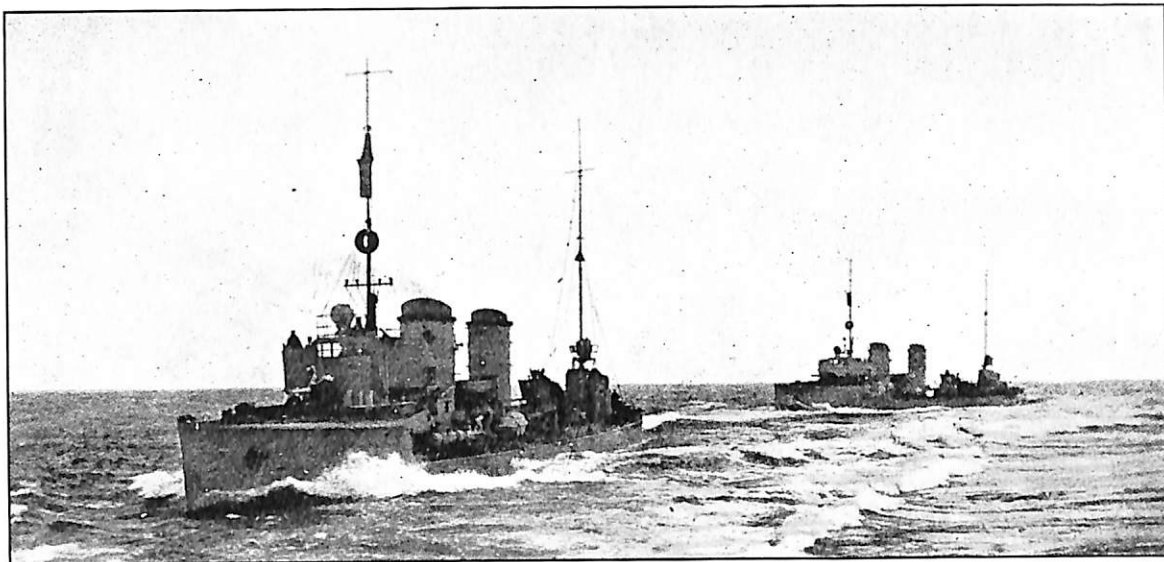
*Ordnance Survey, Marc.*

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## NEW GERMAN TWO FUNNEL DESTROYERS.

