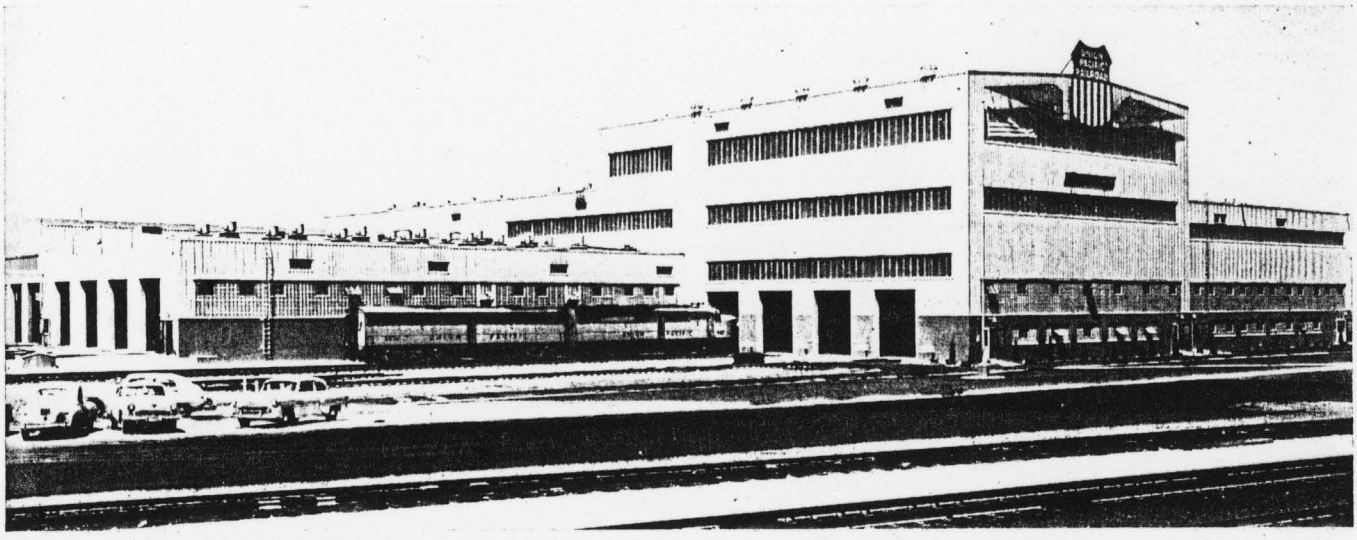

UP Opens Salt Lake City Diesel Shop

RL&C 129(10):45-9 (oct55)

Present output of six heavy repair diesel engines and units a month will be stepped up to 20 at full production—about 4,000 units a month are inspected and serviced.

The new $6,000,000 locomotive servicing and repair shop of the Union Pacific at Salt Lake City, Utah, was officially opened August 2.

With a shop output of 4,000 units inspected and serviced monthly, this shop also overhauls six diesel units, including the engines, a month. With the shop in full production, employing a force of about 400 men and annual payroll of $1,800,000, it is anticipated that the output will be stepped up to 20 heavy repairs a month in addition to the units given normal daily attention.

The main shop building, 424 ft long by 162 ft wide, extends in a general north-south direction and houses four raised tracks with elevated platforms for heavy diesel unit repairs. It also includes the wheel shop, stores department, tool room, parts repair and cleaning rooms. A 324-ft by 80 ft wing just west of the main shop has three tracks with raised platforms and is devoted to running service repairs. A 264-ft by 102-ft wing extension on the east has a heavy repair bay, also two engine overhaul bays, an electric shop and the general office. The total floor area is 144,000 sq ft and the shop building covers 2.8 acres.

There are five different roof elevations in the plant ranging from 32 to 77 ft. The shop is served by five traveling bridge cranes, one Whiting 270-ton crane in the heavy-repair bay and four Northern cranes of 35, 20 and 10-ton capacities in various departments as indicated in the floor plan.

To permit installation of the 270-ton crane which can safely lift the largest UP diesel unit and the even heavier gas-turbine locomotive which is 83½ ft long and weighs 275½ tons, a section of the building had to be left unroofed until the crane was erected.

The Whiting 90-ton drop table for removing complete trucks from under diesel units presented a special problem in construction. The ground water level in the area is just 6 ft down and the drop pit had to be designed

Principal Machine Equipment in UP Salt Lake City Shop

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1	De Laval oil Puri-Filter unit
1*	Paxton-Mitchell Model-240 wheel-washing machine
1*	Yale 6,000-lb capacity electric fork-lift truck
1	Rogers 600-ton capacity wheel press
1	Westinghouse type 4-C air brake test rack
1	Magnuflux RTLL inspection unit
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1	Cincinnati-Bickford 5-ft radial drill
2	Cincinnati-Bickford 4-ft radial drills
1	Chambersburg 75-ton capacity bushing press
1	Bullard Model-75 Cut-Master vertical turret lathe
2*	GE No. 17 engine load resisters
1	Betts heavy-duty hydraulic-feed car wheel borer
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2	Crane air-brake lapmaster machines
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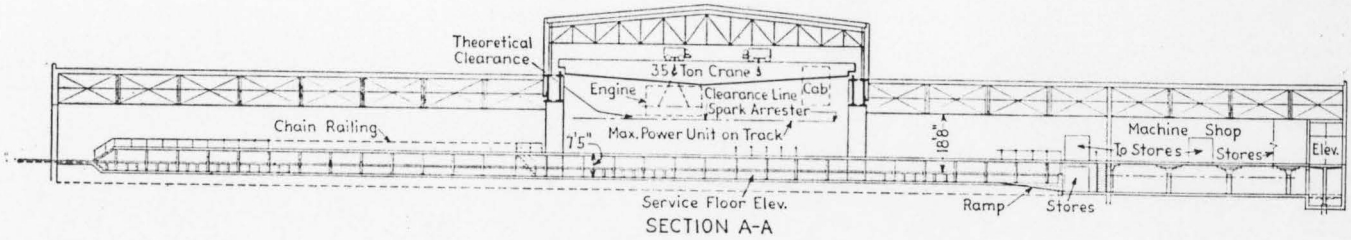
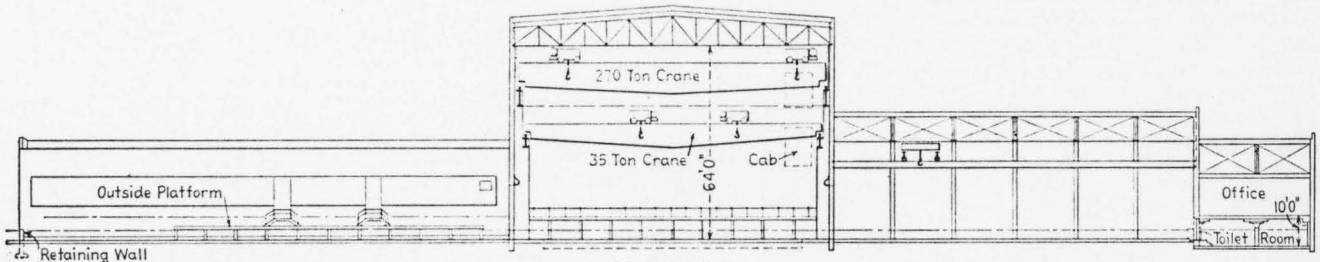


