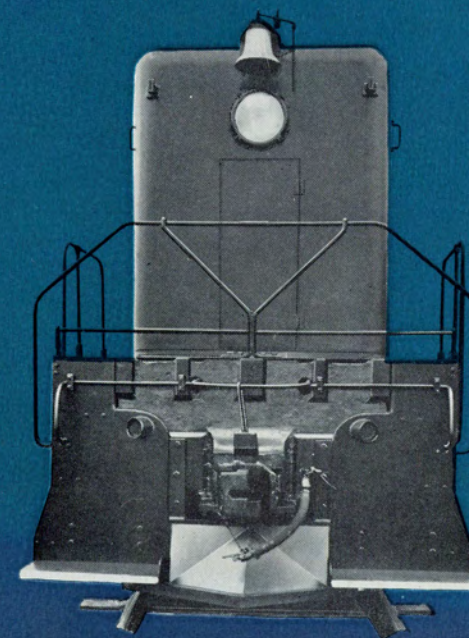




THE BALDWIN LOCOMOTIVE WORKS • PHILADELPHIA, PENNA.

the answer to your heavy haulage problem



BALDWIN- Westinghouse

DIESEL-ELECTRIC LOCOMOTIVES FOR ROAD SWITCHING AND TRANSFER SERVICE

Baldwin offers a complete line of diesel-electric locomotives including: 750-hp. and 1,000-hp. switching locomotives; 1,000-hp. and 1,500-hp. road switching locomotives; heavy-duty 1,500-hp. road switching locomotives; 2,000-hp. transfer locomotives; and 1,500-hp. diesel-electric units for main line operation.

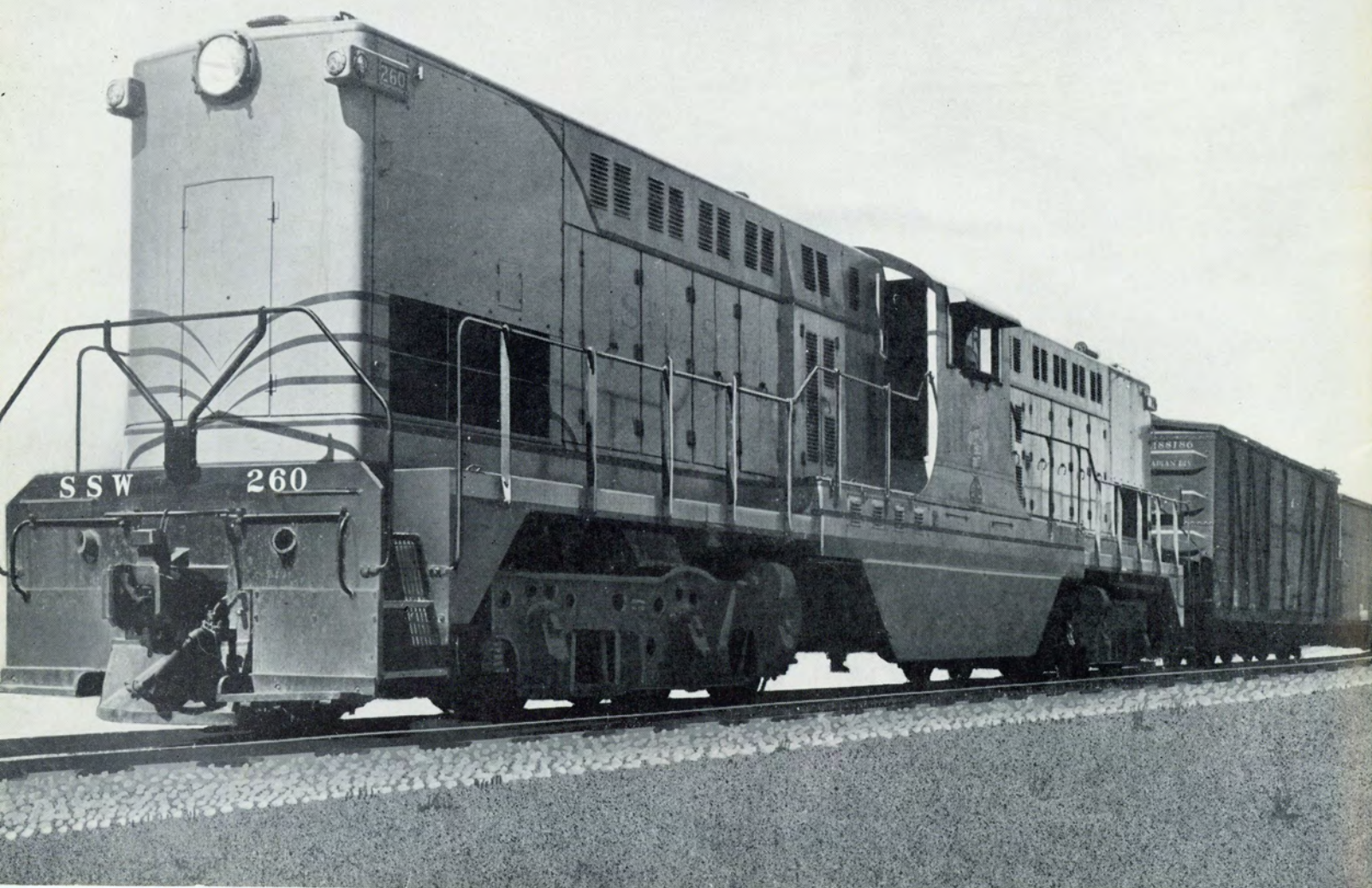
This bulletin describes two of the above locomotive types designed especially for road switching, transfer, hump yard and similar services calling for unusually high continuous tractive effort in the low-speed ranges: (1) a 1,500-hp. Diesel-Electric Road Switching Locomotive; (2) a 2,000-hp. Diesel-Electric Transfer Locomotive.

Designed and built by an organization that has specialized in railroad motive power for more than a century, these modern diesel-electrics are establishing excellent records for hauling capacity, flexibility, economy and rugged dependability.

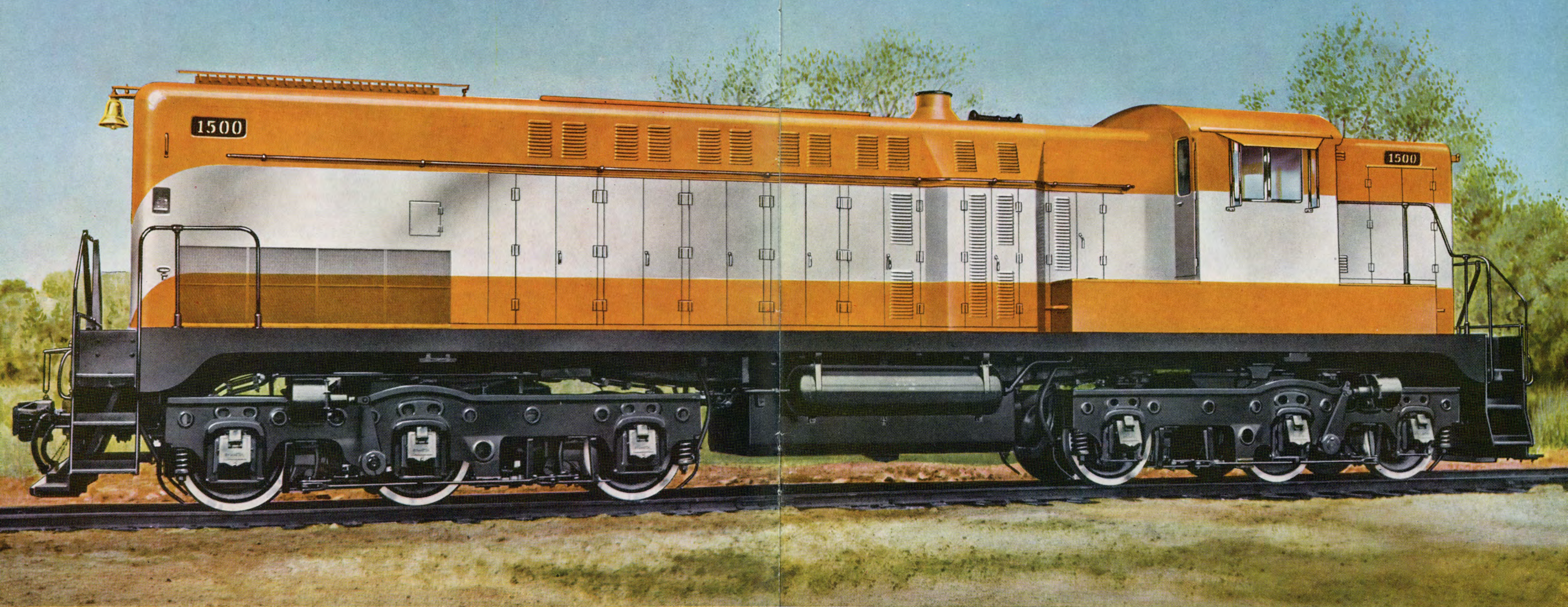
An outstanding feature of both types is that each is equipped with six heavy-duty traction motors, one on each axle of two six-wheel trucks, *giving these locomotives the highest tractive effort rating of any single-unit diesel-electric now on the market.*

If you have a heavy, moderate-speed hauling problem on your road, you will be interested in the details of these two outstanding Baldwin locomotive types.