*Built during the War.*

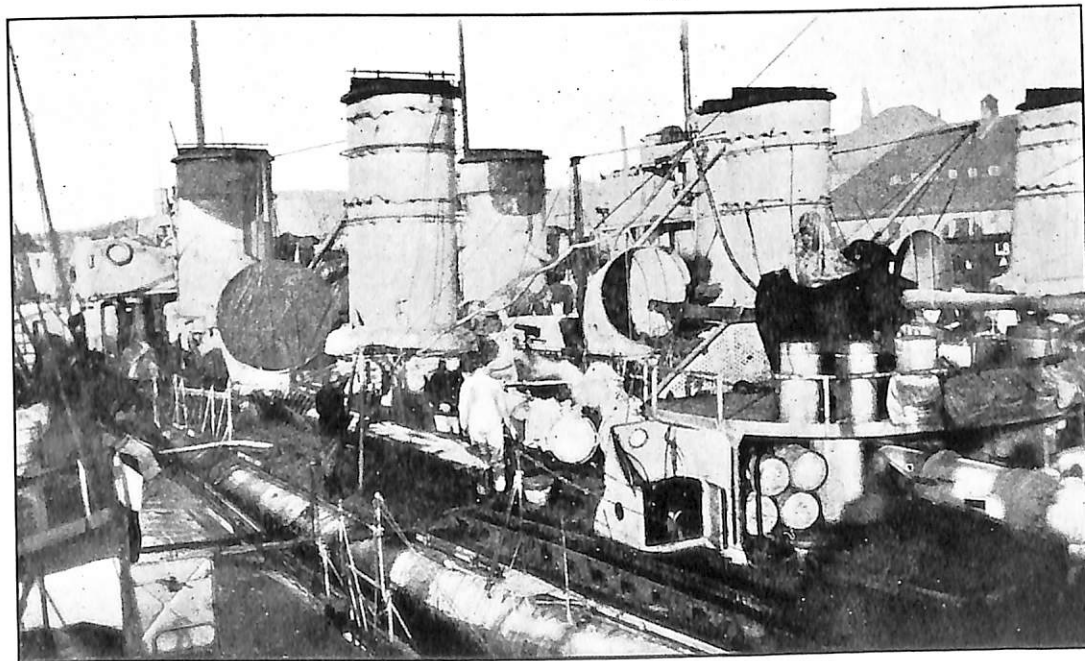
*(Oil fuel only).*



"G" BOATS.

(Bridge and Searchlight Platform raised since date of photograph).

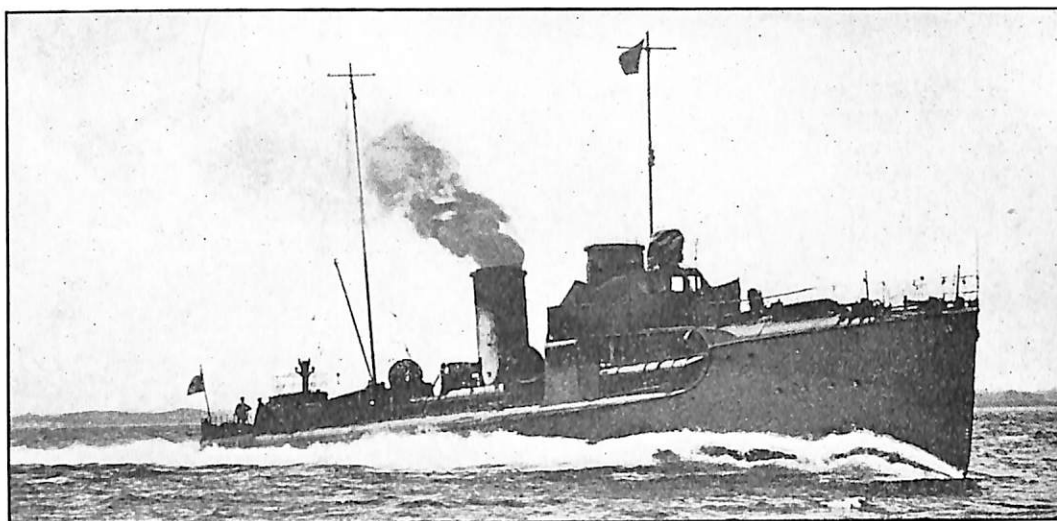
"V.73."



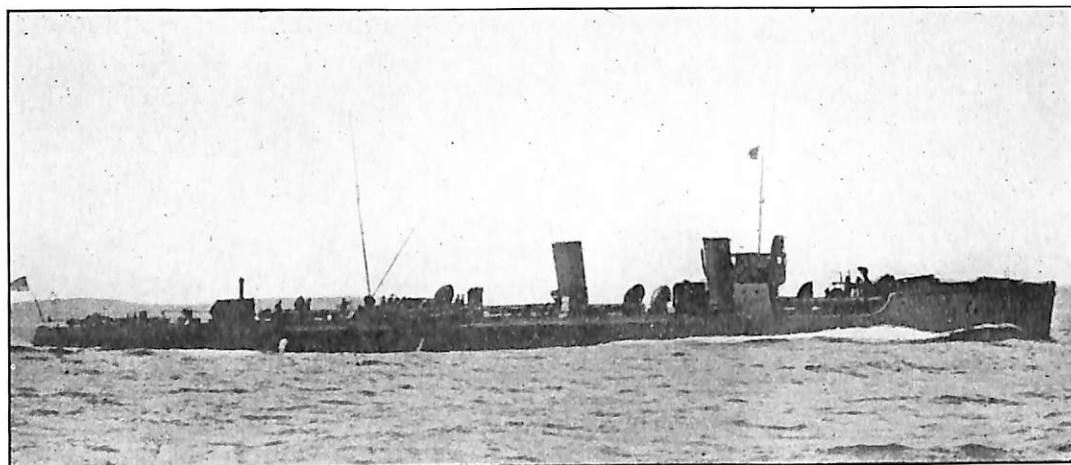
"V" OR "S" BOATS.