SECTION A-A



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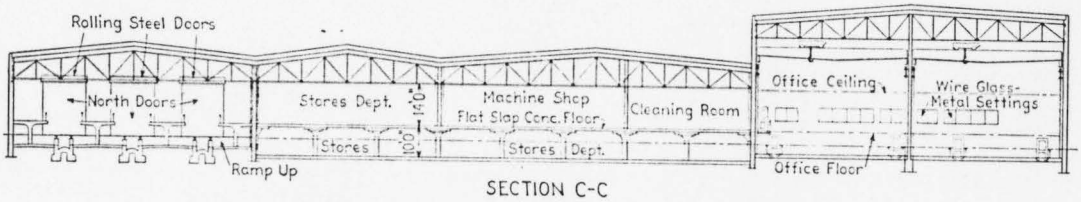
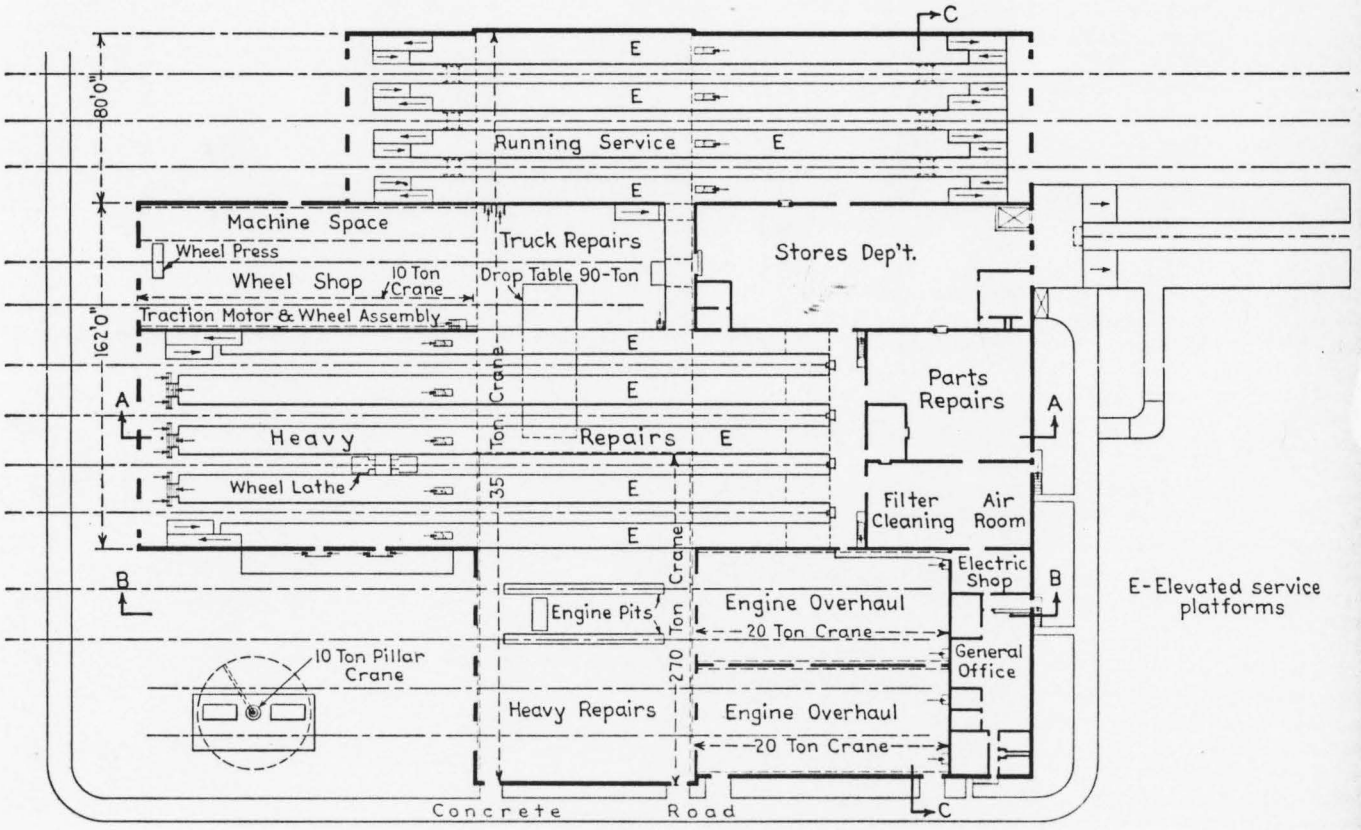
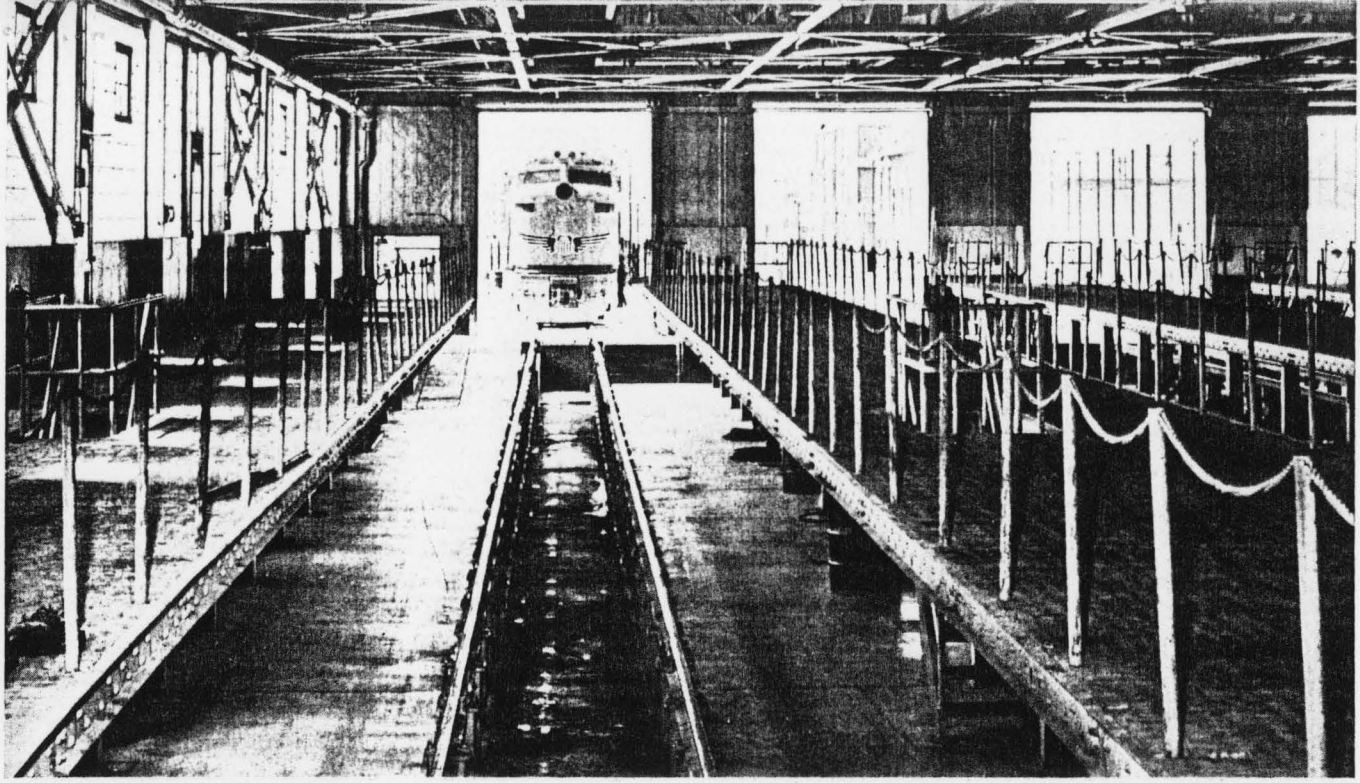


SECTION C-C

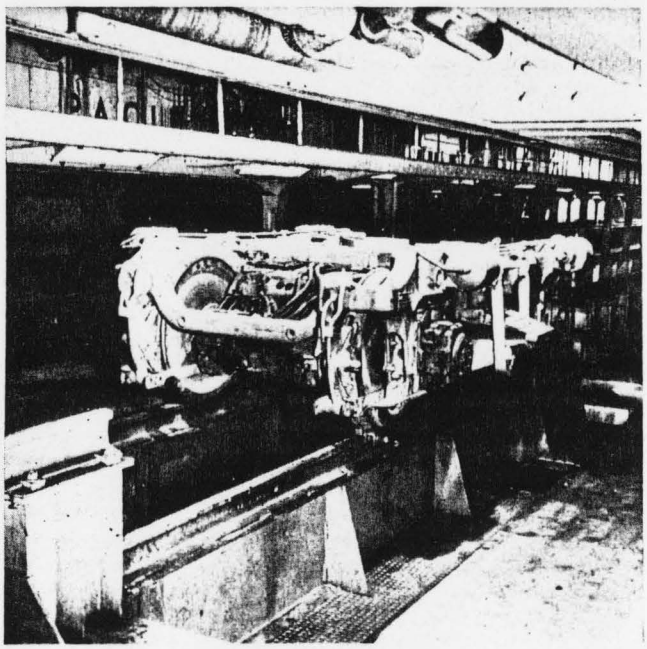
Sections through UP diesel repair shop at Salt Lake City, Utah.