THE BALDWIN LOCOMOTIVE WORKS • PHILADELPHIA 42, PA., U. S. A.



BALDWIN 1500 hp DIESEL-ELECTRIC ROAD SWITCHING LOCOMOTIVE



The 1,500-hp. Road Switching Locomotive is specifically designed for hauling heavy tonnage at low speeds. Its relatively low weight per axle, short wheel base and over-all dimensions recommend it for situations where limited rail loading, short radius curves and limited clearances are factors. The use of six heavy-duty traction motors—one mounted on each axle of the two 6-wheel trucks—insures maximum tractive effort and makes the entire weight of the locomotive available for adhesion.

Power is provided by one Baldwin 1,500-hp., 4-cycle, 8-cylinder, supercharged diesel engine, direct connected to a Westinghouse generator.

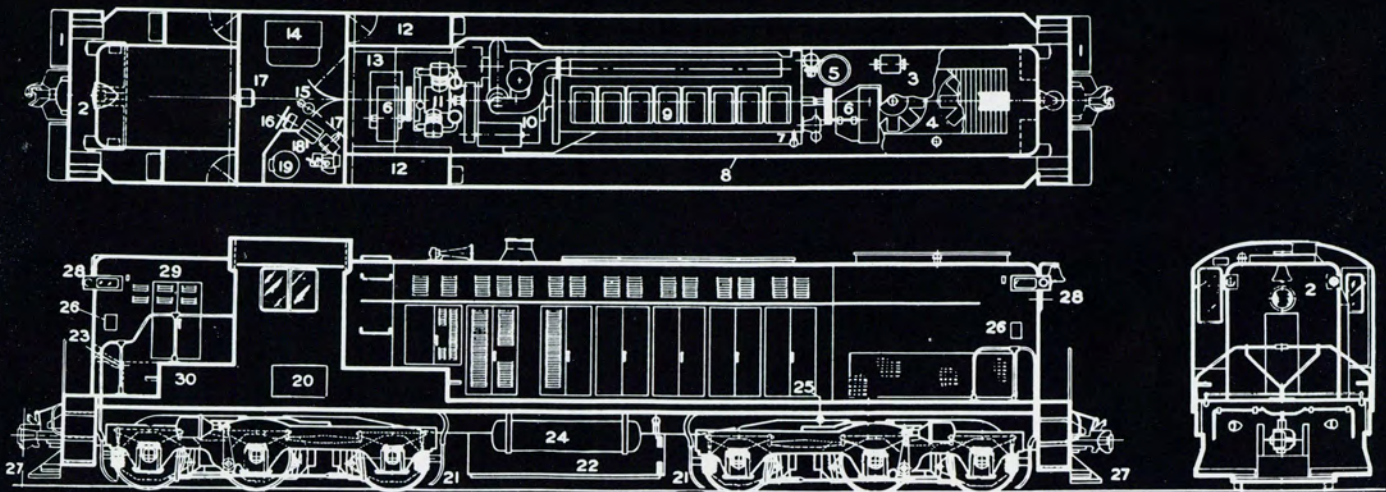
Simplified air throttle control and permanent motor hook-up—with no transition device—insures ease of operation and smooth acceleration.

Ample cooling is provided for engine water and lubricating oil. An electrically operated fan and

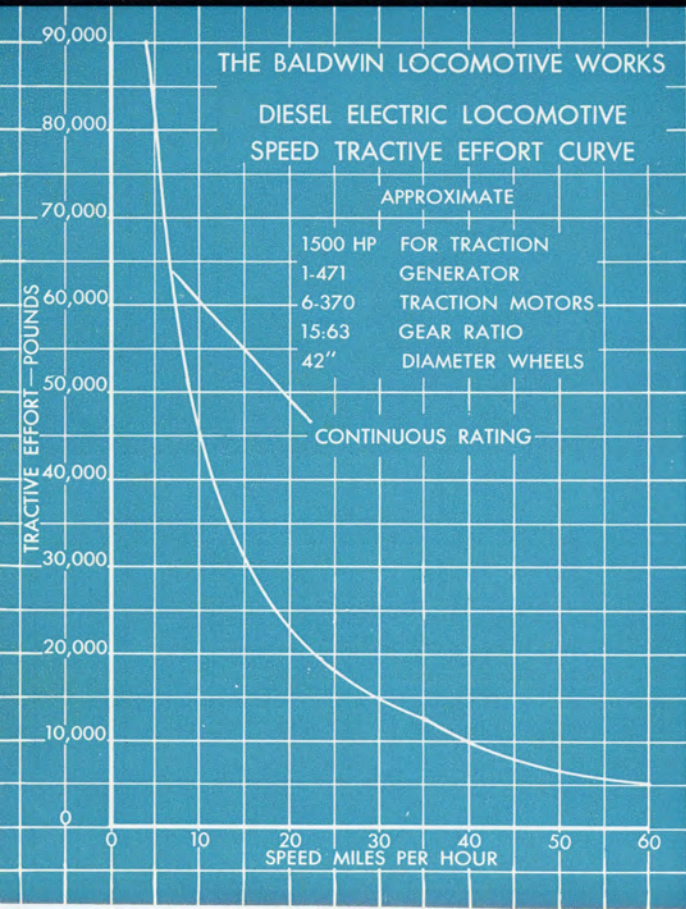
thermostatically controlled shutters insure the maintenance of correct engine temperatures. Provision is made for unusually large fuel oil capacity.

Operator's cab and engine compartment are constructed of metal plates and shapes rigidly attached to the one-piece, cast steel locomotive underframe. Suitable pilot, footboard and handrails are provided at each end of the locomotive.

BALDWIN 1500-hp DIESEL-ELECTRIC ROAD SWITCHING LOCOMOTIVE



Type	0-6-6-0	Minimum radius curvature, locomotive with train	191' (30°)
Diesel engine.....	One 1,500-hp., 4-cycle, 8-cylinder in line, turbo-supercharged	Fuel oil capacity....	1,900 gal.
Main generator...	1 Westinghouse, Type 471	Lubricating oil capacity.....	200 gal.
Driving motors...	6 Westinghouse, Type 370	Air capacity	58,800 cu. in.
Wheels....	6 pairs, 42" diameter, all driving	Starting tractive effort (30% weight),	97,500 lb.
Wheelbase, each truck.....	13' 0"	Gear ratio	15:63
Wheelbase, total locomotive.....	44' 6"	Continuous tractive effort rating...	64,200 lb.
Total weight and weight on drivers (approx.)	325,000 lb.	Continuous rating speed.....	6.6 m.p.h.
Maximum over-all dimensions:		Maximum safe speed.....	60 m.p.h.
Width	9' 11¼"		
Height	14' 3"		
Length (inside knuckles).....	58' 0"		



- LOCATION OF PRINCIPAL PARTS
1. Switchmen's Steps

2. Headlight

3. Heat Exchanger

4. Cooling System, Radiator Cores, Fan and Drive

5. Lube Oil Filter

6. Traction Motor Blower

7. Lube Oil Filler

8. Engine Compartment

9. Diesel Engine

10. Main Generator

11. Air Compressor

12. Storage Batteries

13. Electrical Equipment Cabinet

14. Helper's Seat

15. Fire Extinguisher

16. Handbrake

17. Cab Heater

18. Operator's Controls

19. Operator's Seat

20. Air Brake Equipment

21. Motor Truck

22. Fuel Oil Tank

23. Fuel Oil Tank Filler

24. Air Reservoir

25. Water Filler, Diesel Engine

26. Sand Box Filler

27. Pilot

28. Marker and Number Light

29. Rear Compartment

30. Water Tank or Aux. Fuel Tank

SPEED TRACTIVE EFFORT CURVE (APPROX.)