*Ordnance Survey, March, 1917.*

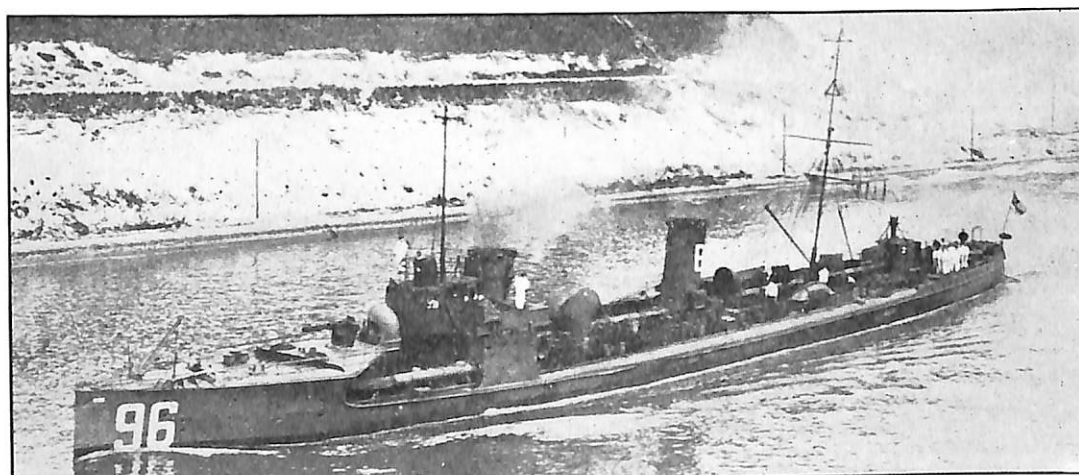
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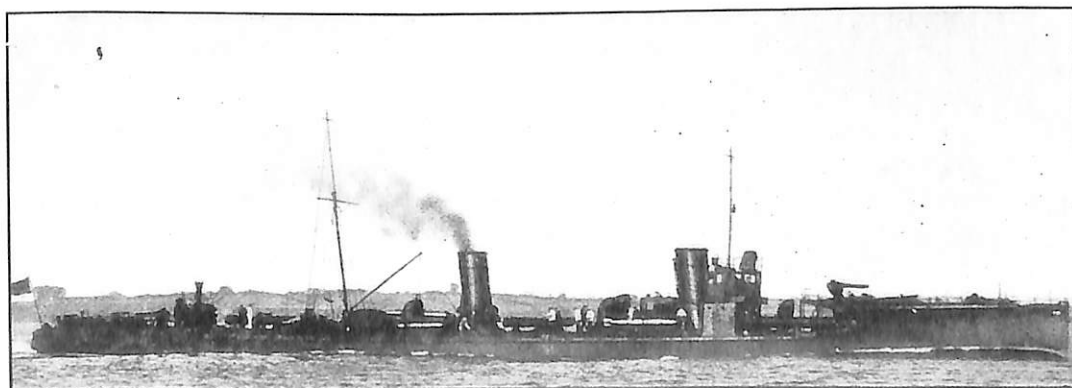
G. 8. (S. 13-24. G. 7-11. V. 1-6.)



