

5-M DIVISION

The maintenance of the ship's main propulsion plant was the responsibility of 5-M Division. A twin screw, turbo-electric drive, propulsion plant furnished the 20,000 H.P. necessary to push the ship along at 25.5 knots. The source of all power aboard the ship was four, 600 p.s.i., 850° F. boilers installed in pairs, two in each of the machinery spaces. The superheated steam drove the 6850 K.W. main turbo-generators at 3600 R.P.M. producing a 60 cycle, 3 phase current, 3400 volts. The electrical power, thus generated, operated the two main motors. These motors were 60 pole, Y connected, synchronous motors. Each turbo-generator normally supplied only one motor.

Since the starting torque of a synchronous motor is exceedingly small, the two main motors were made, so that during the starting period, they acted as induction motors and consequently



Opening throttle valve on main turbine



Checking jacking gear on main motor

produced a large starting torque. When the motor is up to speed, it then acts as a synchronous motor.

A pressure-closed feed system was used on the ADMIRAL CAPPS. To complete the cycle of this system the steam leaving the main turbine was condensed in the main condenser and then pumped to the low pressure feed heater by the main condensate pumps. Here the condensate was heated and then discharged to the deaerating tank. In the deaerating tank the condensate was further heated and the oxygen was removed from the water. From the deaerating tank the condensate, now termed feed water, was pumped back into the boilers by the main feed pump, thus completing the steam cycle.