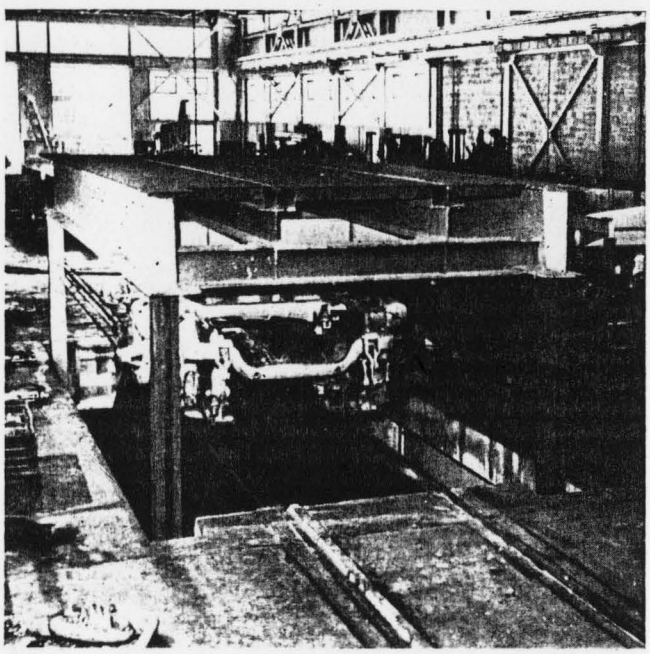
UP Diesel locomotive maintenance and repair shop.



Elevated tracks with ramps on both sides facilitate access to locomotives during repair work.



A set of trucks on the 90-ton drop table. When in use, a locomotive is parked with a set of trucks directly over the drop table.

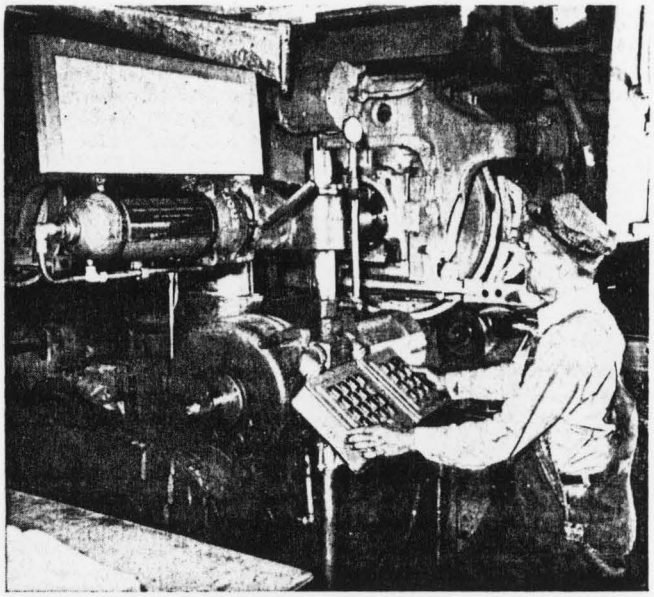


Whiting drop table bringing a diesel truck up to the level of the truck shop floor.

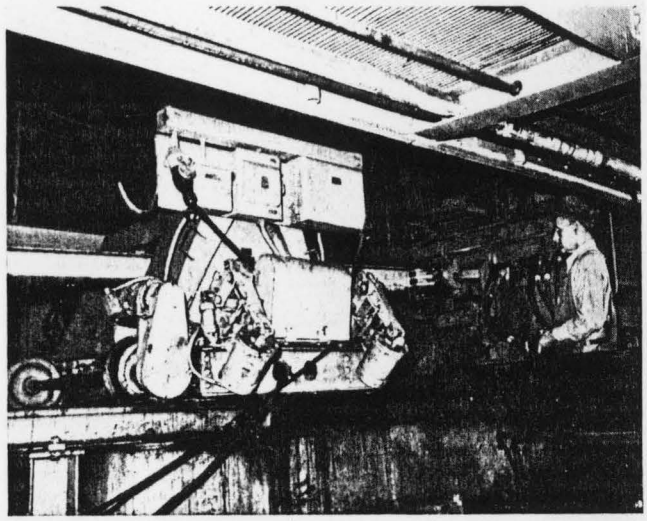
to take care of buoyancy as well as trucks. It was constructed heavy enough so that the weight overcame the buoyancy.

The Standard wheel-truing machine, installed in one track of the main shop building in October 1954 at a cost of $135,000 has already proved its value. In the first nine months of multiple-shaft operation, this machine was used to restore the standard tread and flange contour of 2,500 pairs of diesel wheels without removing them from their respective locomotive units. A single pair of wheels can be retrued, if necessary, and the locomotive unit returned to service in a total of 1½ hrs or less.

Cleaning various locomotive parts constitutes a major operation in any diesel shop and the UP Salt Lake shop is well equipped in this respect. One of the newer machines is a Farr automatic air filter washer with roller conveyors moving filters to the dryer and oiler at the rate of 60 an hour, or about as fast as one man can handle them into the machine and out of the oiler.



Standard wheel-truing machine being operated from a push-button control panel.



Machine used to spot locomotives on the wheel-truing machine. Electrically operated, it clamps itself to the rails and, with a rack and pinion arrangement, moves the locomotive to the desired spot.

Heating System

The new shop heating system consists chiefly of unit heaters. In the shop areas, large industrial-type unit heaters, made by the American Blower Corporation, bring in 100 per cent fresh air. This air is brought to the final temperature of 110 to 115 deg F to furnish fresh air for the building. There are 43 of these units in the new structure, each bringing in 14,000 cfm of air and each having a heating capacity of 1,640,000 Btu. (In comparison, each heater would be large enough to heat 15 or 16 average-size homes.)