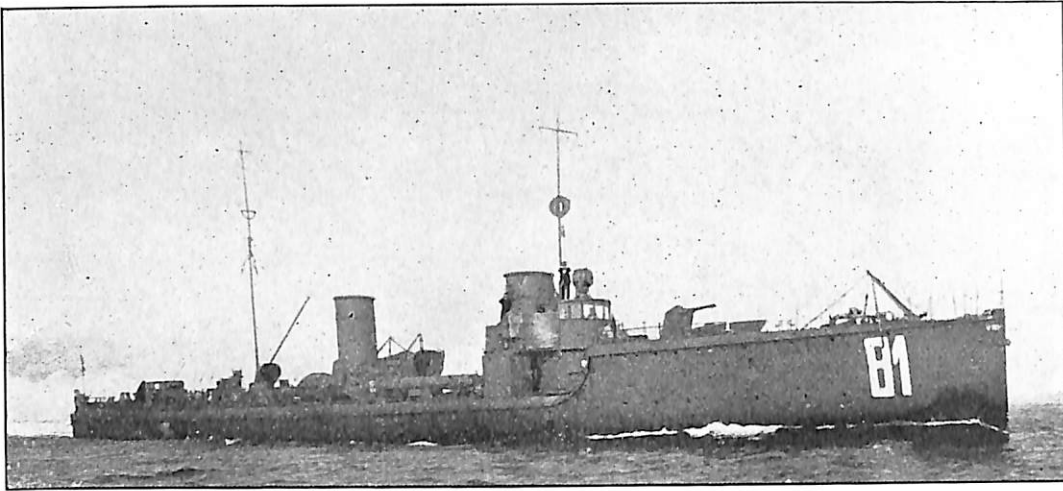
G. 7. (S. 13-24. G. 7-11. V. 1-6).



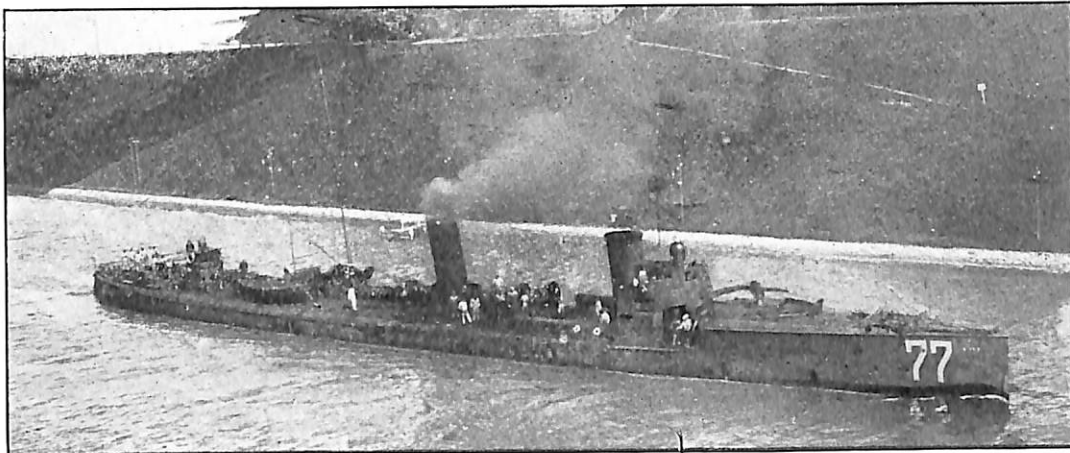
G. 196. (G. 192-197).



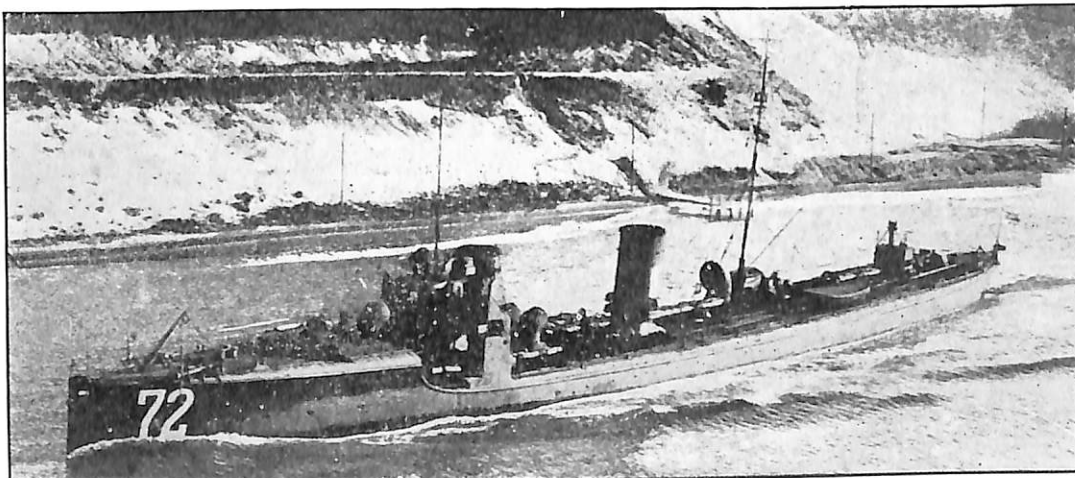
V. 186. (V. 186-191)



