

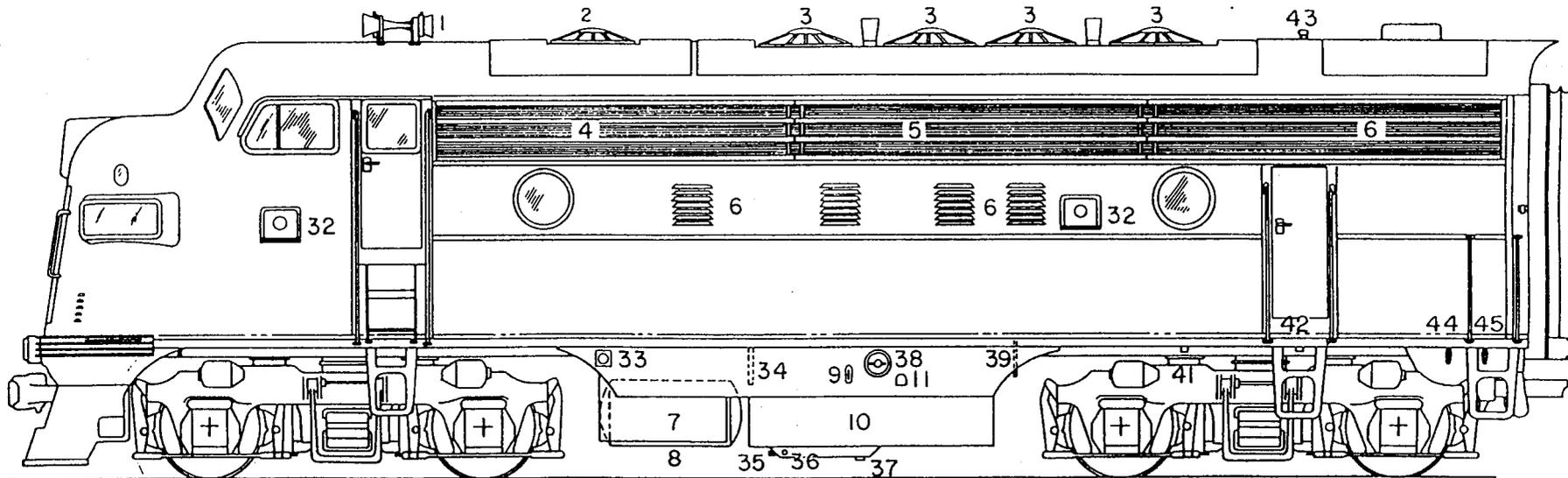


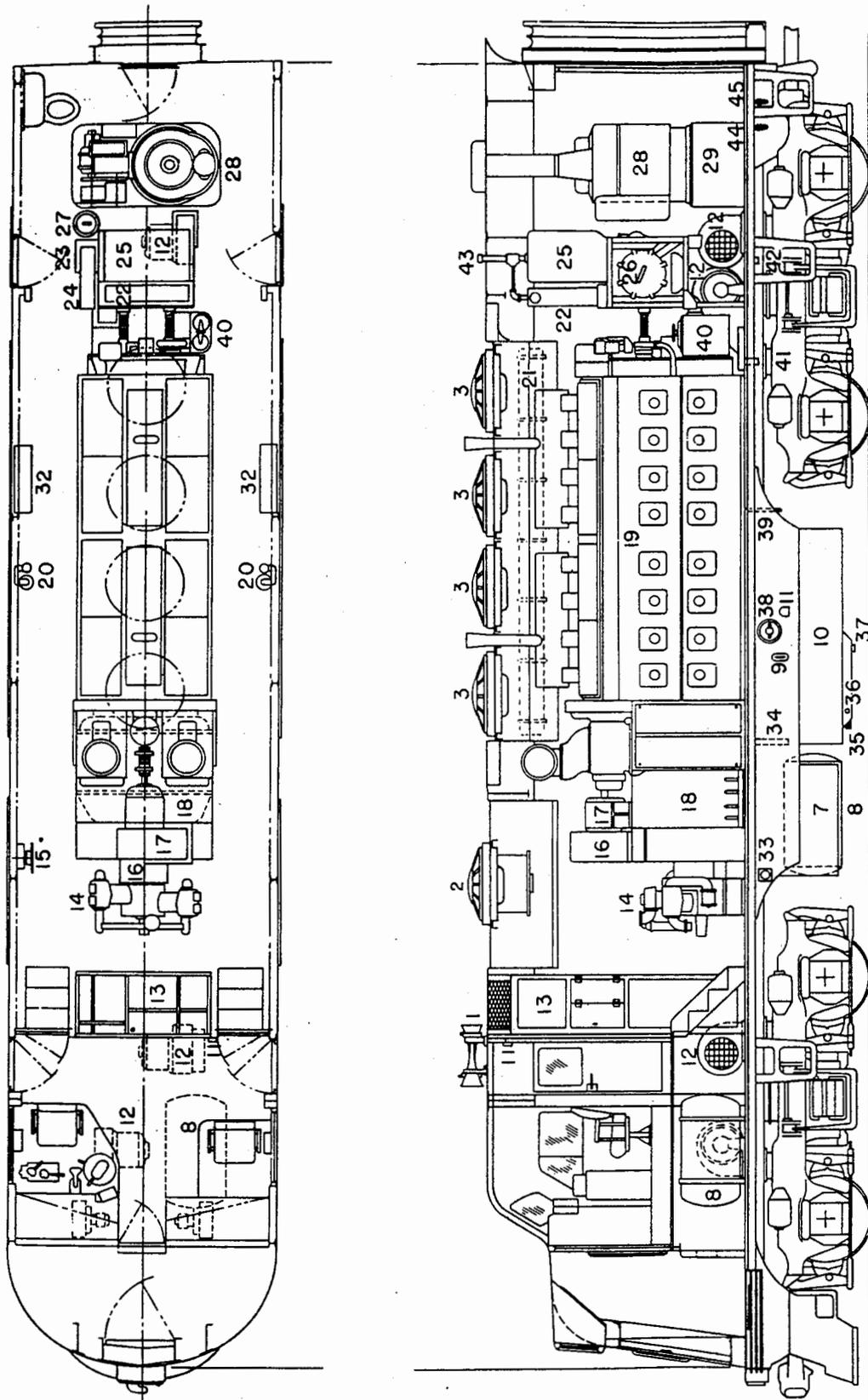
**PREPARING AND STARTING THE F7 LOCOMOTIVE**

**COURSE TAUGHT BY DAVE MCCLAIN - HEAD MECHANIC FRRS**

**MANUAL PLAGIARIZED BY DOUG JENSEN**

1. Horn ("A" Units Only)
2. Dynamic Brake Grids and Blowers
3. Cooling Fan and Motor
4. Air Intake for Grids and Engine Room
5. Air Intake and Shutters
6. Carbody Air Filters
7. Battery Box — Both Sides Under Carbody
8. Main Air Reservoir
9. Fuel Tank Gauge — Both Sides in Side Skirts
10. Fuel Tank — Under Carbody
11. Emergency Fuel Cutoff Pull Ring. On skirt, outside of fuel tank, both sides of unit. One pull ring in operating cab. ("A" Units Only)
- Emergency Fuel Cutoff Pull Ring. On skirt, outside of fuel tank both sides of unit. One ring on left engine room wall opposite engine governor. ("B" Units Only)
12. Traction Motor Blower
13. Electrical Control Cabinet
14. Air Compressor
15. Hand Brake
16. Generator Blower
17. Auxillary Generator
18. Main Generator and Alternator
19. Model 16-567B Engine
20. Fuel Tank Vent with Flame Arrestor
21. Radiator, Cooling
22. Lube Oil Cooler
23. Load Regulator
24. Engine Control and Instrument Panel
25. Engine Cooling Water Tank
26. Lube Oil Filter
27. Steam Generator Water Softener
28. Steam Generator — 1600 Lb. Capacity
29. Steam Generator Water Tank — 200 Gal. Tank with 1600 Lb. Steam Generator
30. Air Brake Equipment ("B" Units Only)
31. Steam Generator Water Tank for Large Steam Generators — 1200 Gal. ("B" Units Only)
32. Sand Box and Filler — Two on Each Side of Car
33. Battery Charging Receptacle — Left Side Only
34. Engine Air Box Drain — Both Sides Under Carbody, Valves at Each Side of Engine Under Oil Pan Handhole Covers Nos. 7 and 15.
35. Fuel Tank Water Drain Valves — Both Sides in Tank Sump
36. Fuel Tank Sump Drain Plug — in Tank Sump
37. Fuel Tank Drain Plug — in Bottom of Tank Sump
38. Fuel Filler — Both Sides in Side Skirt (2-1/2" IPS)
39. Engine Sump Oil Drain — Left Side, Valve and Drain Under Carbody
40. Lube Oil Filler
41. Engine Water Drain — Under Carbody, Valve Inside Carbody
42. Engine Oil Strainer Drain — Left Side Under Carbody, Valve Inside Carbody
43. Roof Water Filler (Engine) — On Roof of Car above Engine Cooling Water Tank
44. Steam Generator Water Tank Filler — Both Sides under Carbody at Rear of Car (200 and 300 Gal. Tanks Only)
45. Engine Water Filler — Both Sides Under Carbody at Rear of Car
46. Steam Generator Water Tank Filler — Both Sides — 1200 Gal. Tank ("B" Units Only)





General Arrangement, Drains and Fillers - "A" Unit  
 Chart A - Part 2

## STARTING ENGINES

1. Close all switches in distribution panel.
2. At engineman's station close "control" and "fuel pump" switches.
3. Place independent brake in full "application" position.
4. Check "PC" switch.
5. BE SURE REVERSER LEVER IS REMOVED FROM CONTROL STAND.
6. Check engine lube oil and water levels and oil level in governor and air compressor.
7. Test signal alarm system by placing isolation switch in "Run" position momentarily. Blue light should light and bells should ring.
8. If engine has been shut down for more than two hours, open cylinder test valves, pull lay shaft closed and press "START" button on engine control panel. Crank engine over a few revolutions. If water was discharged from cylinders investigate, if not, close test valves and proceed.
9. Turn on fuel pump switch and check for fuel flow through sight glass on fuel filter nearest engine (mounted on the right side of the engine).
10. Check setting of overspeed trip (pull to set).
11. Check governor oil alarm trip button.
12. Hold layshaft one quarter open.
13. Press engine start button until engine starts (not more than fifteen seconds).
14. Check oil pressure.
15. Check ground relay.
16. Check starting contactor interlocks.
17. Idle engine until water temperature comes up to green area before working engine.
18. Place isolation switch in "Run" position (down).

## STOPPING ENGINE

1. Place isolation switch in "start" position.
2. Push engine "stop" button in and hold until engine stops.
3. Place fuel pump switch in "off" position.
4. Open cylinder test valves on engine (if more than two hour layover).

## SECURING LOCOMOTIVE AT ENGINEMAN'S CONTROL STATION IN PREPARATION FOR LAYOVER

1. Place transition lever in off position.
2. Place reverse lever in "neutral" position and remove lever from controller.
3. Open all switches in push button control box and distribution panel (after engine has been stopped).
4. Release air brakes and set hand brake. As an added precaution against locomotive moving, block the wheels.

## NORMAL OPERATION

It is strongly recommended that the items listed below be checked thoroughly and without omission, for carelessness is most often the cause of road failures which cause unnecessary delays.

### PRELIMINARY

#### When Boarding the Locomotive

- A. Inspect exterior of locomotive and running gear for:
1. Liquids leaking from the locomotive.
  2. Loose or dragging parts.
  3. Proper positioning of angle cocks and shutoff valves.
  4. Observe brake cylinder piston travel, if air brakes are set.
- B. In the engine room with engines running, the following check is to be made in all units.
1. Check for oil, water, and fuel leaks.
  2. Check gauges, indicators and switches as listed in figure 2.1.
  3. Check position of transition cutout switches. They should be pinned or sealed in the position in which the locomotive is to be operated, all in "MAN" or all in "Auto."
  4. Drain condensation from air brake system.
  5. Check position of "Controlled Emergency Cock" on the D-24 control valves in all "B" units. The position of this cock should correspond with the setting of the Rotair valve in the operating cab, either "FRGHT" OR "PASS."
  6. In cab of trailing "A" unit, set Rotair valve in proper "LAP" position and see that brake valve is properly cut out.
  7. When returning back through each unit, check and release hand brake in each unit.