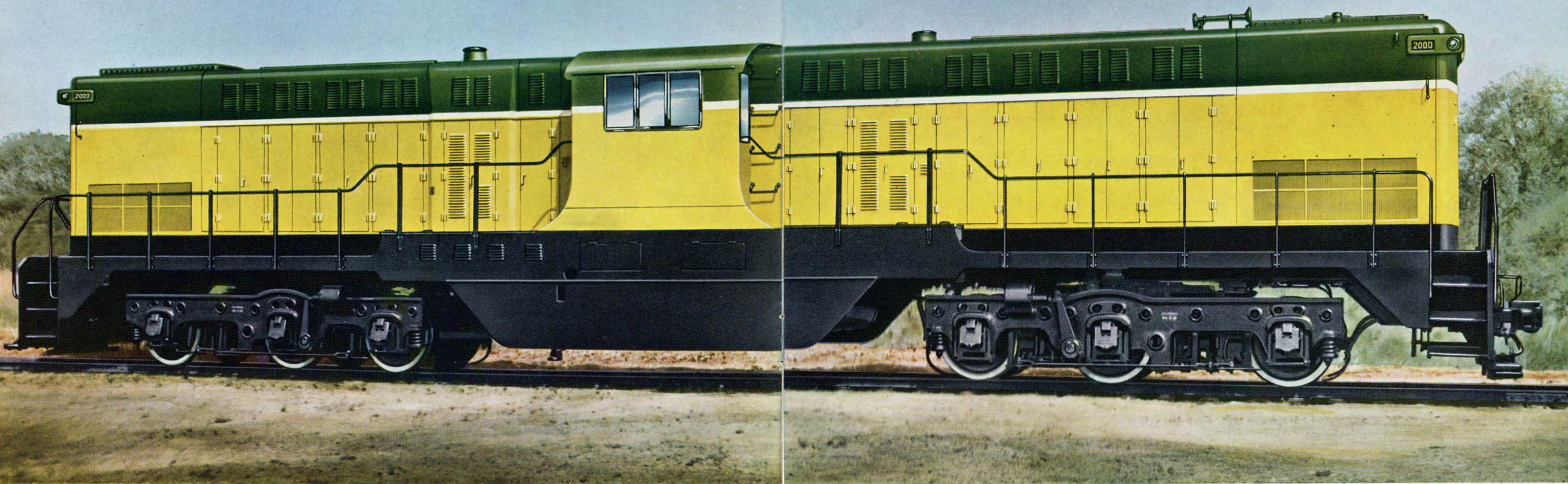
1,500 hp. for traction
1 No. 471 generator
6 No. 370 traction motors
15:63 gear ratio
42" diameter wheels

TRAILING TONNAGE RATINGS

162.5-ton locomotive		50-ton freight cars				Tangent Track at sea level					
Grade %	Start	Short Time Rating (after 15 minutes cooling period)				Continuous Rating and Rating at Various Speeds in mph					
		½ mile or less 3.9 mph	1 mile or less 4.5 mph	2 miles or less 5.5 mph	3 miles or less 6.0 mph	Max. Cont. 6.6	10	15	20	25	30
0	7955	7955	7955	7955	7955	7955	7955	6830	4550	3260	2450
0.5	4275	6610	6035	5325	4970	4570	3135	2050	1420	1040	800
1.0	2880	3670	3360	2950	2760	2530	1730	1120	770	555	420
1.5	2150	2540	2325	2040	1905	1740	1180	755	500	350	255
2.0	1710	1915	1750	1530	1430	1300	875	545	355	240	165
2.5	1410	1525	1395	1215	1135	1035	685	415	260	165	105
3.0	1190	1260	1150	1000	930	845	555	325	195	115	65

Starting Tonnage based on 12 lb. per ton starting and acceleration resistance, 30% adhesion, and corresponding grade resistance. Short Time and Continuous Rating Tonnages are based on Davis Formula resistances and corresponding grade resistance but are limited to starting tonnage on level track.

BALDWIN 2000 hp DIESEL-ELECTRIC TRANSFER LOCOMOTIVE



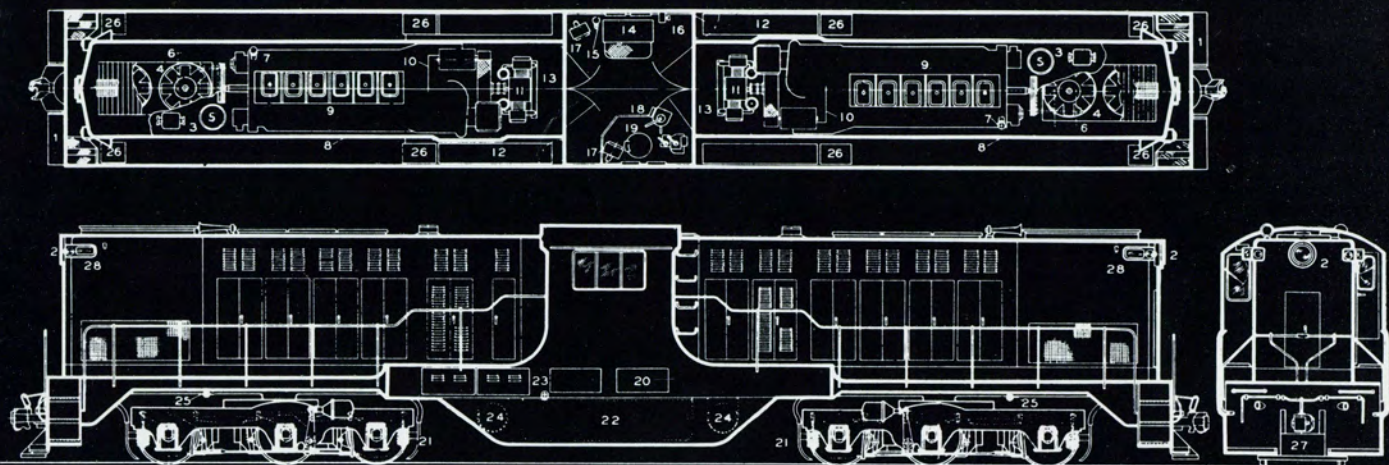
The 2,000-hp. Transfer Locomotive offers very definite advantages where maximum tractive effort is required at low and medium speeds for this type of service. Dual power plant, six heavy-duty traction motors, and the fact that the entire weight of the locomotive is available for adhesion, make this the ideal locomotive for the heaviest transfer, belt line or hump yard service.

The power plant consists of two identical Baldwin 1,000-hp., 4-cycle, 6-cylinder, supercharged diesel engines, each direct connected to a Westinghouse generator. Each engine generator set has its own electrical control equipment.

Center cab provides excellent visibility and convenience for the operator. Can be equipped with dual controls if desired. Air throttle and

permanent motor hook-up, controlled by a single lever, gives smooth acceleration. Two air compressors give added safety for down-hill operation. Thermostatically controlled cooling system for each engine insures proper operating temperature for maximum efficiency. Suitable pilot, footboard and handrails are provided at each end of the locomotive.

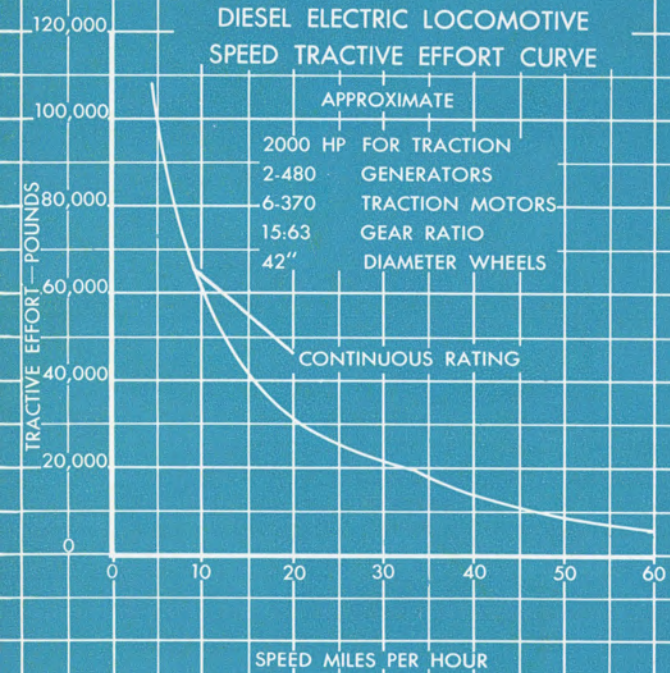
BALDWIN 2000-hp DIESEL-ELECTRIC
TRANSFER LOCOMOTIVE



Type	0-6-6-0	Minimum radius curvature, locomotive with train	191' (30°)
Diesel engines.....	Two 1,000-hp., 4-cycle, 6-cylinder in line, turbo-supercharged	Fuel oil capacity.....	1,500 gal.
Main generators...	2 Westinghouse, Type 480	Lubricating oil capacity.....	340 gal.
Driving motors...	6 Westinghouse, Type 370	Air capacity.....	60,600 cu. in.
Wheels....	6 pairs, 42" diameter, all driving	Starting tractive effort (30% weight), 106,200 lb.	
Wheelbase, each truck.....	13' 0"	Gear ratio.....	15:63
Wheelbase, total locomotive.....	54' 9"	Continuous tractive effort rating...	64,200 lb.
Total weight and weight on drivers (approx.)	354,000 lb.	Continuous rating speed.....	9.4 m.p.h.
Maximum over-all dimensions:		Maximum safe speed.....	60 m.p.h.
Width	10' 2"		
Height	15' 4 1/4"		
Length (inside knuckles).....	74' 0"		

THE BALDWIN LOCOMOTIVE WORKS

DIESEL ELECTRIC LOCOMOTIVE
SPEED TRACTIVE EFFORT CURVE



LOCATION OF PRINCIPAL PARTS

- | | |
|--|---------------------------------|
| 1. Switchmen's Steps | 15. Fire Extinguisher |
| 2. Headlight | 16. Handbrake |
| 3. Heat Exchanger | 17. Cab Heater |
| 4. Cooling System, Radiator Cores, Fan and Drive | 18. Operator's Controls |
| 5. Lube Oil Filter | 19. Operator's Seat |
| 6. Traction Motor Blower | 20. Air Brake Equipment |
| 7. Lube Oil Filler | 21. Motor Truck |
| 8. Engine Compartment | 22. Fuel Oil Tank |
| 9. Diesel Engine | 23. Fuel Oil Tank Filler |
| 10. Main Generator | 24. Air Reservoir |
| 11. Air Compressor | 25. Water Filler, Diesel Engine |
| 12. Storage Batteries | 26. Sand Box Filler |
| 13. Electrical Equipment Cabinet | 27. Pilot |
| 14. Helper's Seat | 28. Marker and Number Light |

SPEED TRACTIVE EFFORT
CURVE

- 2,000 hp. for traction
2 No. 480 generators
6 No. 370 traction motors
15:63 gear ratio
42" diameter wheels

TRAILING TONNAGE RATINGS

180-ton locomotive

50-ton freight cars

Tangent Track at sea level

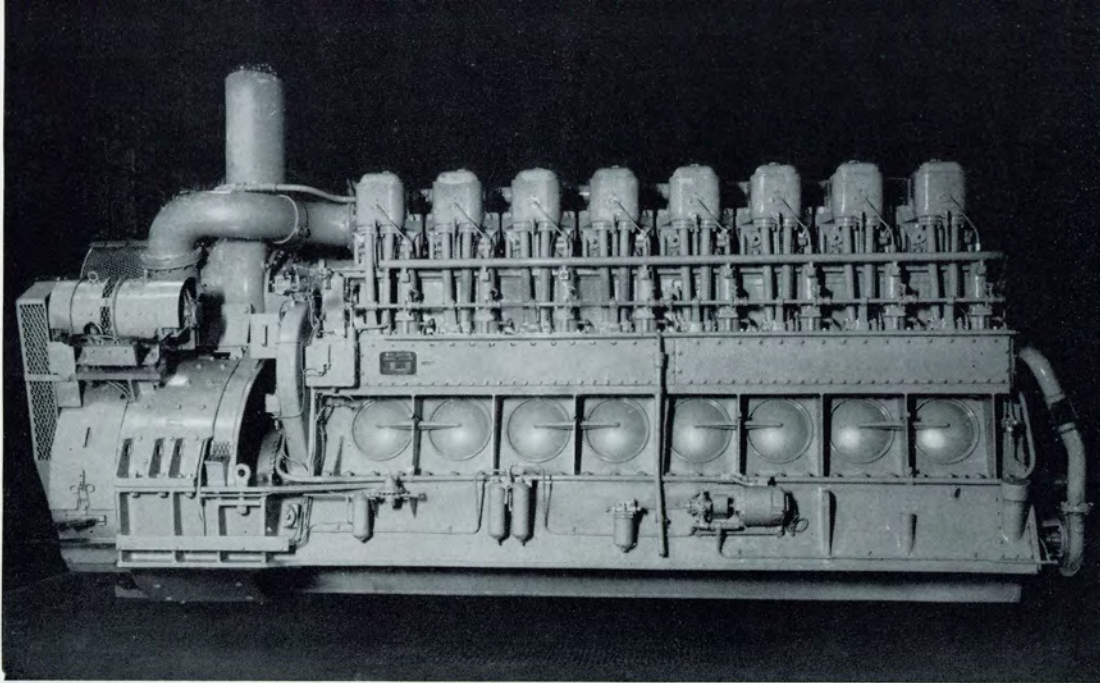
Grade %	Start	Short Time Rating (after 15 minutes cooling period)				Continuous Rating and Rating at Various Speeds in mph					
		1/2 mile or less 5.1 mph	1 mile or less 6.1 mph	2 miles or less 7.2 mph	3 miles or less 7.8 mph	Max. Cont. 9.4	15	20	25	30	35
0	8800	8800	8800	8800	8800	8800	8800	6255	4710	3625	2750
0.5	4700	7000	6100	5425	5000	4350	2750	1900	1500	1200	935
1.0	3200	3980	3545	3075	2865	2480	1530	1090	845	665	515
1.5	2390	2750	2450	2125	1970	1700	1035	740	555	430	320
2.0	1900	2080	1845	1600	1480	1280	760	525	390	295	215
2.5	1560	1660	1470	1270	1175	1010	590	395	295	210	145
3.0	1320	1375	1210	1040	965	825	470	305	215	150	95

Starting Tonnage based on 12 lb. per ton starting and acceleration resistance, 30% adhesion, and corresponding grade resistance. Short Time and Continuous Rating Tonnages are based on Davis Formula resistances and corresponding grade resistance but are limited to starting tonnage on level track.

1500 hp.

DIESEL ENGINE

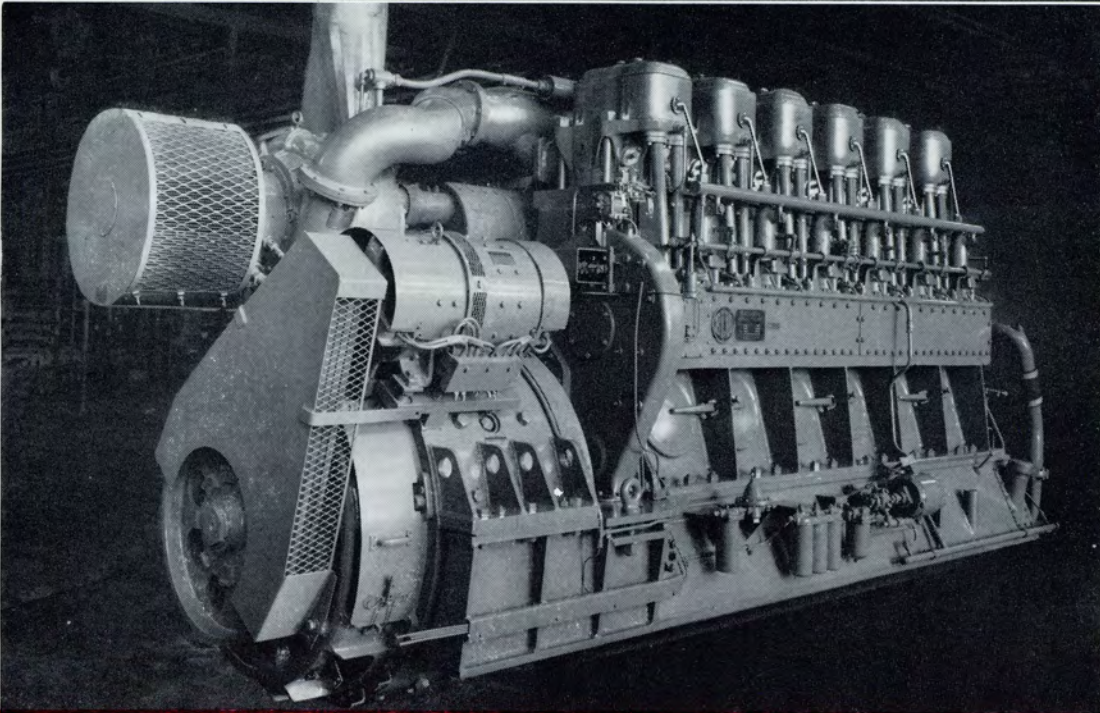
One of these Baldwin Series 608-SC diesel engines powers the 1,500-hp. Road Switching Locomotive. It is a 4-cycle, 8-cylinder in line, turbo-charged engine, 12 $\frac{3}{4}$ " bore x 15 $\frac{1}{2}$ " stroke, developing full rated power at 625 r.p.m. Engine crankshaft is direct connected to a Westinghouse Type 471 generator.



1000 hp.

DIESEL ENGINE

Two of these Baldwin Series 606-SC diesel engines comprise the dual power plant in the 2,000-hp. Transfer Locomotive. The 606-SC is a 4-cycle, 6-cylinder in line, turbo-charged engine, 12 $\frac{3}{4}$ " bore x 15 $\frac{1}{2}$ " stroke, developing full rated power at 625 r.p.m. Each engine is a self-contained power unit having its own Westinghouse Type 480 main generator, auxiliary generator and electrical control equipment.



CHARACTERISTICS COMMON TO BOTH ENGINES

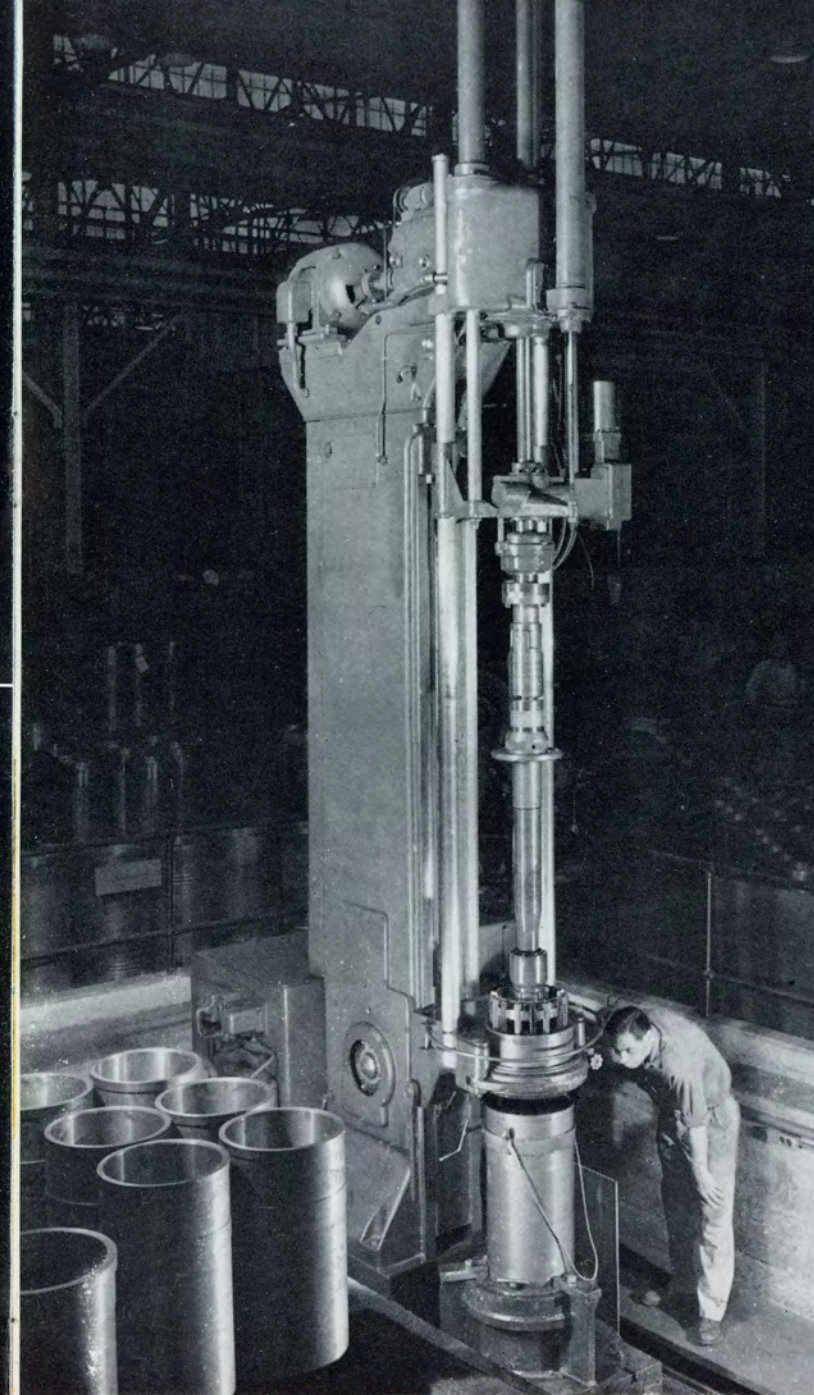
Many engine parts such as pistons, connecting rods, cylinder liners, main bearings, connecting rod bearings, cylinder heads, valves, fuel injection nozzles and individual fuel pumps are interchangeable between the 608-SC and the 606-SC engines.

The fuel system is of the solid injection type with spring-loaded, multi-hole spray nozzles. An individual fuel pump is provided for each cylinder.

A centrifugal trip-type overspeed stop automatically shuts the engine down if engine speed exceeds a predetermined maximum.

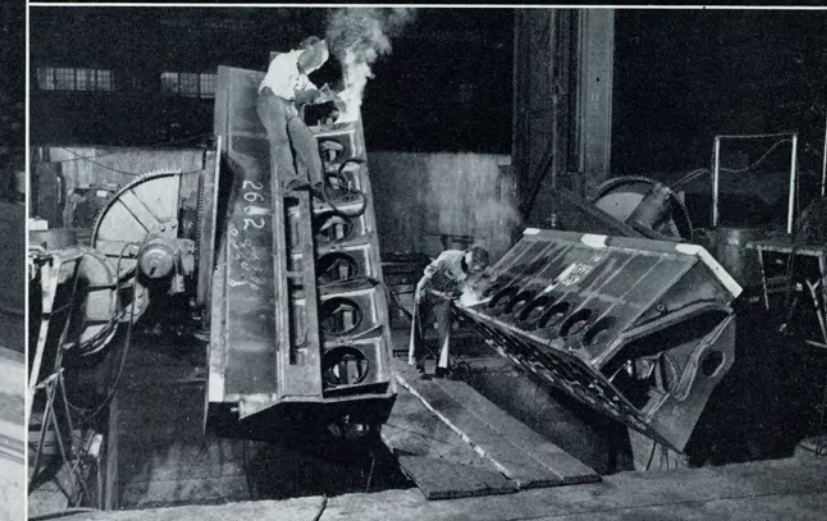
A governor of the hydraulic relay type, gear driven from the camshaft and pneumatically controlled from the cab, maintains proper engine speed by controlling the quantity of oil delivered to the cylinders.

Lubricating oil is circulated by a positive displacement gear pump, chain driven from the crankshaft. From the main bearings, oil is conveyed to the connecting rod bearings, wristpin bearings and piston cooling coils through passages in the crankshaft and connecting rods.



TURNING CRANKPINS

Crankshafts are heat-treated, solid steel forgings drilled for pressure lubrication. Crankpin and journal fits are turned and ground to meet close tolerances for diameter and parallelism. Fits are standardized to permit the use of interchangeable bearing halves on both the six- and eight-cylinder engines.

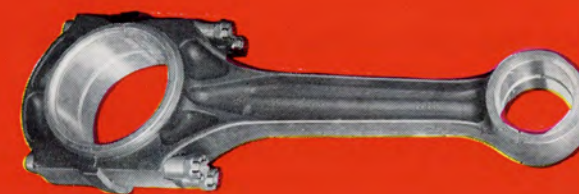


WELDING DIESEL ENGINE FRAMES

Diesel engine frames and beds are weldments, giving ample strength, light weight and uniform quality of metal throughout. They are fabricated and placed on positioners to give the best possible conditions for sound, uniform welds. An integral extension on the engine bed provides for rigid mounting of the main generator.

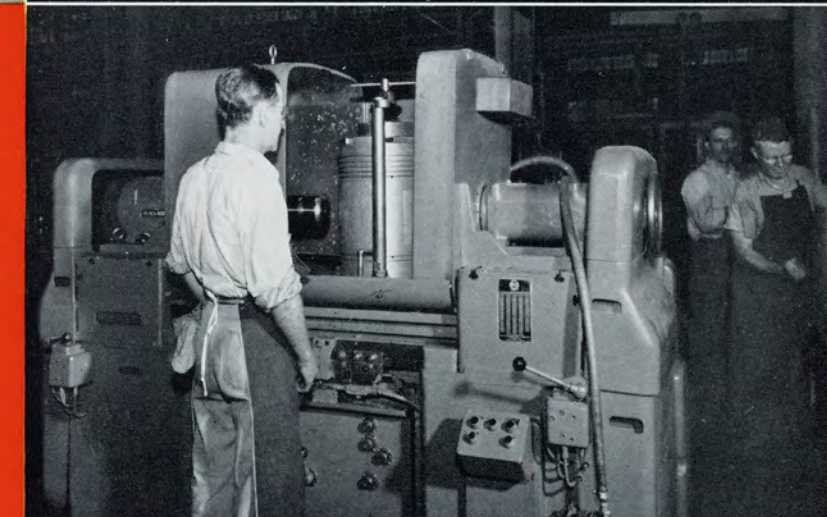
HONING A CYLINDER LINER

Cylinder liners are of high grade cast iron, fitted into the upper section of the welded engine frame. A rubber seal ring is applied between the lower end of the liner and the frame, permitting free expansion of the liner due to temperature changes.



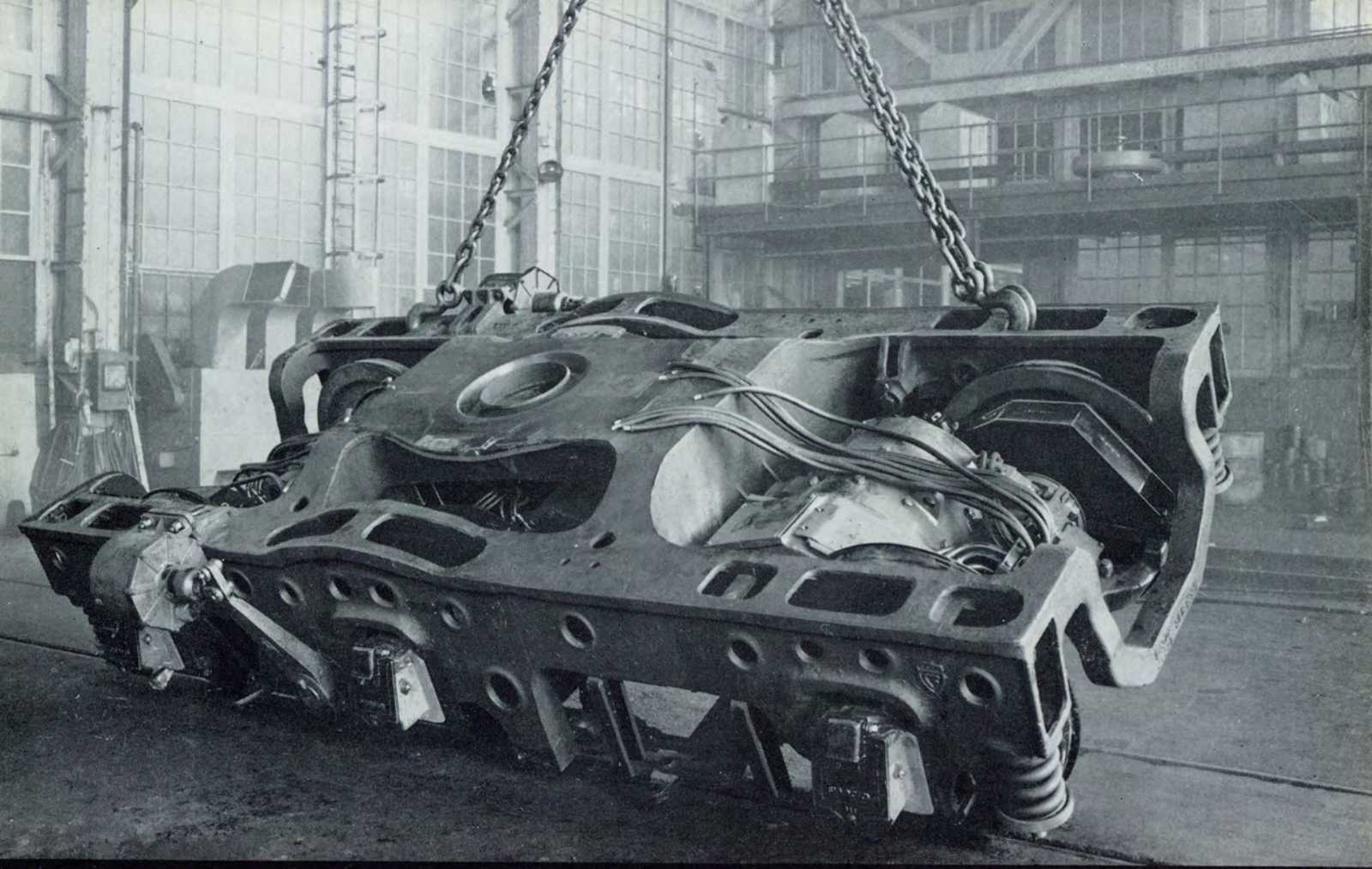
4-BOLT CONNECTING ROD

Connecting rods are made of drop-forged, heat-treated alloy steel with precision-type bearing shells. Caps are secured by four heat-treated, alloy steel bolts. Bearing fits at both ends of the rod are bored simultaneously on a two-spindle machine. Each rod is drilled longitudinally to carry lubricating oil to the wristpin bearing and the cooling coils in the pistons.



BORING WRISTPIN FIT IN PISTON

Pistons are made of heat-treated aluminum alloy and are cooled by a constant flow of oil from the wristpin bearing passing through a "cast-in" steel coil. Each piston has four compression rings and three lubricating oil-control rings. Both sides of the piston are bored in one operation as illustrated above.



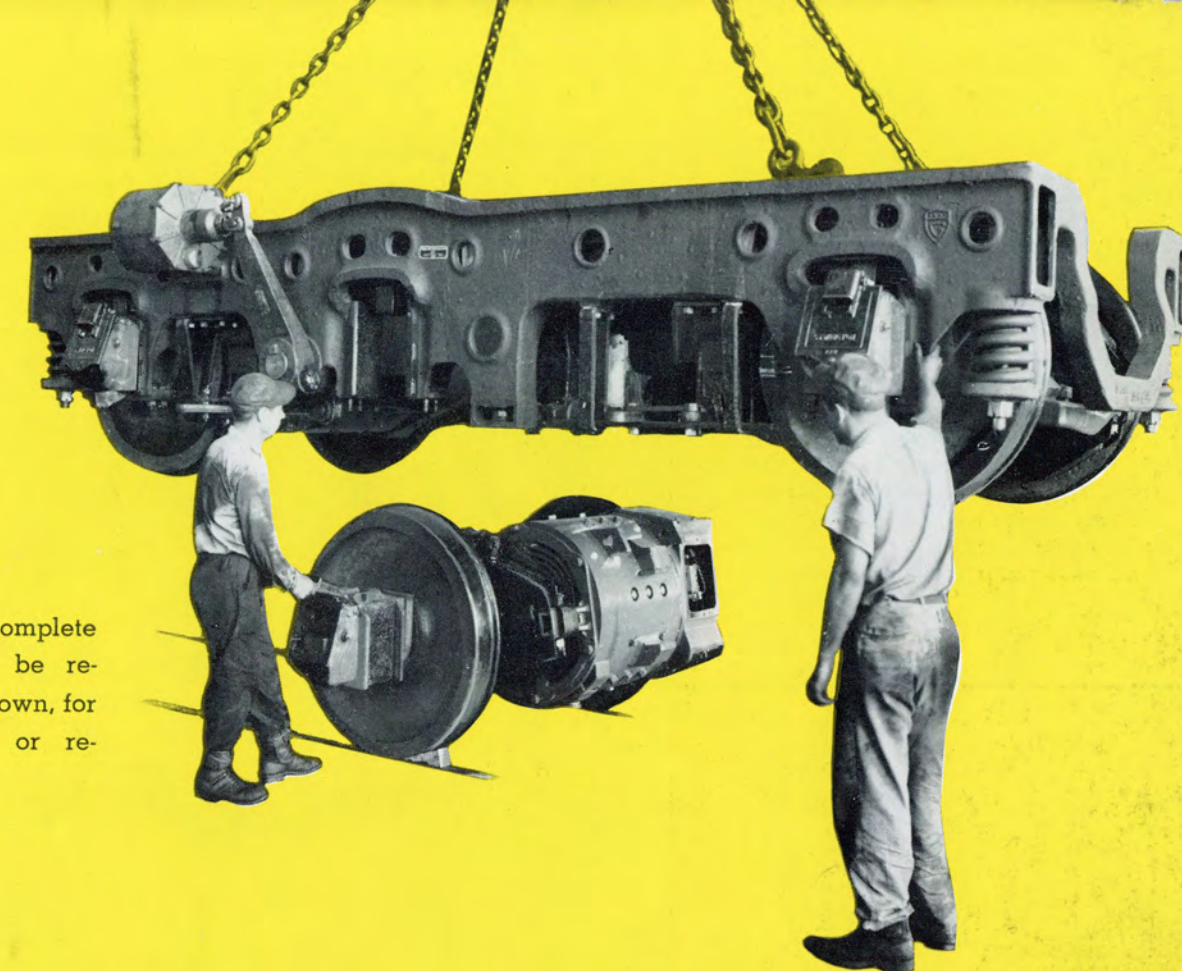
Interchangeable 6-wheel, 3-motor truck

One standard truck design is used, front and back, under both the 1,500-hp. Road Switching Locomotive and the 2,000-hp. Transfer Locomotive. It is a rugged pedestal-type swivel truck of one-piece, cast steel frame construction. A motor on each axle means that every pair of wheels helps to pull the load.

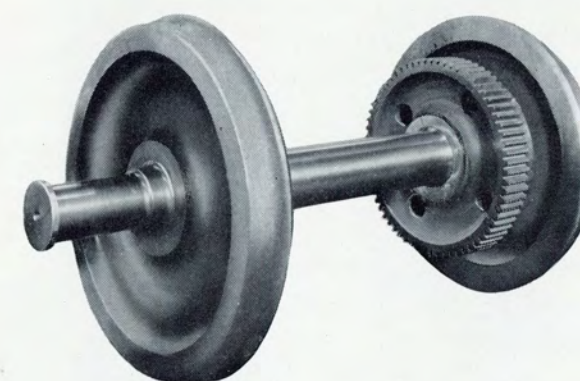
Standardization of truck design simplifies the maintenance of spare parts stocks, and permits easy replacement of a complete truck when required.

Center plates are fitted with high-carbon side and bottom liners that are oil lubricated and protected by dust guards. Truck pedestal jaws are fitted with high-carbon steel liners.

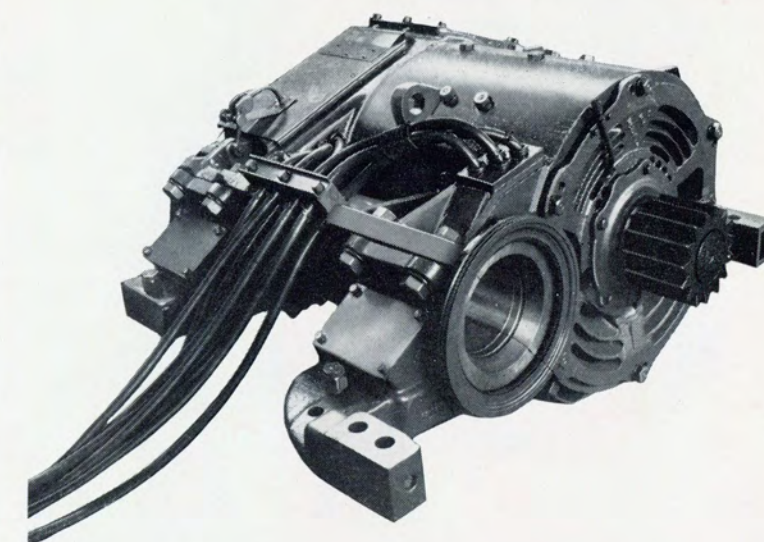
Special design features facilitate maintenance and replacement of traction motors.