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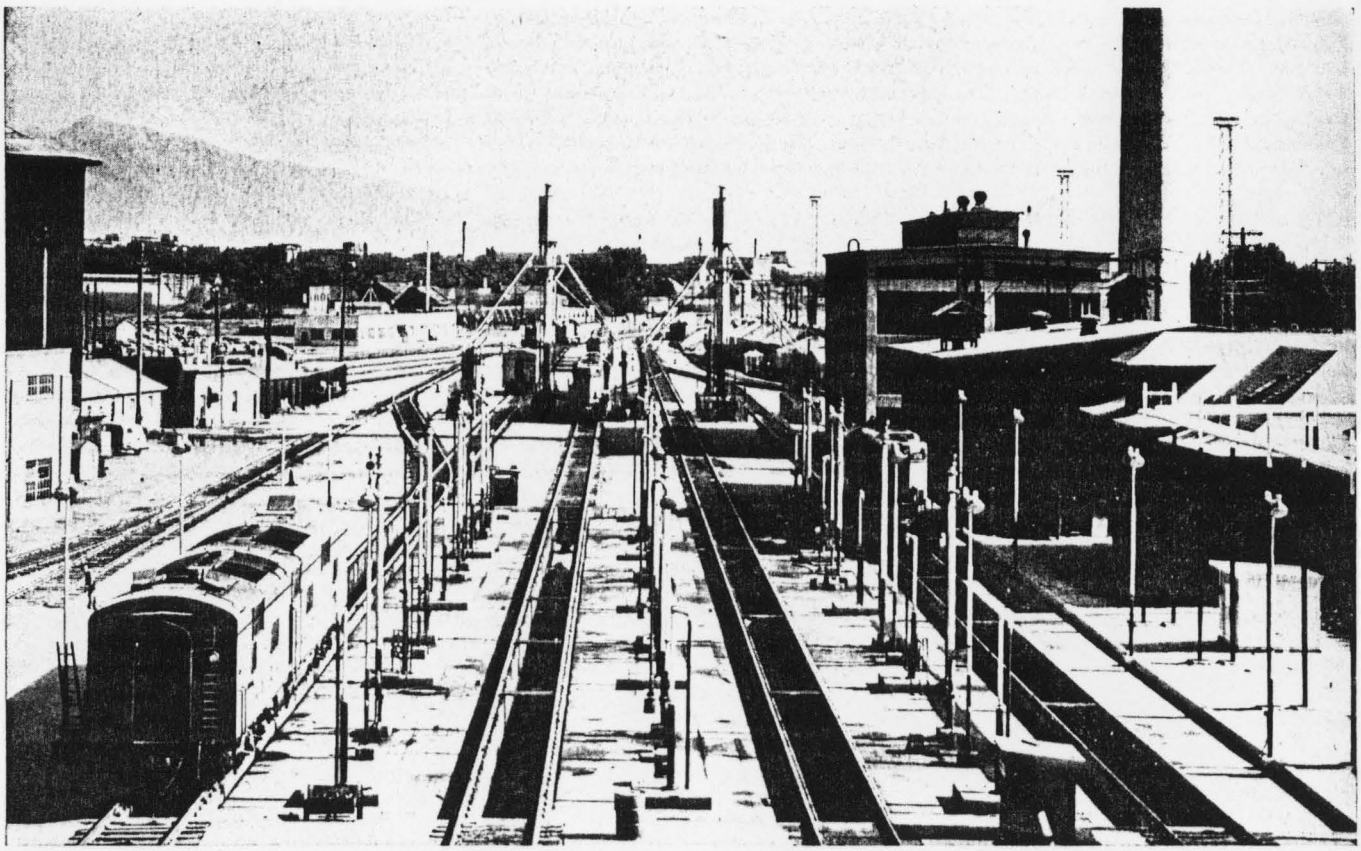
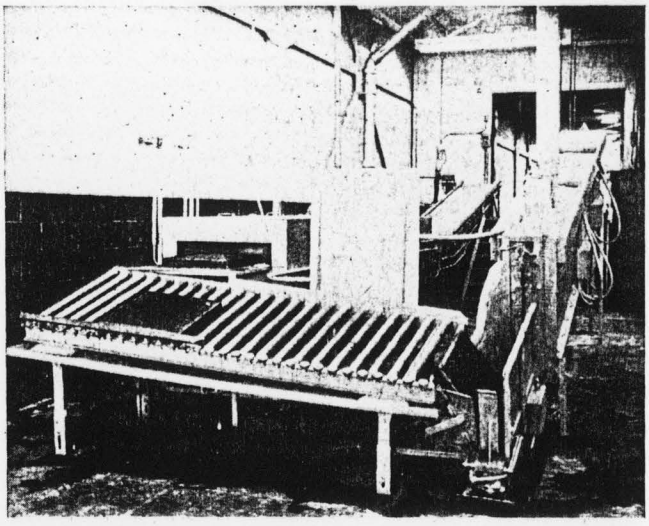


Servicing area of the new shop includes sanding towers and service pits for light servicing and fueling diesel and gas-turbine locomotives.



How air filters, coming out of the Farr washing machine, are upended to go through the dryer to the oiling unit.

Ventilation

Primary consideration was given to ventilation of the building because the diesel exhaust gases are highly toxic when concentrated. In order to assure quick exhaust of these gases, a series of hoods equipped with blowers are placed over each diesel unit service track. The roof ventilators attached to the hoods pull the gases up and out of the building immediately as they are expelled from the diesel units. The blowers may be operated singly or in banks. Other ventilators not connected to the hoods are placed about the roof to pick up gases which have escaped and risen to the underside of the ceiling. There are 109 power roof ventilators, each handling about 12,000 cfm and made by the Propellain Co., a division of Robbins & Meyers, Inc.

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Other features

Special service lines go into each 11-ft platform from which the diesel units are serviced. There are 13 lines, including three water lines, two for oil, electricity and other items needed in the servicing of the unit. The outlets are located conveniently so mechanics may make quick attachment to the line needed. There is also access under each track to facilitate servicing.

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One feature of the shop designed to save steps and speed work is provision for storerooms on both levels of the shop. Items used primarily on the lower level are in the lower store and those used by mechanics on the upper level in the upper store.

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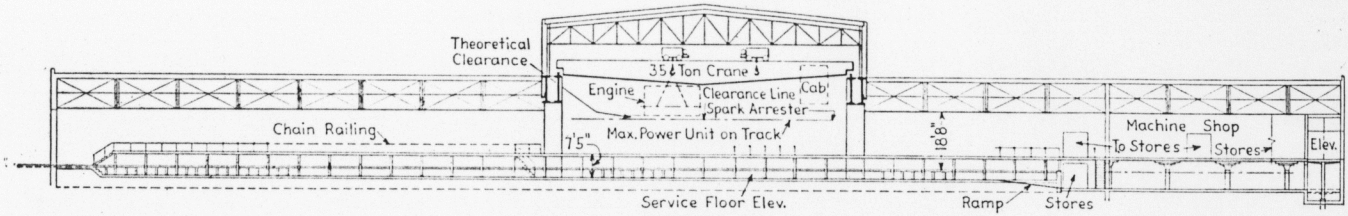

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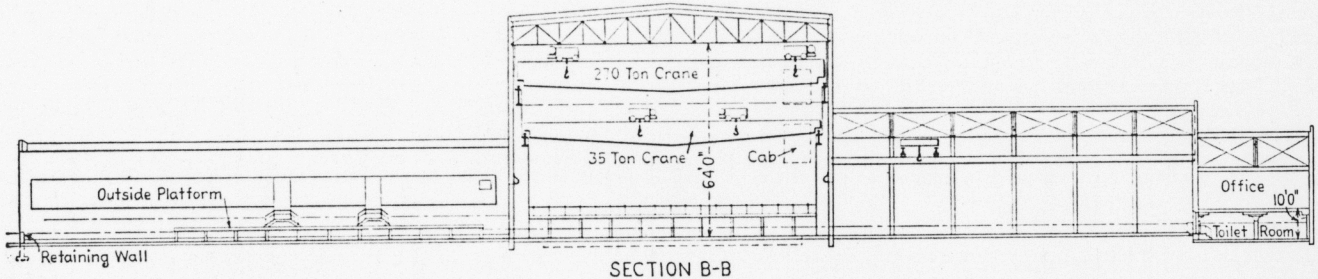

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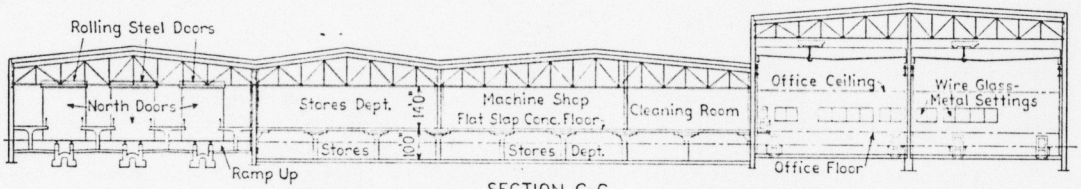

SECTION C-C

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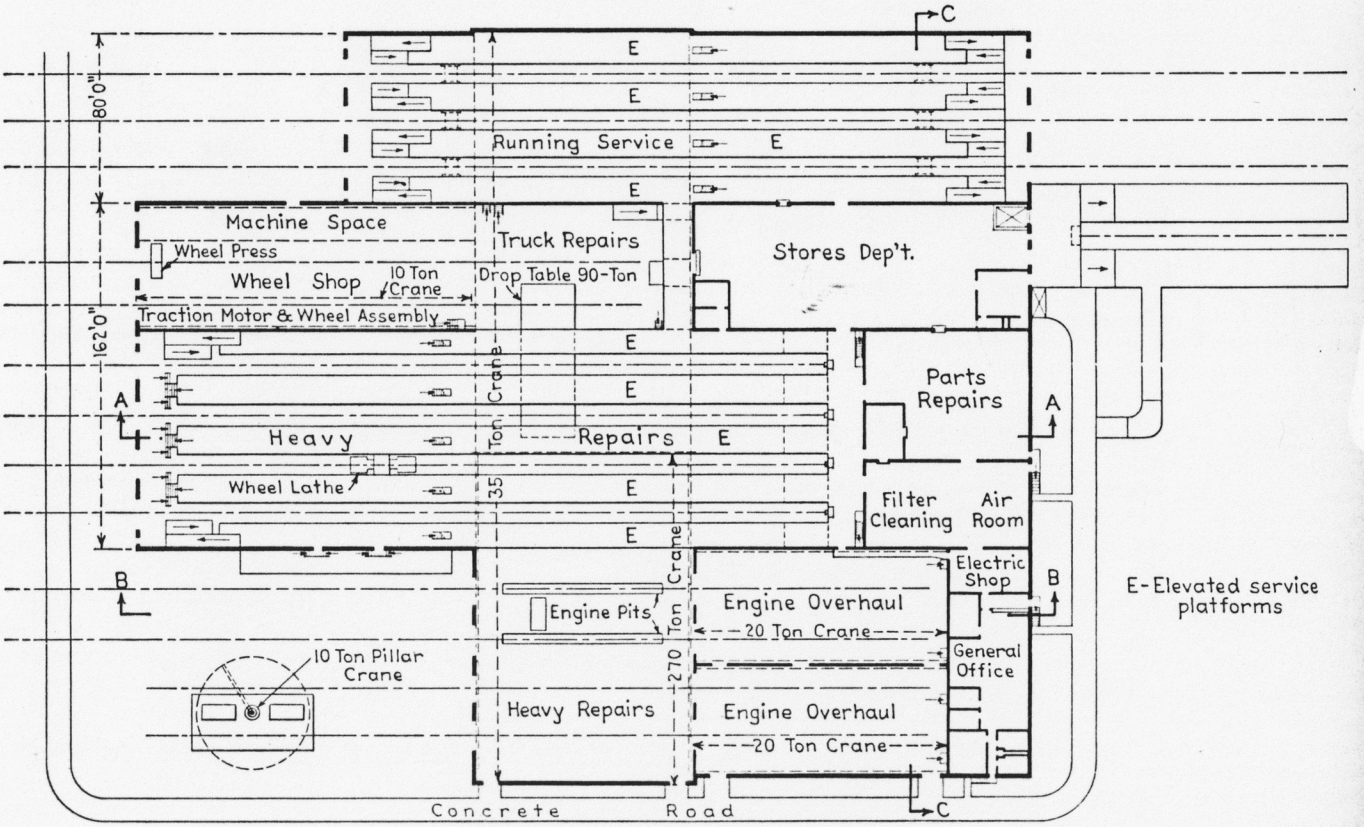

UP Diesel locomotive maintenance and repair shop.

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(Railway Locomotives & Cars, October 1955, pages 45-49)

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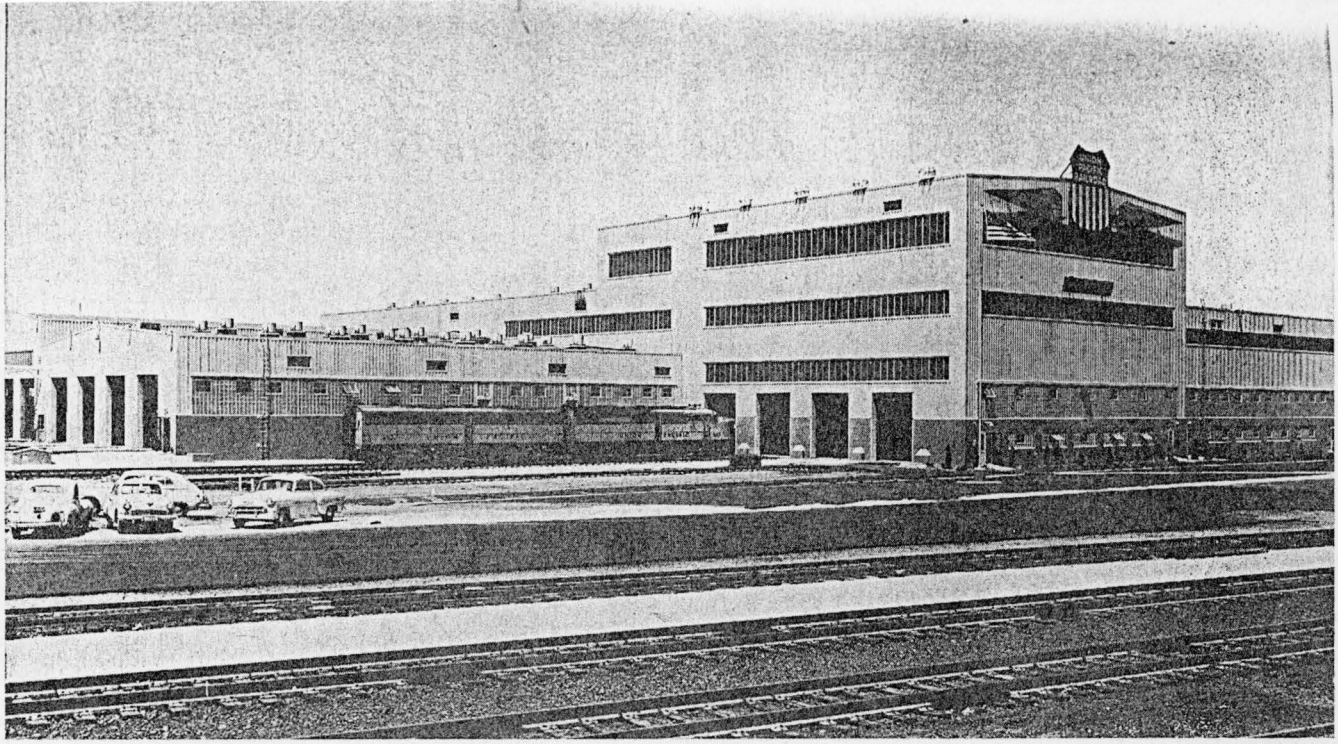


ON UNION PACIFIC AT SALT LAKE CITY . . .