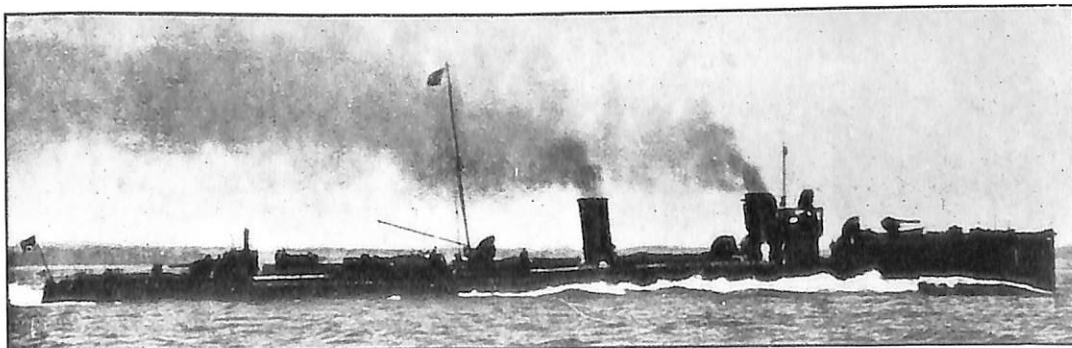
V 181 (V 180-185).