Center pair of wheels complete with motor can readily be removed and replaced, as shown, for inspection, maintenance, or replacement of parts.



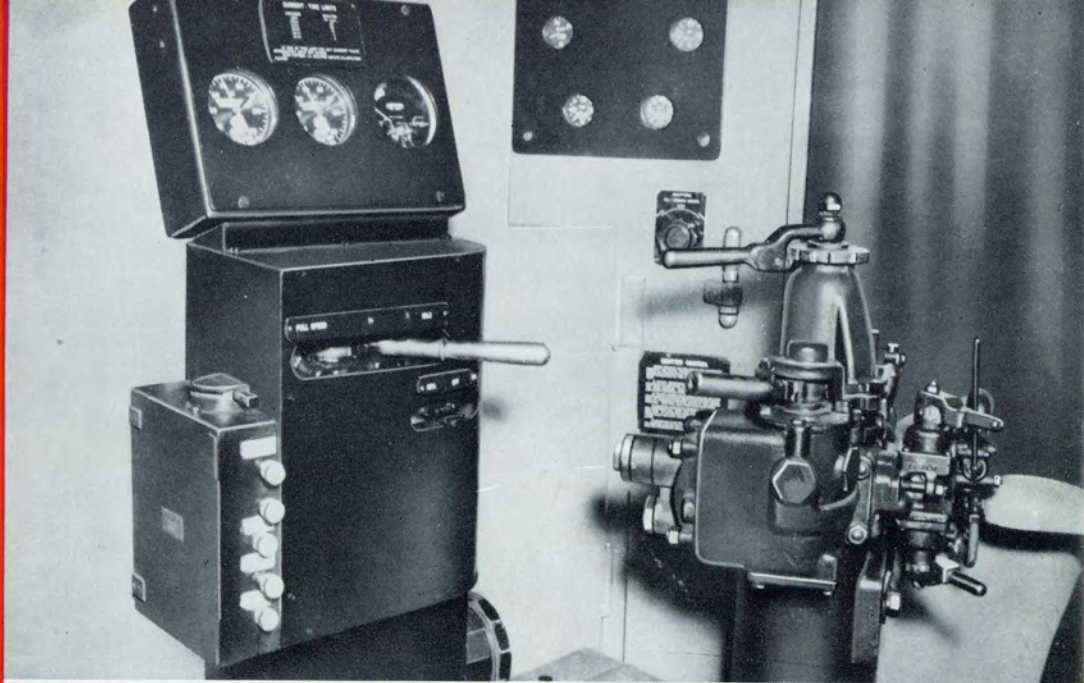
All wheels are of heat-treated rolled steel, 42 inches in diameter, having rims 5½ inches wide with A.A.R. standard flange gauge. Axles are of forged steel with friction-type journals.



Westinghouse Type 370 traction motor, standard for both the 1,500-hp. and the 2,000-hp. locomotives. It is a series wound, forced ventilated, axle-hung motor with single reduction gearing to the axle. Blowers for cooling traction motors are mounted on the locomotives.

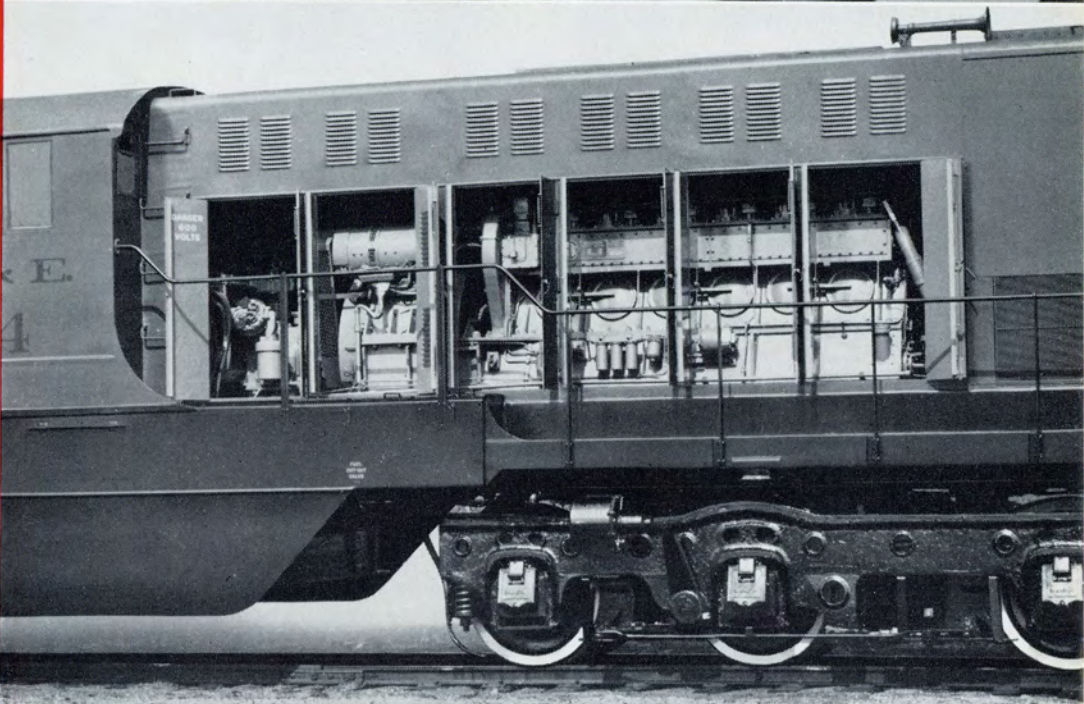
SIMPLIFIED CONTROL

Smooth "straight-line" operation of a single throttle lever controls the motion of the locomotive from starting to full speed. Motors are permanently connected in series or series parallel, and the flow of current, from generator to motors, is automatically regulated by the electrical control system to suit the power and speed requirements. No transition lever is needed. A reverse lever, on the control stand, determines the direction of motion of the locomotive.



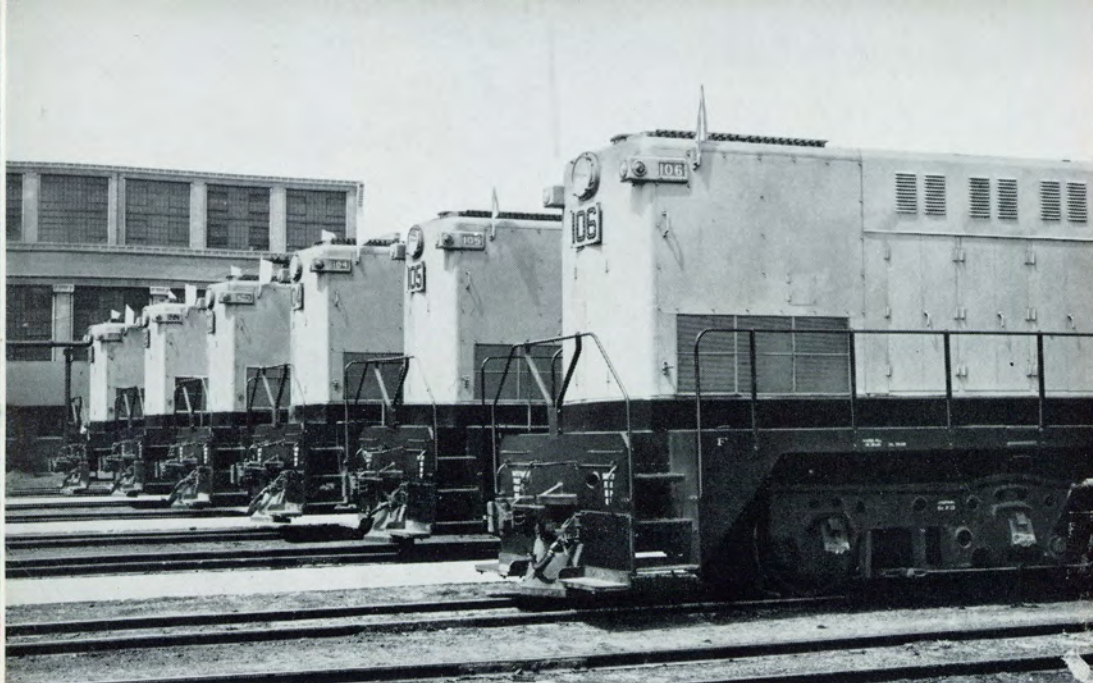
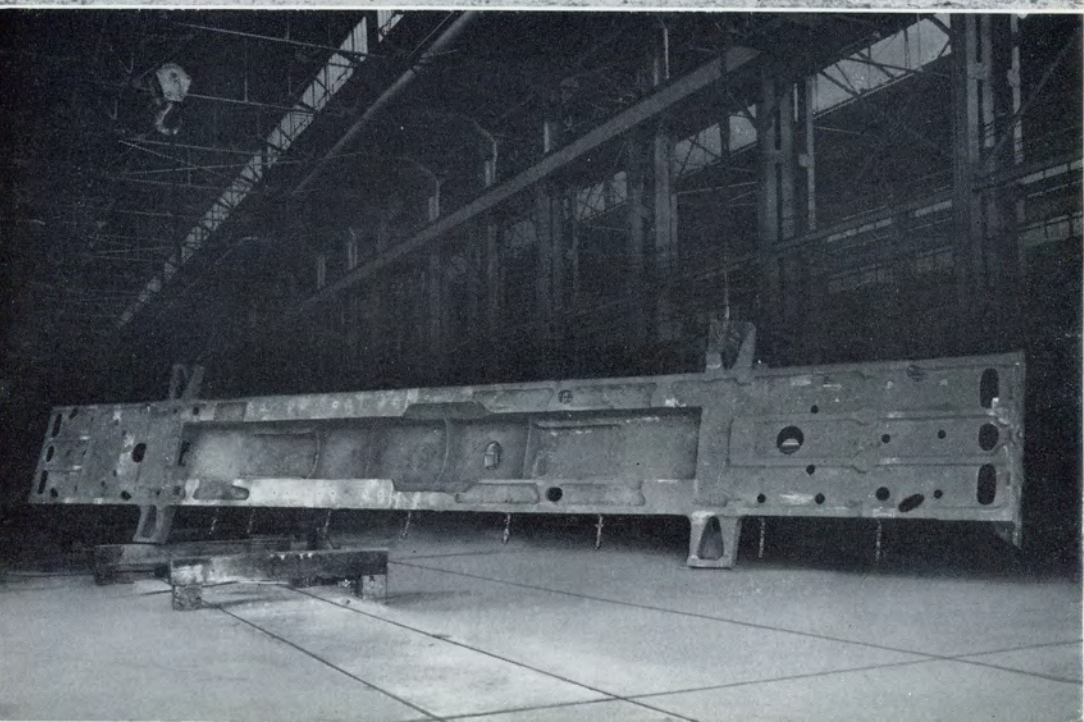
ACCESSIBILITY

