

MAIN PROPELLING MACHINERY
(PLATES VI-A & VI-B)

30-1 GENERAL:-

Each vessel is powered by two main propelling Diesel engines equipped for marine service.

Two makes of Diesel engines are used on the LSM Class vessels:

- (a) The Fairbanks Morse, Model 38D8 1/8
- or
- (b) The General Motors, Model 16-278-A

30-2 FAIRBANKS MORSE DIESEL ENGINE:-

(a) This engine is used on the following vessels:-

Nos. 1-125, Nos. 126-141, Nos. 201-232,
Nos. 253-269, Nos. 310-331.

Each engine is equipped with hydraulic coupling and thrust bearing assembly for connecting directly to its propeller shaft. No reduction gear is furnished and propeller shaft rotates at engine speed less loss through hydraulic coupling.

The engines are vertical, ten cylinder, opposed piston, in line, compression ignition, solid injection, two cycle, fresh water cooled complete with the following equipment:

Pneumatically operated reversing mechanism, attached fuel oil, lubricating oil and circulating water pumps, including scavenging pump for discharging lubricating oil into sump tank and a fuel oil hand pump for priming. Fuel oil and lubricating oil filters and strainers. Engine circulating fresh water and lubricating oil coolers.

One wet type muffler for each engine.

Four air flasks are provided suitable for 600 p.s.i. working pressure and of sufficient capacity for starting each engine forty consecutive times.

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30-2 FAIRBANKS MORSE DIESEL ENGINE:-

(a) (cont'd.)

Unattached gauge boards.

(b) The over-all dimensions of each complete Diesel set including sub-base is approximately as follows:

<u>Length</u> , over-all	21'-04"
<u>Width</u> , over-all	4'-06"
<u>Height</u> (above lower crank shaft centerline to top of air intake silencer)	9'-11"
<u>Depth</u> (below crank shaft centerline)	2'-10"

(c) Weights (Dry)

Two F-M 10-cylinder, Model 38D8 1/8 engines with all attached accessories 66,400 lbs.

Two hydraulic couplings complete and propeller thrust bearings with shafts 13,928 lbs.

Two pneumatic propeller shaft brake assemblies 1,350 lbs.

One motor driven F.O. transfer pump 650 lbs.

One motor driven L.O. purifier complete with heater 1,100 lbs.

One motor driven D.O. purifier complete 850 lbs.

Two D.O. hand priming pumps 150 lbs.

(d) Each engine has the following rating:

Emergency Duty -- 1800 BHP at 800 R.P.M.
Continuous Duty - 1440 BHP at 720 R.P.M.

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30-2 FAIRBANKS MORSE DIESEL ENGINE:-

(d) (cont'd.)

For further details concerning the Fairbanks Morse Diesel engine, Model 38D8 1/8, see Fairbanks Morse Diesel Engine Instruction Book.

30-3 GENERAL MOTORS DIESEL ENGINE:-

(a) This engine is used on the following vessels:-

Nos. 142-200, Nos. 233-252, Nos. 270-294,
Nos. 295-309, Nos. 332-353.

Each engine is equipped with pneumatically operated reversing mechanism with propeller shaft thrust bearing for connecting directly to its propeller shaft. No reduction gear is furnished and propeller shaft will rotate at engine speed less loss through hydraulic coupling.

The engines are of the Vee, sixteen cylinder, compression ignition, solid injection, two cycle, fresh water cooled type complete with the following equipment:-

Attached fuel oil, lubricating oil and circulating water pumps required for operation of the engines and reversing mechanism, including lubricating oil scavenging pump for discharging lubricating oil into sump and a detached fuel oil hand priming pump.

Fuel oil and lubricating oil filters and strainers.

Engine circulating fresh water and lubricating oil coolers.

One wet type muffler for each engine.

Four air flasks suitable for 600 p.s.i. for air starting. Air for operating the airflex clutches is taken from these flasks.

Unattached gauge boards.

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GENERAL MOTORS DIESEL ENGINE:-

(b) The over-all dimensions of each complete Diesel set including sub-base is approximately as follows:

<u>Length</u> , over-all	22'-06"
<u>Width</u> , over-all	5'-00"
<u>Height</u> (above crankshaft centerline)	6'-06"
<u>Depth</u> (below crankshaft centerline)	2'-02"

(c) Weights (Dry)

Two General Motors, 16 cylinder, Model 16 278A Diesel engines direct connected to clutch reverse gear	89,800 lbs.
Engine accessories	16,315 lbs.
L.O. and F.O. pump and purifier equipment	2,573 lbs.

(d) Each engine has the following rating:

Emergency Duty	-- 1800 BHP at 800 R.P.M.
Continuous Duty	-- 1440 BHP at 720 R.P.M.

For further details concerning the General Motors Diesel Engine, Model 16-278A, see General Motors Diesel Engine Instruction Book.

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The Main Propelling Machinery is located in the engine room, compartment B-1, between frames 19 and 25.

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

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