Shop Handles 4,000 Diesels Monthly

Inspection and servicing of locomotive fleet in addition to present heavy repair of 6 diesel engines and units a month

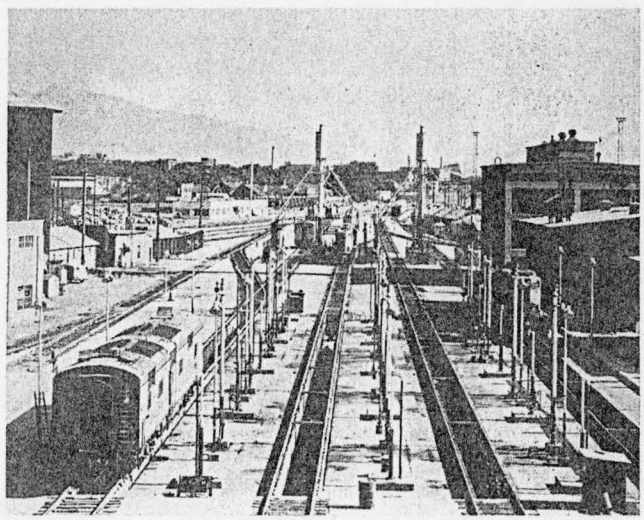
RA 139(14): 34-8 (Oct 3, 55)

While the new diesel locomotive servicing and repair shop of the Union Pacific at Salt Lake City, Utah, has been in use for a number of months, it was officially opened with the usual appropriate ceremonies August 2, as reported in the August 1 *Railway Age*, page 5. As a matter of fact, some of the facilities, including a mechanical washer and two large outside cleaning tanks, are not yet installed, and a few new machines in the wheel shop are just being put in operation.

The shop, constructed at a cost of about $6 million, is under the general jurisdiction of Elgin Hicks, operating vice-president, and D. S. Neuhart, general superintendent of motive power and machinery. Immediate supervision is exercised by E. L. Neeley, mechanical superintendent, and J. J. Carroll, newly appointed shop superintendent at Salt Lake. The shop is designed to handle all classes of maintenance and repairs from light servicing to complete heavy shop overhaul of diesel motive power units and gas-turbine electric locomotives.

The present shop output is 4,000 units inspected and serviced monthly and in addition six diesel units, including the engines, are given heavy repairs each month. With the shop in full production, employing a force of about 400 men with an annual payroll of $1,800,000, it is anticipated that the output will be stepped up to 20 heavy repair diesels a month in addition to normal daily attention to a large number of units.

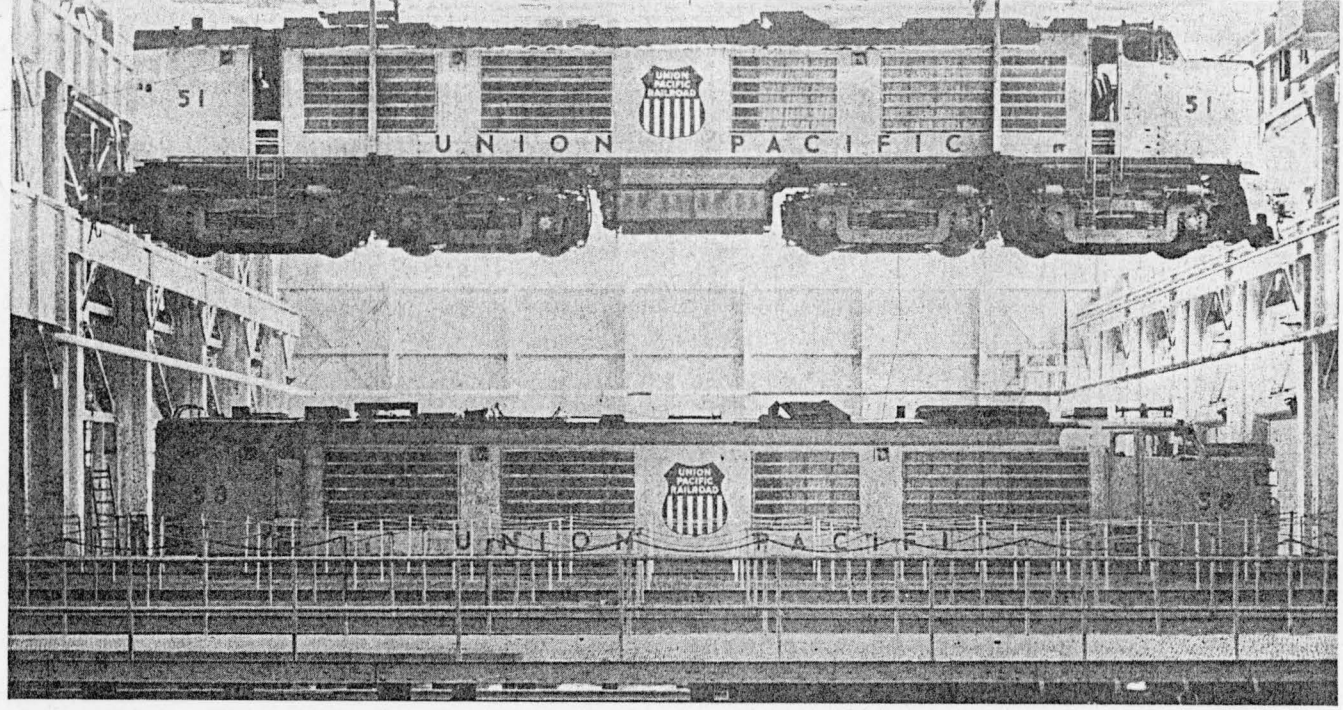
Salt Lake City was selected as the site for Union Pacific's major diesel repair shop because of the city's central and strategic location on the railroad and its excellent labor market, which permitted construction of



SERVICING AREA of the new shop includes sanding towers and service pits for light servicing and fueling diesel and gas turbine locomotives.

the shop by the company's own engineering department under the direction of W. C. Perkins, chief engineer, and R. M. Brown, Salt Lake district engineer. Construction started December 27, 1951, with all work in charge of Resident Engineer W. N. Stockton, utilizing the personnel of the company's own engineering and maintenance-of-way departments.

Preliminary work consisted of driving more than 3,200 piles 35 to 50 ft in length to support the building



GAS TURBINE LOCOMOTIVE being moved from one track to another by Whiting 270-ton traveling bridge crane.

and heavy machinery foundation in the silt-type soil. (All UP buildings in this area of Salt Lake City are constructed on piling.) More than 2,000 tons of structural steel were used and 1,600 cu yd of concrete. Principal materials included reinforced concrete, concrete blocks, glass blocks, structural steel and aluminum siding.

The main shop building, 424 by 162 ft, extends in a general north-south direction and houses four raised tracks with elevated platforms for heavy diesel unit repairs. It also includes the wheel shop, stores department, tool room, parts repair and cleaning rooms. A 324 by 80 ft wing just west of the main shop has three tracks with raised platforms and is devoted to running service repairs. A 264 by 102 ft wing extension on the east has a heavy repair bay, also two engine overhaul bays, an electric shop and the general office. The total floor area is 144,000 sq ft and the shop building covers 2.8 acres.

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U P SALT LAKE DIESEL SHOP FEATURES

Approximate cost of new facilities—$6,000,000.
Exceptional size—144,000 sq ft of floor area.
Air-cooled radio-directed crane cabs.
Lift trucks directed by 2-way radio from shop office.
Largest locomotive handling crane in the West (Safely lifts 275-ton gas-turbine unit).
Large reflective-type color sign (96 ft 9 in. long by 24 ft high).
Uses modern 90-ton drop table to remove trucks.
Equipped to true wheels while under locomotives.
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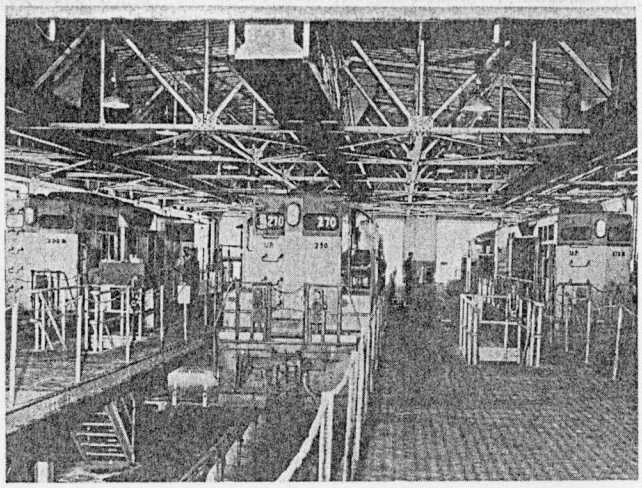
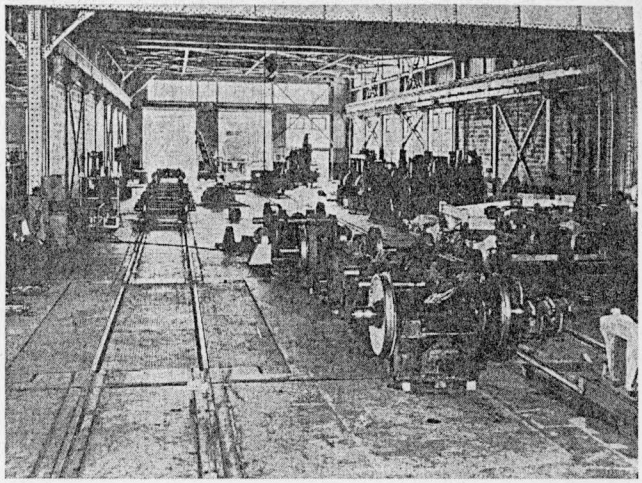


RUNNING REPAIR section of the new shop. Blower exhaust hoods are clearly shown.



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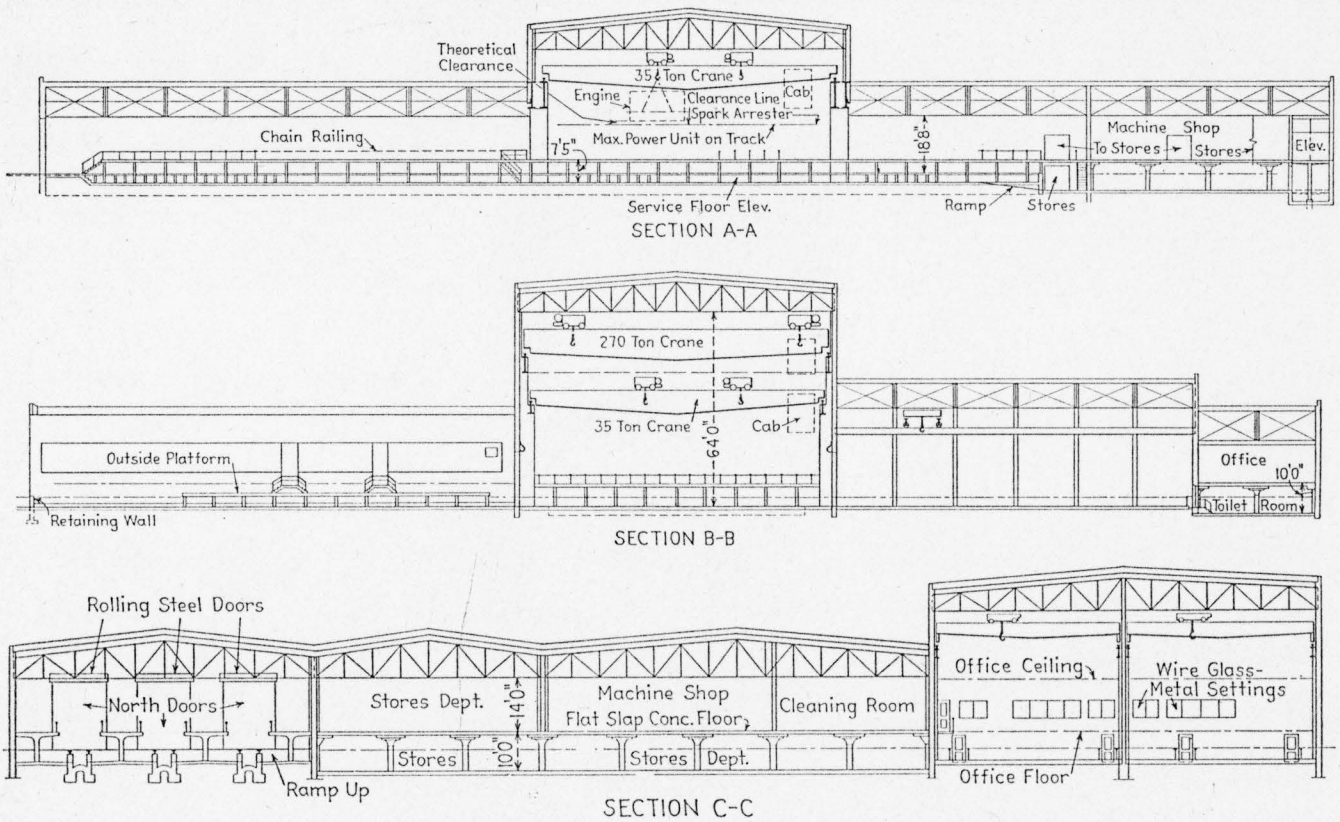
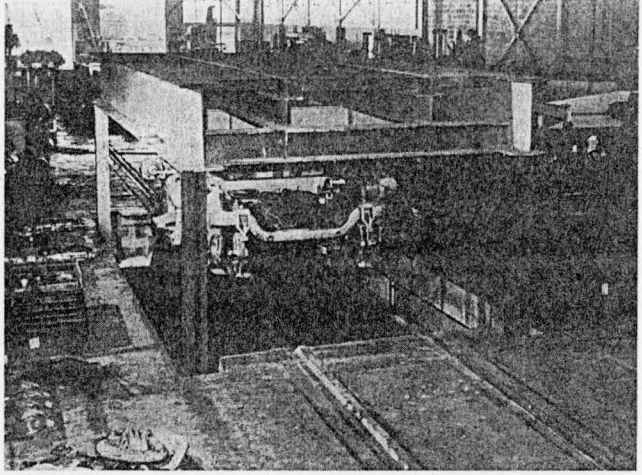


CROSS SECTIONS of the diesel shop which has five different roof elevations from 32 to 77 ft high.



WHITING DROP TABLE bringing a diesel truck up to the level of the truck shop floor.

STANDARD WHEEL-TRUING machine being operated from a push-button control panel.

