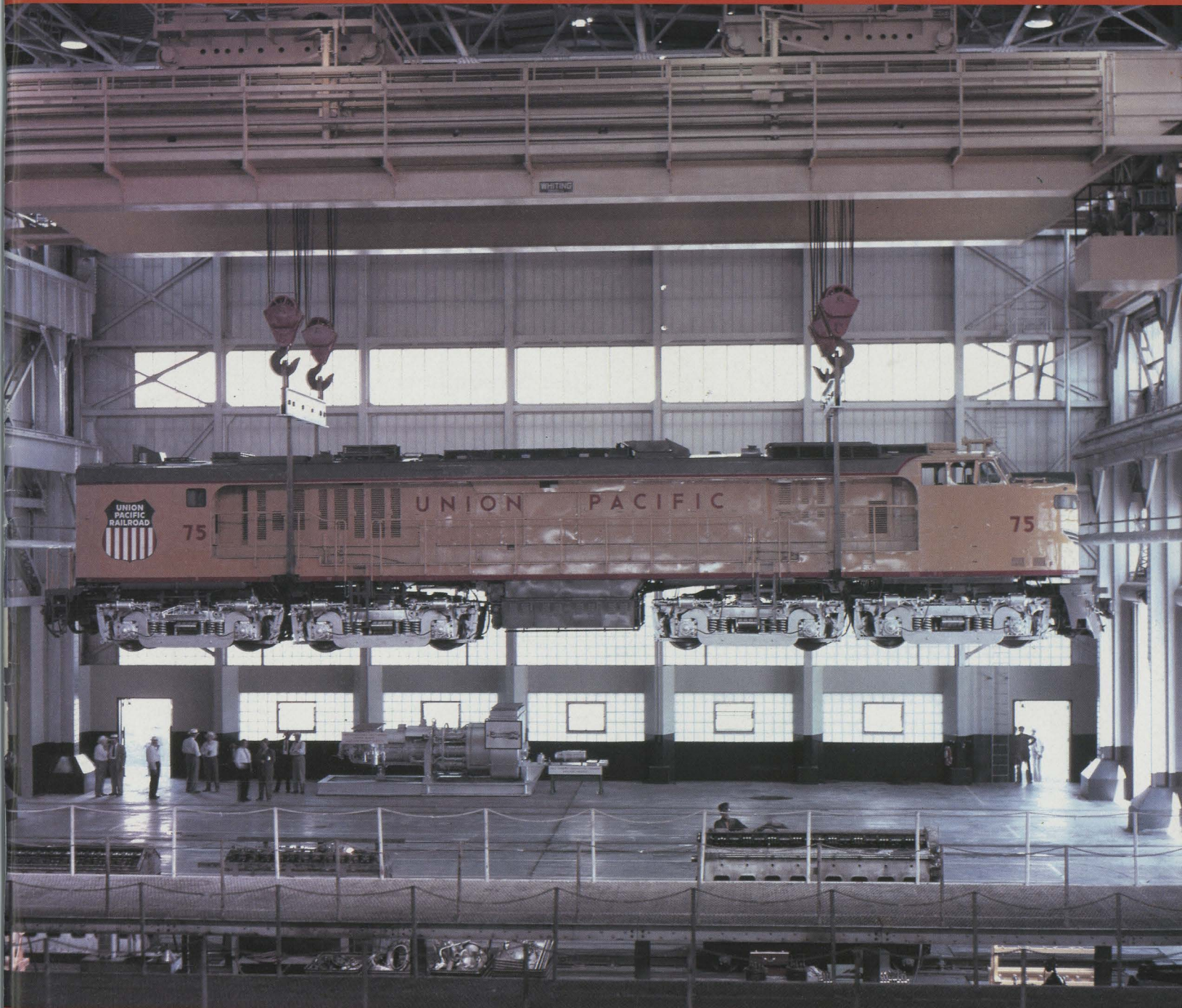


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# The Streamliner



**THE SALT LAKE CITY DIESEL SHOP  
RAILWAY POSTAL SERVICE ON THE UP  
F-50-11 CLASS FLAT CARS**





# UNION PACIFIC'S SALT LAKE CITY DIESEL SHOP

*Much planning and thought went into the location of Union Pacific's first "Diesel Locomotive Maintenance and Repair Shop," a facility intended to serve the needs of the entire railroad.*

*By Don Strack*

The new Salt Lake City Shops were formally opened on Tuesday, August 2, 1955, at a ceremony jointly sponsored by the Union Pacific Railroad, the Salt Lake City Chamber of Commerce, and the Salt Lake City Rotary Club. The construction of the new shop began in December 1951 with the demolition of the old Salt Lake City roundhouse. The new shop cost \$6 million to build and initially provided employment for about 400 men, adding a \$1.8 million payroll to the local economy and bringing UP's employment in Utah to over 5,000 people. At its peak in the mid 1970's, the shop employed over 500 men and women. At the time it was built, the new shop was the most modern in the nation and would handle all types and classes of maintenance and repair from light servicing to complete heavy overhaul of both diesel motive power units and gas turbine electric locomotives.

