Manning the Engineering Plant

Fireroom at the Boiler Front (Saturated Side)

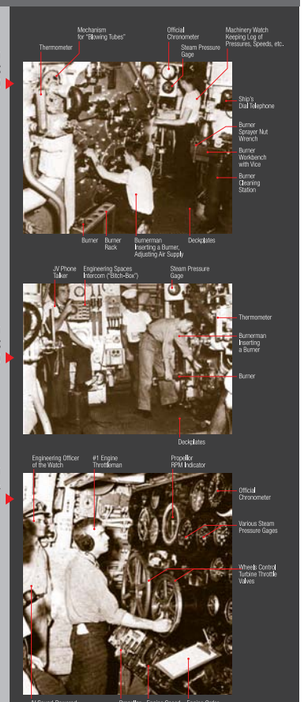
Each Fireroom has four burnermen, two forced draft air controlmen, who use periscopes for monitoring smoke; two upper level checkmen, who constantly monitor the boiler water level; a machinery watch, a JV phone talker, and the Chief of the Watch.

Fireroom at the Boiler Front (Superheat Side)

Engineroom at the Throttles & Gage Board

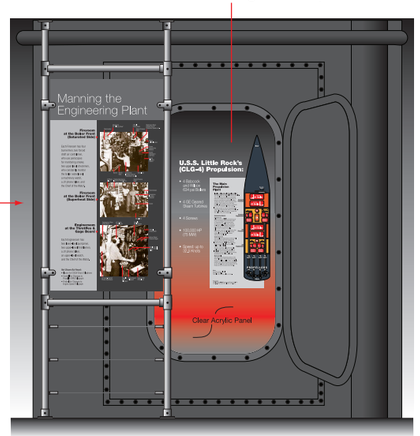
Each Engineroom has two lower-level pumpmen, two upper-level throttlemen, a JV phone talker, an upper-level watch, and the Chief of the Watch.

Not Shown But Heard:
- Klaxon for EOOW Ship's Telephone
- Cowbell for Changes to Propellor RPM Telegraph
- Fireball for Changes to Engine Speed Telegraph



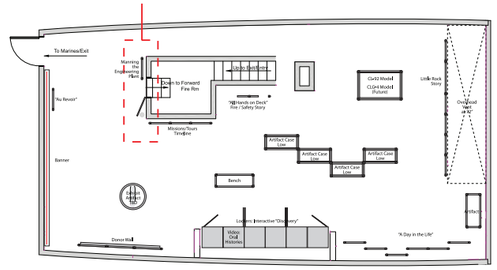
Graphic Panel Enlarged
(Not to Scale)

Digital Graphics and Vinyl Lettering Mounted to Clear Acrylic Panel



ELEVATION: 3/8"= 1'-0"

Area Shown In Elevation



FLOOR PLAN

U.S.S. Little Rock's (CLG-4) Propulsion:

- 4 Babcock and Wilcox 634 psi Boilers
- 4 GE Geared Steam Turbines
- 4 Screws
- 100,000 HP (75 MW)
- Speed: up to 32.5 Knots

The Main Propulsion Plant

Flow In a Closed Cycle Propulsion Plant
The same water is repeatedly used in this plant.

The water leaves the boilers as superheated steam and is piped to the turbines, where its energy is converted into mechanical energy through the turbines' shafts which go through reduction (Red'n) gears to turn the ship's propellors. The exhausted steam is condensed in the main condensor below the turbines.

It is then pumped up into the Deareating (DA) Feed Tank to become feed water for the boilers. Additional make-up feed water is brought into the cycle via the main condensor.

Engineering Spaces

Firerooms (2)
Boilers occupy two levels, and operate up to 634 psi to produce steam with about 360° of Superheat (850°), using forced draft air pressure for several burners, fed with pre-heated fuel oil. Uptakes are equipped with periscopes for monitoring smoke for boiler tenders to adjust air supply.

Boiler water comes from the Deareating (DA) Feed Tank, and the water level has to be constantly monitored by boiler tender stationed on upper level.

Engineerooms (2)
The Throttles and Gage Board provide control and monitoring of the High Pressure (HP) Turbines and Low Pressure (LP) Turbines located on the upper level. Main Reduction Gears occupy both levels with main lube oil filters on lower level.

The Main Condensor, along with several auxiliary pumps (not shown) occupy lower level. Also in the Forward Engineroom, an Emergency (Emerg'y) Diesel Generator serves as backup for Ship's electrical power.

Main Control:
The station of the Engineering Officer of the Watch is located in the Forward Engineroom.

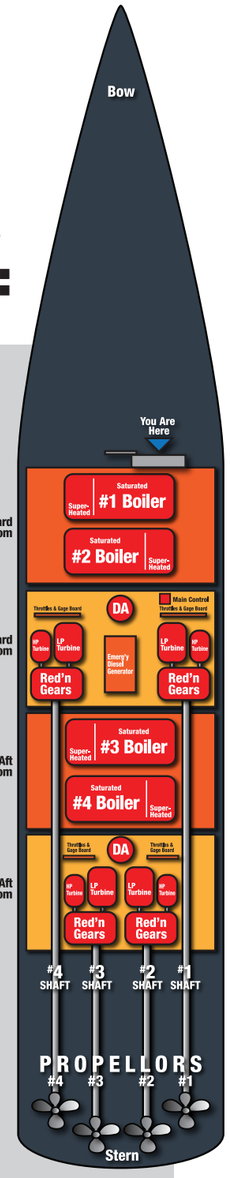
Readouts on all 4 propellors' RPM, critical valve positions, and steam pressures are presented for the Officer, Direct communications with the Bridge and other key areas are provided.

Forward Fireroom

Forward Engineroom

Aft Fireroom

Aft Engineroom



Notes:
Each space shown is 2-level.
Drawing not to scale.
Steam lines not shown, water lines not shown.

Prepared by
John R. Roberts, B-Div, Officer aboard USS Macon (CA-132) and M-Div, Officer aboard USS Little Rock [1959-1962]

GRAPHIC ENLARGED: 3"= 1'-0"

THINKING OUTSIDE THE SQUARE

1979 Harlem Road. Buffalo, New York 14212 Phone 716.891.7442 Fax 716.891.7424 www.thinkoutsidethesquare.com

Project

USS Little Rock Assoc.

Drawing Title

"The Engineering Plant" Revised

Drawing Number	LRA-100-5A
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Notes: