

are identified as the R-End and F-End trucks. The R-End trucks have a single automatic leveling valve and piping while the F-End trucks have a double automatic leveling valve and piping system. The R-End trucks also have parking brakes while the F-End trucks do not.

**7-1.2. Air Suspension Subsystem (Figure 7-3):** The air suspension subsystem maintains a car floor height of 40 inches above the rail under various car loadings by automatically varying the air pressure in the air springs.

The car is supported on four air springs located between the truck frames and Bolster. Air for the air springs is supplied thru auxiliary tanks from the air subsystem. The air springs are interconnected on the R-End truck. On the F-End truck, the bags are pressurized from dual reservoirs.

The automatic leveling valves are mounted on the Bolster and the linkage is connected to the sideframe. Raising the end of the arm upward opens the valve and allows air to enter the spring system. Lowering the end of the arm vents the springs to the atmosphere.

**7-1.3. Truck Specifications.**

Truck Designation	H=high speed (over 70 mph) P=parallel drive D=disc brake 4=fourth version
Truck Swivel	Sidebearing Pad and Carbody Centerpin
Suspension	Firestone No. 29C Air Springs (modified).
Damping	Houdaille Adjustable Shock
Equalization	Self-aligning Ball Joints
Sideframes	Cast Steel ASTM A27 65-35
Bolster	Fabricated Steel USS Ex-Ten 50 and Cast Steel ASTM A27 65-35
Wheels	28" diameter, steel with modified cylindrical tread
Axles	AISI, 5150 steel tube Grade F
Journal Bearings	Timken 6x11 (modified)
Brakes	Disc Type
Motors and Drives	General Electric A.C. Electrical Parallel Drive (Reference chapter 3)
Track Gage	4' - 8-1/2"
Truck Wheelbase	7' - 3"

Truck Weight (less Motors, Gear Units, Brake Disc, Ground Ring)	6,854 lbs
Truck Weight (complete)	12,200 lbs
Truck Height	32-1/2" nominal operating height above rail
Truck Width	45-1/4" journal centers, (inboard)
Leveling Valves	Westcode

## 7-2. THEORY OF OPERATION.

**7-2.1. Truck:** The truck body as a physical unit is described in 7-1. Detailed theory of operation covering traction motors, the gear units, gear unit coupling, speed sensors and brake discs which are subassemblies of the truck may be found in Chapters 3 and 4.

**7-2.2. Air Suspension Subsystem:** The car pneumatic system is connected by two flexible hoses to each truck. One is connected to the car's main air system. The other leads to a carbody mounted auxiliary tank. The auxiliary tank is designed to provide sufficient air volume for a soft ride. Whenever the Bolster is depressed the level valves open to allow additional air from the supply to increase the pressure in the bellows and auxiliary reservoir. If the Bolster is raised, the level valve permits the air bellows to exhaust the excess air. Raising or lowering the Bolster occurs whenever the passenger load is changed. The leveling valves are damped so as to be insensitive to dynamic motion of the Bolster due to road shocks. In the event of an air bag failure, the leveling valve will limit the air flow to 14 scfm.

## 7-3. DETRUCKING PROCEDURE (Married Pair).

**WARNING:** THE FOLLOWING DETRUCKING PROCEDURES APPLY ONLY TO CARS ISOLATED FROM THIRD RAILS IN THE MAJOR REPAIR SHOP. IF CAR IS ON THIRD RAIL, ISOLATION PER CHAPTER 5 IS MANDATORY.

**CAUTION:** VERIFY TRUCK CUT-OUT VALVE IS IN CUT-OUT POSITION. NO ASSEMBLY OR DISASSEMBLY IS TO BE PERFORMED ON ANY AIR SUSPENSION SUBSYSTEM COMPONENT UNLESS ALL AIR PRESSURE IS BLED FROM THAT PARTICULAR TRUCK.

- (a.) Remove cars from contact with third rail and all external power sources.
- (b.) Open knife switch on both cars.
- (c.) Open circuit breakers in Operator's Circuit breaker panels leaving BDCB28 (37 volt bus) until last.
- (d.) Open KPCB 1 (Converter) and KPCB 2 (Battery Output) circuit breakers in Auxiliary Circuit Breaker Panel (B-Car only).
- (e.) Open all remaining circuit breakers in Auxiliary Circuit Breaker Panel (both cars).