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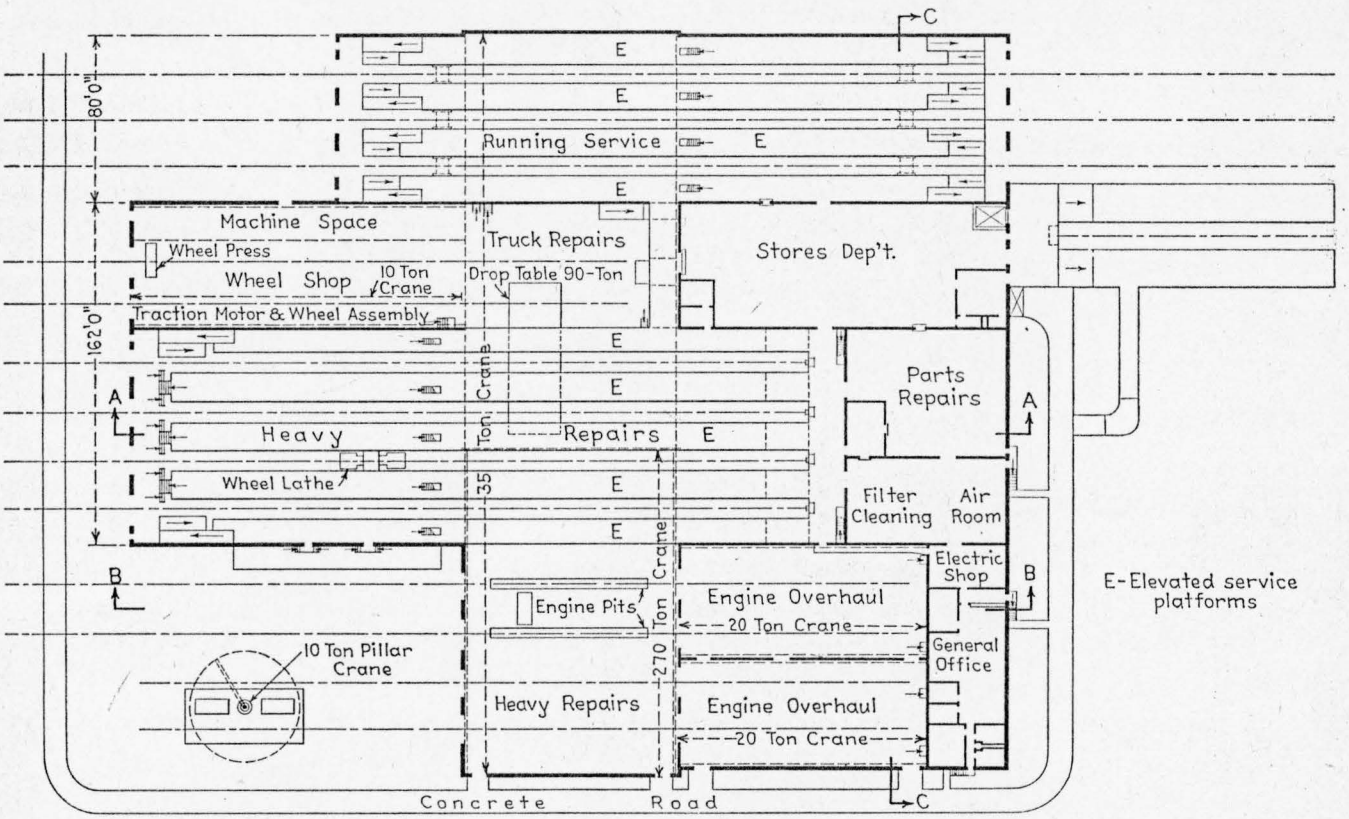
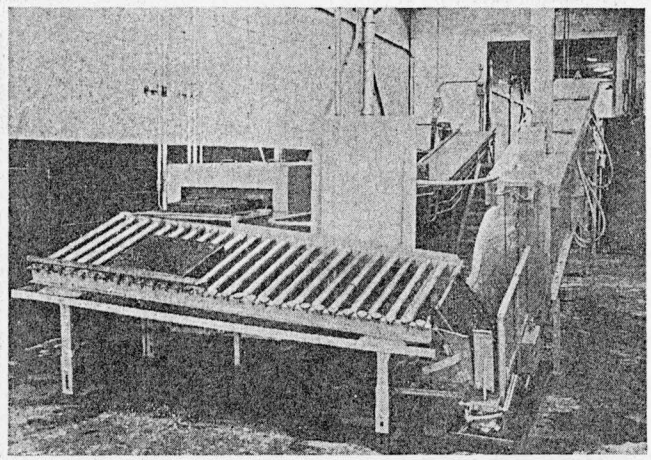
Other Equipment

Special service lines go into each 11-ft platform from which the diesel units are serviced. There are 13 lines, three for water, two for oil, electricity and other needed supplies. The outlets are located conveniently so mechanics may make quick attachment to the line needed. There is also access under each track to facilitate servicing.

All electric power is brought into the building underground and then distributed for various needs.



THE UNION PACIFIC'S SALT LAKE diesel repair shop covers 2.8 acres.



AIR FILTERS, coming out of Farr washing machine, are upended to go through dryer to oiling unit.

Outside the shop, special sanding equipment permits sanding a 4-unit diesel on each of four separate tracks simultaneously.

A special water-treating plant supplies water for Vapor steam generators. No painting is done in the shop.

One feature of the shop designed to save steps and speed work is provision for storerooms on both levels. Items used primarily on the lower level are in the lower store and those used by mechanics on the upper level in the upper.

Another machine- and man-hour saving device is the Motorola two-way communication equipment installed on three portable lift trucks, three Chore Boys, one service truck and one diesel locomotive crane. A radio transmitter in the shop foreman's office enables a clerk to act as dispatcher for all of this important material-handling equipment to make sure it gets where it's needed in the shortest possible time.

MAJOR MACHINES IN SALT LAKE CITY SHOP

1 Standard wheel-truing machine
1 De Laval oil Puri-Filter unit
*1 Paxton-Mitchell Model-240 wheel-washing machine
*1 Yale 6,000-lb capacity electric fork-lift truck
1 Rogers 600-ton capacity wheel press
1 Westinghouse Type 4-C air brake test rack
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On Union Pacific At Salt Lake City. . .

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Inspection and servicing of locomotive fleet in addition to present heavy repair of 6 diesel engines and units a month.

While the new diesel locomotive servicing and repair shop of the Union Pacific at Salt Lake City, Utah, has been in use for a number of months, it was officially opened with the usual appropriate ceremonies August 2, as reported in the August 1 Railway Age, page 5. As a matter of fact, some of the facilities, including a mechanical washer and two large outside cleaning tanks, are not yet installed, and a few new machines in the wheel shop are just being put in operation.

The shop, constructed at a cost of about $6 million, is under the general jurisdiction of Elgin Hicks, operating vice-president, and D. S. Neuhart, general superintendent of motive power and machinery. Immediate supervision is exercised by E. L. Neeley, mechanical superintendent, and J. J. Carroll, newly appointed shop superintendent at Salt Lake. The shop is designed to handle all classes of maintenance and repairs from light servicing to complete heavy shop overhaul of diesel motive power units and gas-turbine electric locomotives.

The present shop output is 4,000 units inspected and serviced monthly and in addition six diesel units, including the engines, are given heavy repairs each month. With the shop in full production, employing a force of about 400 men with an annual payroll of $1,800,000, it is anticipated that the output will be stepped up to 20 heavy repair diesels a month in addition to normal daily attention to a large number of units.

Salt Lake City was selected as the site for Union Pacific's major diesel repair shop because of the city's central and strategic location on the railroad and its excellent labor market, which permitted construction of the shop by the company's own engineering department under the direction of W. C. Perkins, chief engineer, and R. M. Brown, Salt Lake district engineer. Construction started December 27, 1951, with all work in charge of Resident Engineer W. N. Stockton, utilizing the personnel of the company's own engineering and maintenance-of-way departments.

[photo caption] Servicing Area of the new shop includes sanding towers and service pits for light servicing and fueling diesel and gas turbine locomotives.

Preliminary work consisted of driving more than 3,200 piles 35 to 50 ft in length to support the building and heavy machinery foundation in the silt-type soil. (All UP buildings in this area of Salt Lake City are constructed on piling.) More than 2,000 tons of structural steel were used and 1,600 cu yd of concrete. Principal materials included reinforced concrete, concrete blocks, glass blocks, structural steel and aluminum siding.

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The main shop building, 424 by 162 ft, extends in a general north-south direction and houses four raised tracks with elevated platforms for heavy diesel unit repairs. It also includes the wheel shop, stores department, tool room, parts repair and cleaning rooms. A 324 by 80 ft wing

just west of the main shop has three tracks with raised platforms and is devoted to running service repairs. A 264 by 102 ft wing extension on the east has a heavy repair bay, also two engine overhaul bays, an electric shop and the general office. The total floor area is 144,000 sq ft and the shop building covers 2.8 acres.

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Cleaning various locomotive parts constitutes a major operation in any diesel shop and the UP Salt Lake shop is well equipped in this respect. One of the newer machines is a Farr automatic air filter washer with ingenious roller conveyors moving filters to the drier and oiler at the rate of 60 an hour.

UP Salt Lake Diesel Shop Features

- Approximate cost of new facilities—$6,000,000.
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