

CHAPTER 31

AUXILIARY MACHINERY  
(PLATES VI-A & VI-B)

31-1 SHIP'S SERVICE GENERATORS:-

Two 100 KW A.C. plus 20 KW D.C. Ship's Service Diesel Generator Sets are furnished each vessel.

Each engine is directly coupled to its generator and the complete unit mounted on a welded steel common sub-base. The Diesel engines are complete with engine driven lube oil, circulating (fresh and sea) water and fuel transfer pumps, lube oil cooler, fuel and lubricating oil strainers and filters, fresh water cooling system and gauge board and wet type mufflers and L.O. low pressure contact makers.

The Diesel engines are arranged for electric starting with starting motor and switch.

The dimensions of the generator sets including sub-base is approximately as follows:

Length, over-all	-	11' - 06"
Height, over-all	-	6' - 00"
Width, over-all	-	3' - 08"

The Diesel generator sets are capable of operating at the following ratings:

Continuous Duty	-	150 BHP at 1200 R.P.M.
Emergency Duty	-	187.5 BHP at 1200 R.P.M.

The available combined kilowatt output of the 100 KW A.C. generator and 20 KW D.C. generator driven by each Diesel engine is commensurate with the above engine horse power ratings under all service duty conditions.

For further details regarding the Ship's Service Generator Sets see Instruction Book furnished the vessel.

The Ship's Service Generators are located in the engine room, compartment B-1, between frames 21 and 23.

For engine room layout, see PLATES VI-A & VI-B.

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31-2 RAMP & BOW DOORS:-  
(PLATES VII & VIII)

The Ramp is a built up section of steel plates and beams.

It is strong enough to handle the equipment carried aboard these vessels. The heaviest tank on board is approximately 49 tons.

An electric winch supplies the power to operate the ramp. If one wire is damaged or parted, winch will operate ramp with remaining wire.

For arrangement of sheaves and wire ropes and instructions see PLATE VIII.

The Bow Doors are made to open to permit the lowering of the ramp. The lower sections of the bow doors are hinged so that when open the lower sections pull up and when the doors close the sections drop.

A hydraulic system operates the doors. For arrangement and operation see PLATE VII.

31-3 ANCHOR WINDLASS AND CAPSTAN:-  
(PLATE VIII)

The windlass consists of a wildcat and capstan mounted concentrically on a vertical shaft and driven by an electric motor through reduction gearing. The windlass is equally operable in both directions and is capable of hoisting an anchor weighing 750 pounds from a depth of 60 fathoms on a 1-inch stud link chain at a rate of 30 feet per minute.

The capstan is capable of heaving in a 6-inch rope at about 60 feet per minute. It is arranged to be used while the wildcat is held stationary by means of a hand brake. An electric brake is also provided.

Power is supplied by a 440 volt, alternating current, electric motor, designed for reversing service and driving the mechanism through gearing.

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31-3 ANCHOR WINDLASS AND CAPSTAN:-

A speed control provides an "OFF" position; a "PICK-UP", a "LOW SPEED" and "HIGH SPEED" in each direction of rotation.

The Windlass and Capstan are located on the Superstructure Deck, port side, between frames 9 and 10.

For Windlass and Capstan layout see PLATE VIII, "Anchor and Ramp Handling Gear."

31-4 STERN ANCHOR WINCH:-  
(PLATE IX)

A single drum, Stern Anchor Winch, with a drum for spooling 150 fathoms of 1-1/4" wire rope anchor cable is provided. It is capable of operation in both directions.

Power is provided by a gasoline engine through a torque converter and suitable reduction gears. All are mounted on a common foundation.

The winch supplies a line pull of 50,000 pounds at a line speed of 3 to 6 feet per minute and a light line speed of 300 feet per minute.

The winch is provided with a friction brake and an additional friction brake for holding the output shaft stationary against the idling torque of the engine.

A gypsy head is provided on the winch which may be used for towing stalled tanks or vehicles or for other power uses.

The stern anchor winch is located on the Main Deck, port side, just aft of frame 29.

For further details of operation and layout see PLATE IX.

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31-5 STEERING GEAR MECHANISM:-  
(PLATE X)

The Steering Gear Mechanism is arranged as indicated on PLATE X. There are two steering stations, one in the pilot house and one in the steering engine compartment.

Power is furnished by a single electric motor through a wire rope quadrant mechanism. The power is adequate to put the rudders from 30° right to 30° left and reversed in not more than 25 seconds while vessel is travelling at maximum speed.

In case of power failure, arrangements are available so that one man can steer the vessel manually from the steering engine room.

The steering engine room is located in the Hold, port to starboard, compartment C-206E, just abaft of frame 29.

For further details of operation and layout see PLATE X.

31-6 DISTILLING PLANT:-

There is provided one 2000 gallon per day vapor type Kleinschmidt Still with vapor compressor and compressor motor. Water flows from the plant to ship's storage tanks by gravity.

The distilling plant is located in the engine room, B-1, between frames 23 and 25. (See PLATES VI-A & VI-B).

31-7 AIR COMPRESSORS:-

See Compressed Air System, Chapter 38.

31-8 REFRIGERATING PLANTS:-

There is a Refrigerating Plant for cold storage and ice making purposes. This plant consists of two one-half ton air cooled Freon-12 compressor units,

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31-8 REFRIGERATING PLANTS:-

and serve by direct expansion, the cold storage rooms, vegetables refrigerator, A-211-1A, and meat refrigerator, A-211-3A, and the ice cuber.

The compressor units, each with air cooled condenser, receiver and driving motor are mounted on a common bedplate and are located in the ice machine room in the Hold, port side, compartment A-211-2AE, between frames 17 and 19.

31-9 BOILERS:-

There is an Auxiliary Steam Boiler supplied to each vessel designed to supply 1500 pounds of saturated steam per hour at 35 pounds per square inch, gage steam pressure, with feed water temperature of 100° F. The boiler is designed for a pressure of at least 50 pounds per square inch. It is an oil fired water tube or fire tube type.

The burner or burners are electric motor driven rotary cup type.

The boiler is located in the boiler room, compartment C-101-1/2E, Main Deck, starboard side, between frames 24 and 26.

For further information concerning Main Auxiliary Machinery, see PLATES VI-A and VI-B.