S. 177 (S. 176-179)

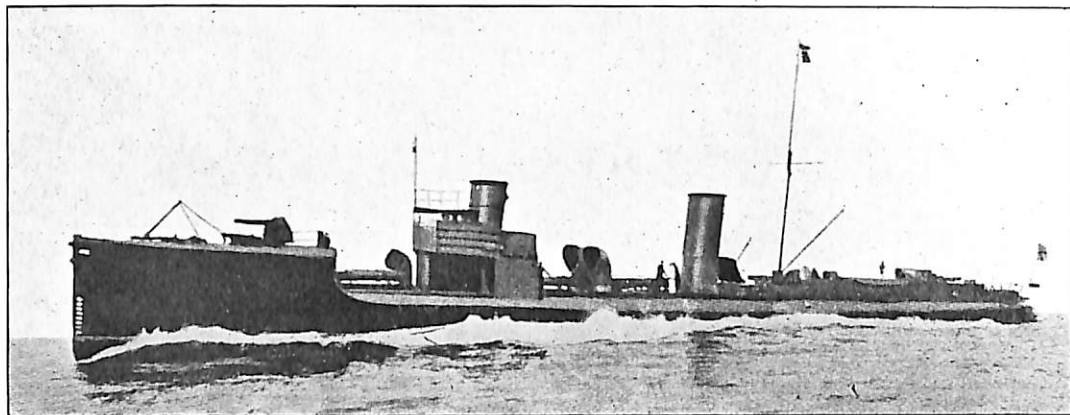


G. 172. (G. 169-173). (S. 165-168). (V. 162-164).

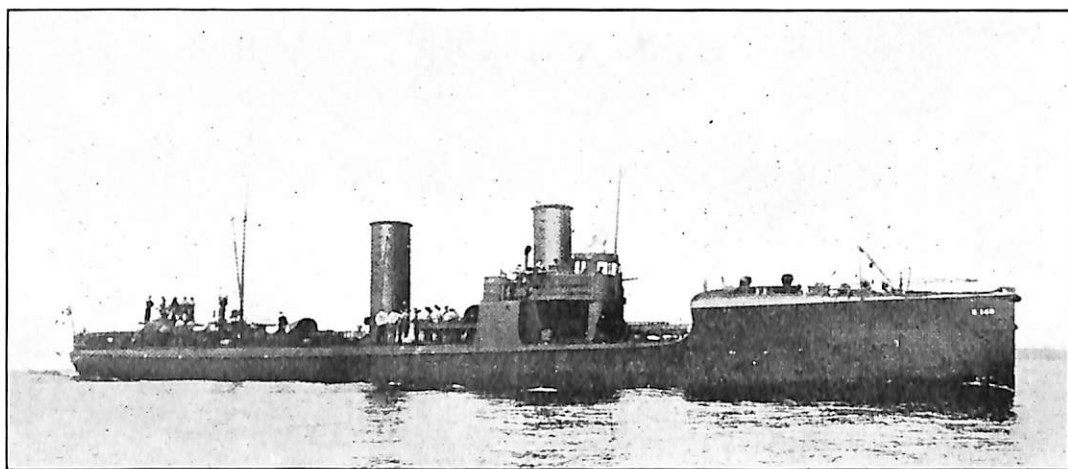


G. 170. (G. 168-173). (S. 165-168). (V. 162-164).

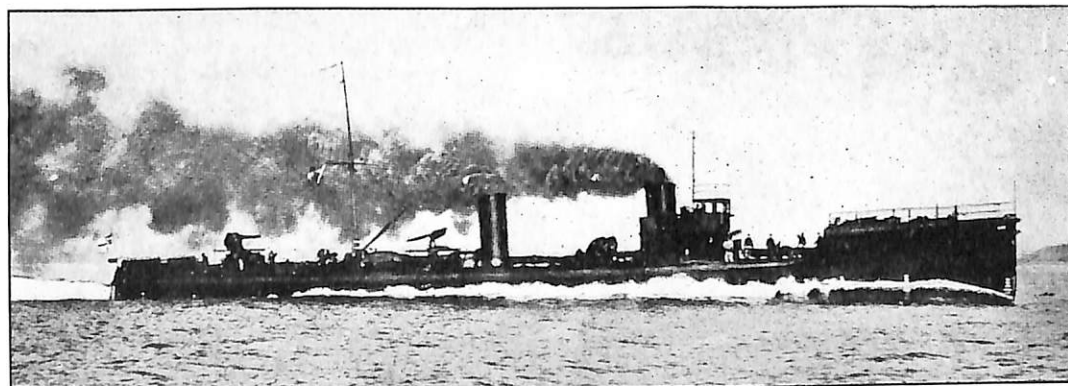




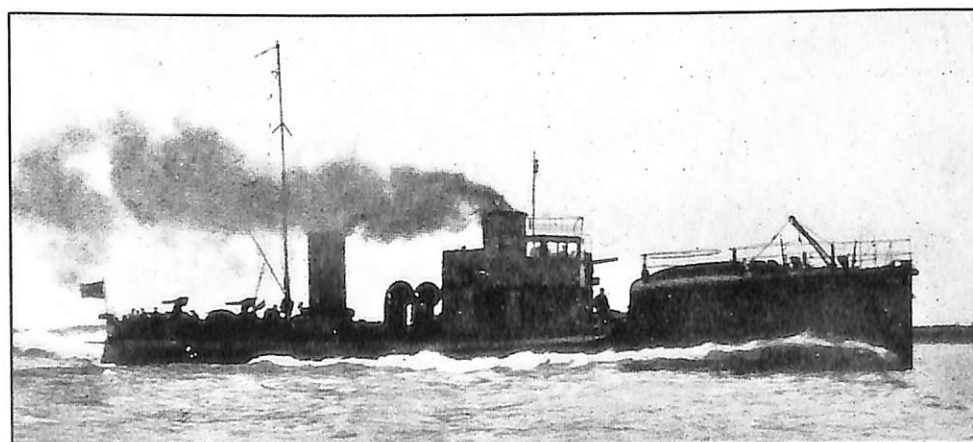
V. 151. (V. 150-161).