Note: It is good practice to check battery ammeter in the distribution panel on each unit to see that the auxiliary generator is charging.

#### C. In The Cab

1. Check brake valve cut-out cock and Rotair valve position ("FRGT" or "PASS" as desired - "PASS" recommended for running light).
2. Install reverser lever, move to desired direction, either forward or reverse.
3. Place manual transition lever in No 1 position.
4. Push in "generator Field" switch.

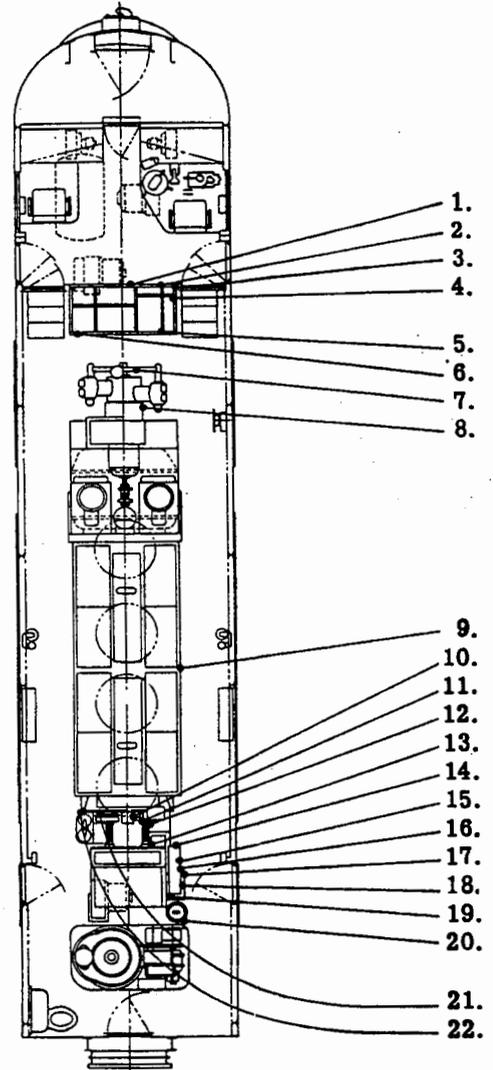
ENGINE ROOM CHECK CHART

Item	Reading		Ref. Art. No.	Unit Failure Check
	Idle	800 RPM		
1. Aux. Gen. Ammeter	20	20+	318	B
2. Starting Contactors	Not Stuck St. Position		319	X
3. Control Air Pressure	80 - 3		320	X
4. Battery Ammeter	0 or +	0 or +		
5. Ground Relay	Yellow		322	X
6. Main Reservoir	130 to 140			
7. Air Comp. Intercooler	80# When Pumping			
8. Air Comp. Oil Pres.	5#	15#		

**FAILURE CHECK.** Should a unit fail to perform properly check items lettered as "X." The letters R, B, YB, indicate items that will cause Red, Blue, or Yellow and Blue lights to come on. See Art. 311 for details.

9. Lube Oil Level	Run Level		401	
10. Eng. Speed & Fuel Ind	Needles as in Fig. 6-11		323	X
11. Gov. Oil Level	Between Lines			
12. Water Pressure	0 to 5	25 to 35		R
13. Water Temperature	125° Min.	165° - 15°	400	R
14. Isolation Switch	"RUN"		324	X
15. Lube Oil Pressure	6# Min.	30# to 45#	129	YB
16. Fuel Supply	As Needed			X
17. Load Regulator	Same as other units		325	X
18. Lube Oil Suction	Green		129	YB
19. Water Level	Between Lines		400	R
20. Gen. Water Supply	As Needed			
21. Overspeed Trip	Latched (Pull to Set)		327	B
22. Fuel Flow	Thru Glass Nearer Engine		326	X

Fig. 2-1



Location Of Gauges Relays And Equipment  
Fig. 2-1