

## MACHINERY AND EQUIPMENT

1. Ship Propulsion Engines: Those engines used aboard ship that will enable the ship to move by rotating a propelling device such as oars, paddle, wheels or propellers.
  - a) Typical propulsion used in the Navy:
    - 1) Steam turbine gear drive
    - 2) Gas turbine gear drive
    - 3) Diesel engines (GM-6, GM-12, GM-16, GM-32 and others)
2. Auxiliary Machinery and Equipment – Provides ship's smooth operation and personnel safety and comfort aboard ship.
  - a) Refrigeration plant – primarily used for food storage, water cooling, and ice making.
  - b) Air conditioning equipment – installed on naval ships for certain spaces where personnel efficiency, health, and safety on operation of equipment may be endangered by high temperatures or high humidity.
  - c) Distilling plants – used to supply fresh water for shipboard uses and boiler feed water.
  - d) Steering gears – there are two basic types of steering mechanisms used in the navy:
    - 1) Electromechanical steering gear – used extensively on small non-combatant ships.
    - 2) Electro-hydraulic steering gear – used extensively on large combatant ships.
  - e) Anchor windlass – a piece of deck machinery used primarily for paying out and heaving in an anchor chain.
  - f) Capstan – spool shaped, vertically mounted drum used for heaving in heavy mooring lines.
  - g) Lube oil purifier – normally located in the engine room, used to for contaminated lube oil, water, sediments and other impurities.
  - h) Air compressor – driven by electric motors commonly used for operating pneumatic tools, ejecting gas from ship's guns, starting diesel engines, charging and firing torpedoes, operating gun counter-recoil, providing pressures for the ship's horn.

### Types:

- 1) Low pressure compressor – has a discharge pressure of 150 psi or less
  - 2) Medium – has a discharge pressure of 151 psi to 1000 psi.
  - 3) High pressure compressor – has a discharge pressure of more than 1000 psi.
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- i) Cranes – are used to raise a load, lower and move it in horizontal direction. Used for handling airplanes, boats, bombs, torpedoes, minesweeping gears, missiles, trucks and stores.
  - j) Elevator – used to raise and lower a load. The same use as the crane, except that it cannot move in horizontal direction.
  - k) Winches – a piece of deck machinery that has a drum or drums on a horizontal shaft for handling loads with wire rope. In addition, cargo winches may be equipped with one or two gypsy heads fitted for handling manila rope.
  - l) Laundry Equipment – consists of washer, extractor combinations, dryers, various types of ironing and pressing equipment plus numerous miscellaneous items such as laundry marking machine.
  - m) Galley Equipment – food preparation and service equipment located in the galley and messing spaces aboard ship.

### Examples:

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|-------------------------|--------------------------|
| 1) ranges               | 7) coffee urns           |
| 2) ovens                | 8) toasters              |
| 3) deep fan fryers      | 9) steam jacketed kettle |
| 4) mixing machine       | 10) refrigerators        |
| 5) meat slicing machine | 11) dishwashing machine  |
| 6) cube steak machine   | 12) cooking utensils     |