S. 149. (S. 138-149).



T. 137.

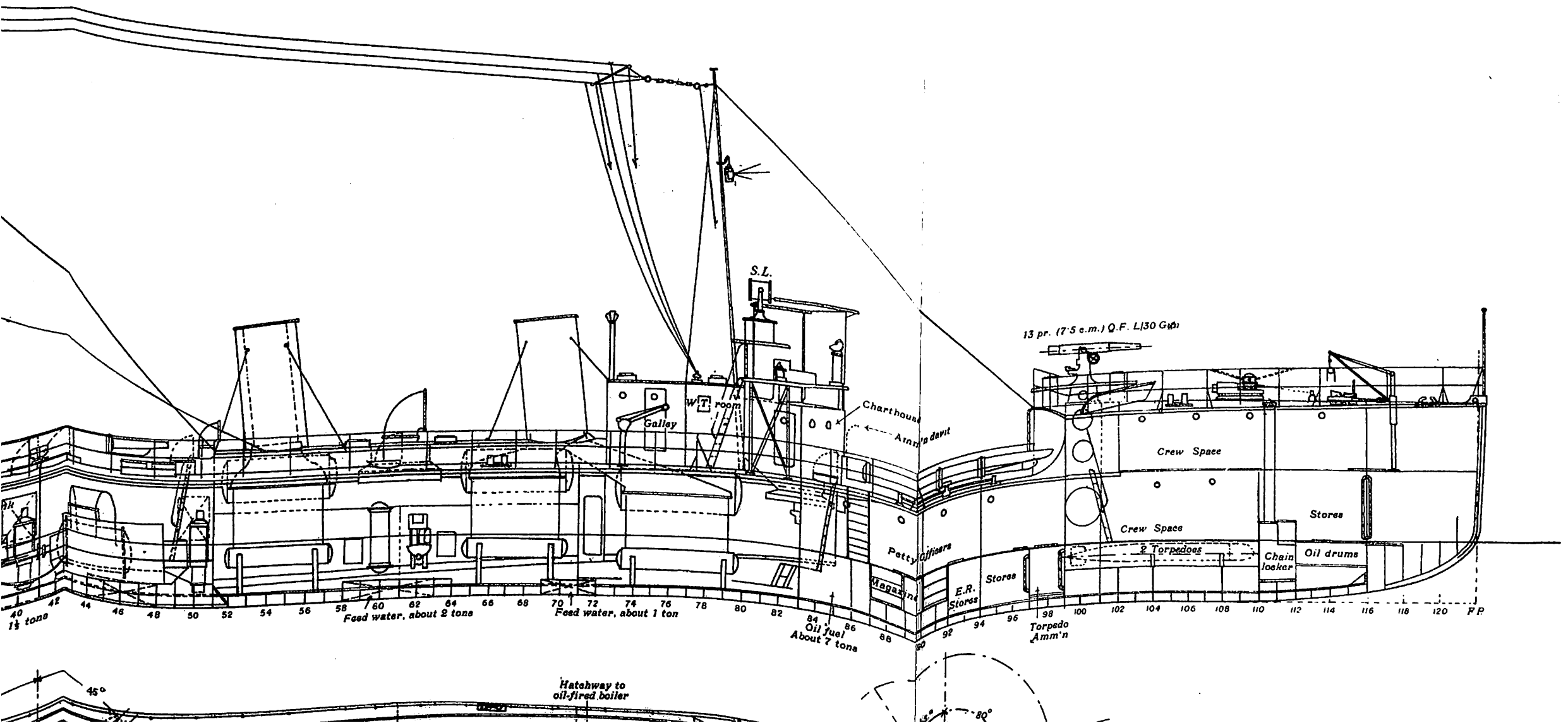


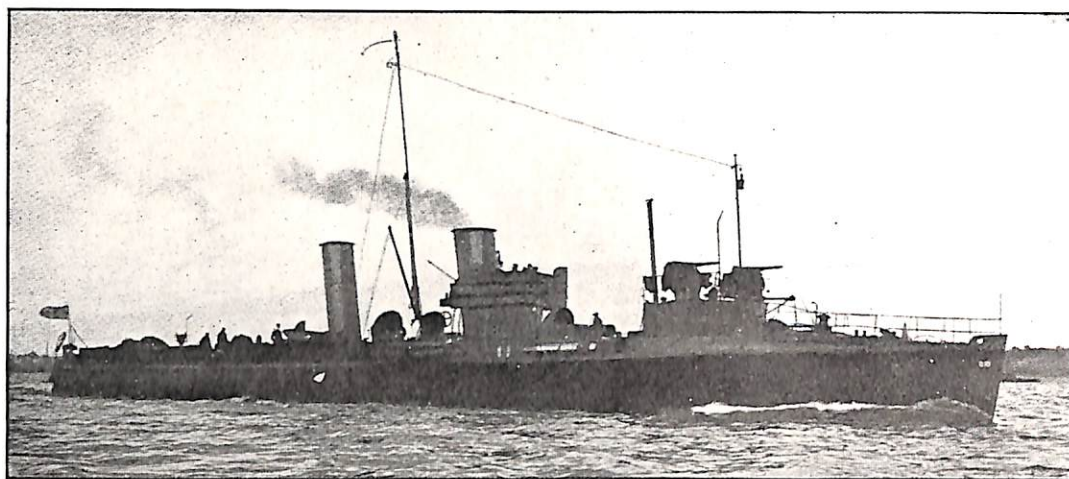
T. 134. (T. 132-134, & 136).

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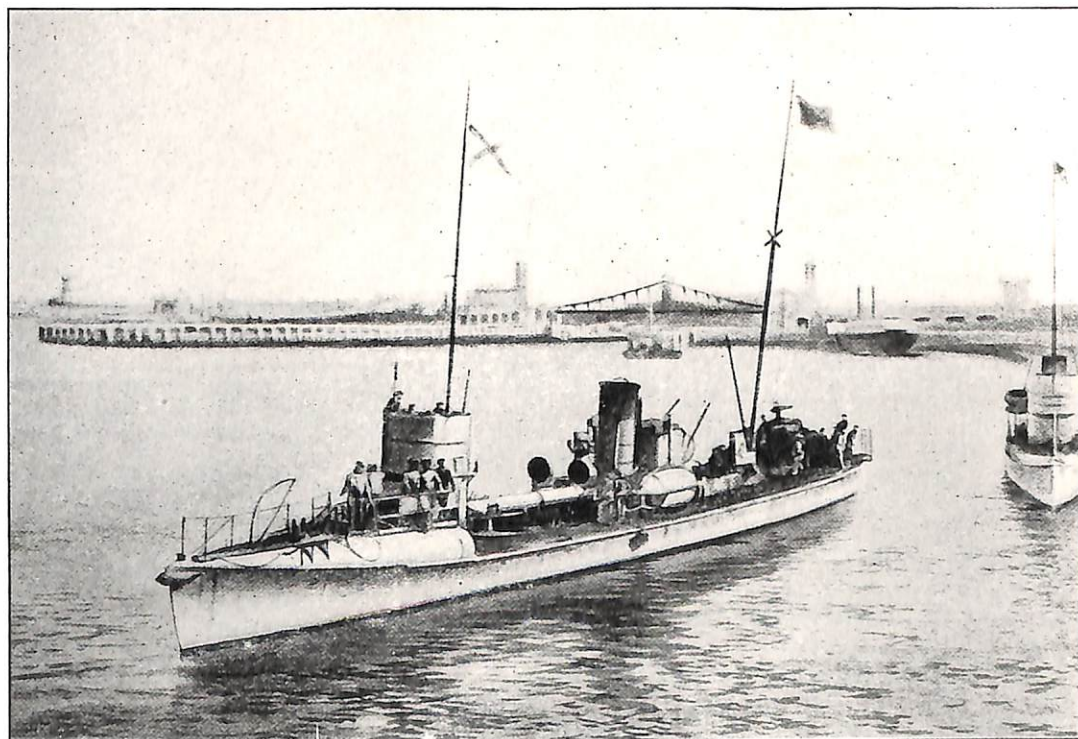
# TORPEDO BOATS (V. 105-108).

(Originally building for Holland).





D. 10.



NOTE:—In some of these Boats the Funnel has a Bell-Mouthed Top.

1.-14 Class.

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