Doors along both sides of the locomotive, and sectional hatches in the roof, give easy access to engines and generators to facilitate inspection and maintenance. Complete power plant or individual cylinder heads and pistons may be removed through the roof hatches. Electrical control equipment is conveniently located in a cabinet adjacent to the cab.

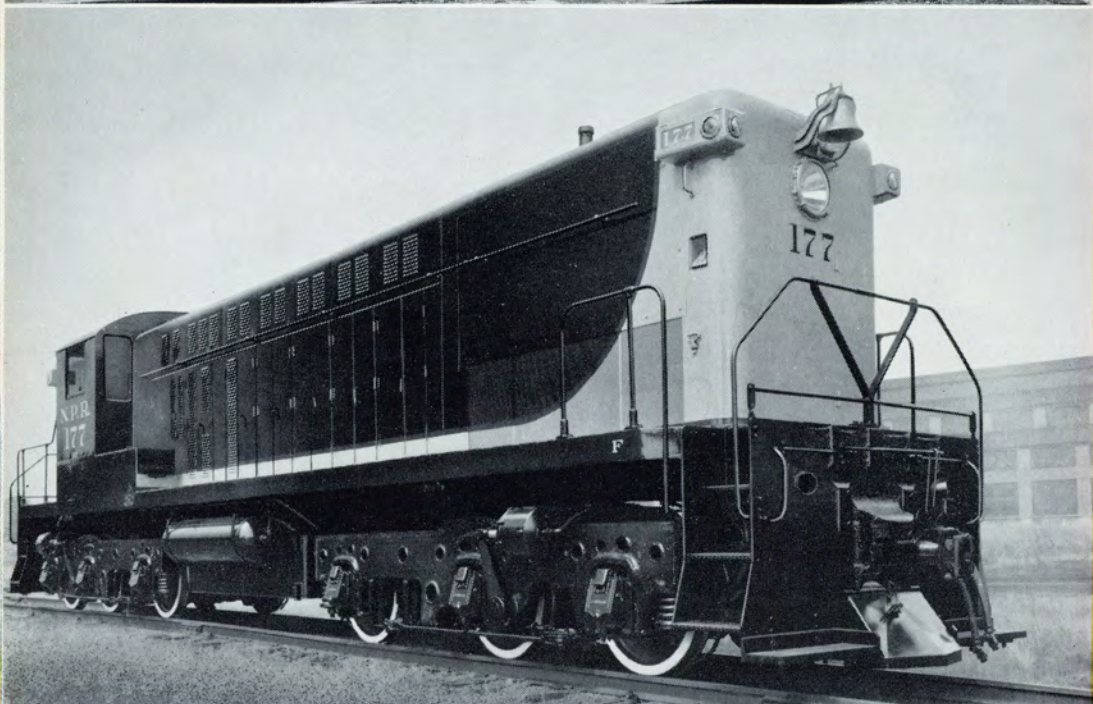


RIGID CONSTRUCTION

Operator's cab and engine compartment are constructed of metal plates and shapes, strongly braced and electrically welded or riveted. The entire superstructure is secured to the locomotive underframe to form a rigid unit. Underframe shown is the one-piece, cast-steel type used on the 1,500-hp. Road Switching Locomotive.



Six Baldwin 2,000-hp. Diesel-Electric Transfer Locomotives ready to serve the Elgin, Joliet and Eastern Railway.



A 1,500-hp. Diesel-Electric Road Switching Locomotive built by Baldwin for the Northern Pacific Railway.



Baldwin 1,500-hp. Road Switching Locomotive in service on the lines of the Chicago and North Western Railway.

design features applicable to both the 1,500-hp. Road Switcher and the 2,000-hp. Transfer Locomotives

1. Exceptional hauling capacity combined with unusual flexibility of operation.
2. Excellent visibility for the operator.
3. Rugged, turbo-charged, 4-cycle diesel engine with welded base and frame.
4. Six heavy-duty traction motors cooled by blowers mounted on the locomotive.
5. Total weight of locomotive available for traction.
6. Electro-pneumatic control for smooth, easy operation without change in motor hook-up.
7. Hydraulic relay-type governor to maintain proper engine speed.
8. Carbonstat load regulator permits engine to run at full load and prevents overloading or underloading the engine.
9. Electro-hydraulic mechanism automatically cuts fuel supply in case of low lubricating oil pressure.
10. Wheel-slip protective device to reduce engine power and give audible warning in the cab when wheels slip.
11. Thermostatically controlled radiator shutters and motor-driven fans for cooling engine water and lubricating oil.
12. Rugged pedestal-type trucks with one-piece, cast-steel frames.
13. Pilots and footboards at both ends of the locomotive for road or switching operation.



BALDWIN-WESTINGHOUSE SERVICE FACILITIES

District offices and service establishments, strategically located in principal cities throughout the United States, assure Baldwin customers of speedy and efficient service in the handling of orders for spare or replacement parts.



SALES OFFICES

Boston 10, Mass.....10 High Street
 Chicago 4, Ill.....627 Railway Exchange
 Cleveland 13, Ohio.....2507 Terminal Tower Bldg.
 Houston 2, Texas.....1817 Second National Bank Bldg.
 New York 5, New York.....120 Broadway
 Philadelphia 3, Pa.....1154 Broad Street Station Bldg.
 Pittsburgh 19, Pa.....489 Union Trust Building
 San Francisco 10, Calif.....2929 19th Street
 Seattle 4, Washington.....514 Hoge Building
 St. Louis 3, Mo.....1221 Locust Street
 Washington 5, D. C.....616 Tower Bldg.

SERVICE STOREROOMS

Philadelphia 42, Pa.....The Baldwin Locomotive Works
 Baldwin Locomotive Sales Corp.
 Chicago 9, Illinois.....2211 W. Pershing Road
 Atlanta 2, Ga.....1299 Northside Drive, N.W.
 San Francisco 10, Calif.....2929 19th Street
 Minneapolis 13, Minn.....2303 Kennedy Street, N.E.
 St. Louis 10, Mo.....1525 S. Vandeventer Avenue

The following Westinghouse maintenance and repair establishments are being utilized by Baldwin to provide expeditious unit exchange service on electrical equipment:

Boston 27, Mass.....235 Old Colony Avenue
 Buffalo 10, N. Y.....1132 Seneca Street
 Philadelphia 4, Pa.....3001 Walnut Street
 Baltimore 24, Md.....4015 Foster Avenue
 Atlanta 2, Ga.....1299 Northside Drive, N.W.
 Pittsburgh 8, Pa.....543 N. Lang Avenue
 Cleveland 2, Ohio.....5901 Breakwater Avenue, Sta. A
 Chicago 32, Ill.....3900 W. 41st Street
 Minneapolis 13, Minn.....2303 Kennedy Street, N.E.
 St. Louis 10, Mo.....1601 S. Vandeventer Avenue
 Denver 4, Colo.....988 Cherokee Street
 Houston 10, Texas.....5730 Clinton Drive
 Emeryville 8, Calif.....5915 Hollis Street
 Los Angeles, Calif.....3383 E. Gage Street
 Portland 12, Ore.....626 N. Tillamook Street