Much planning and thought went

into the location of Union Pacific's first "Diesel Locomotive Maintenance and Repair Shop," a facility intended to serve the needs of the entire railroad. Planning began in late 1950 with the pending arrival of what would later be known as the "Little Turbines," road numbers 51-60. These locomotives were 4,500 horsepower gas turbine-electric locomotives that were yet another in a long line of Union Pacific motive power innovations. Tests on the design had begun in June 1949 and lasted until April 1951. The first production units arrived and entered service in January 1952. UP's design engineers knew these cutting-edge technology units would require specialized maintenance facilities, and the search began for a suitable location. All of the big terminals in the Eastern District were still very much involved with supporting steam operations. This left the Northwestern and South-Central Districts, which consisted of the sub-



sidiary Oregon Short Line and Los Angeles & Salt Lake Railroads, and the Oregon-Washington Railway & Navigation line. The two large terminals suitable for improvements were Pocatello, Idaho, and Salt Lake City, Utah. (Nearby Ogden, Utah, remained as the western terminal of UP's Wahsatch grade and continued to support the road's large steam motive power, including the Big Boy and Challenger locomotives.) Pocatello was the center for the road's maintenance-of-way shops, and still supported extensive steam operations. This left Salt Lake City, whose large 32-stall roundhouse was in need of serious attention after losing a large part of its roof in a freak wind storm a year earlier. Utah, and Salt Lake City specifically, was known to have a





large and efficient labor pool that was projected to be able to supply the new shop facility with its needed work force.

A shop facility completely dedicated to the repair of diesel and turbine locomotives would be needed, and soon. Union Pacific had completely dieselized the Los Angeles & Salt Lake route between its namesake cities in 1948 and 1949, and the entire railroad west of Green River, Wyoming, was completely dieselized by mid-1953. In December 1953, Union Pacific placed the largest single order for locomotives from one builder. The order's value was placed at \$35.7 million and included 190 freight locomotives and 15 passenger locomotives. These increased numbers of freight and passenger locomo-



Top: At the time of the shop's opening in 1955, the exterior was very plain. This view shows the new shop building with its combination concrete, glass block, and aluminum siding. Later, a cleaning vat, a large, 10-ton pillar crane, and a high fence would be added in the area adjacent to where the ALCo passenger units are. Union Pacific Museum collection 73-246

Inset: Salt Lake Shops were the focal point for heavy repair of UP's turbine locomotives, both the smaller 4,500 horsepower "Standard" and "Veranda" models, and the much larger 8,500 (later 10,000) horsepower three-unit "Big Blows." Here unit 59 receives an overhaul in the early 1960's. Don Sims



Workers adjust fueling devices in the "Goat Pit," an outdoor servicing area near the the Salt Lake City roundhouse, in December 1952. This area served as the diesel facility prior to the completion of the Salt Lake City Diesel Shops and was retained after its completion to service switch engines.  
Don Sims

tives, along with the on-going delivery of the 25 small turbines, delivered between January 1952 and October 1954, made the completion of the new Salt Lake shops a much awaited event.

The 32-stall Salt Lake City roundhouse that the new diesel shop replaced was itself completed in 1907 with just 20 stalls, as part of the new North Yard joint yard between the new San Pedro, Los Angeles & Salt Lake Railroad (completed in 1905, and changed to the Los Angeles & Salt Lake Railroad in 1916), and the Oregon Short Line Railroad, which had been operating trains through Salt Lake City since its predecessor Utah Central was completed in 1870. The Salt Lake terminal had consisted of the large roundhouse, an adjacent powerhouse (completed in 1918), and a large, 500-ton coaling trestle.

During 1914 the terminal was servicing 53 steam locomotives, including 36 for OSL and 17 for SPLA&SL. The compressors in the powerhouse were changed from steam driven to electric motor driven in 1924. At the same time, seven 105-foot stalls were added to the roundhouse, and a pneumatic sanding system was added to the coaling trestle. A new powerhouse was added in 1944 and remains today. Salt Lake City was one of the first yards to receive diesel switchers, in 1942. The roundhouse was modified in that same year to accommodate servicing for the new units, by the addition of wooden work platforms and an overhead monorail crane system that would allow maintenance on the diesel engines. Also in 1942, a new double track mainline was located to the east of the roundhouse allowing passenger trains to avoid the

congestion of the freight yard. The double track mainline was moved slightly to accommodate the new diesel shop, and remains in service today.

Although the South-Central District would soon be fully dieselized, in September 1948, there were still substantial numbers of steam locomotives being serviced. In a letter asking that the roundhouse roof be repaired as soon as possible, the mechanical superintendent for Salt Lake, A. R. Nelson, pointed out that the proposed retirement of stalls 9 through 24 (deemed the most unsafe part of the structure following a recent inspection) must be delayed due to the large numbers of steam locomotives still being worked on. He stated that they were servicing 22 to 24 steam locomotives per day, as well as having five steam locomotives and one diesel switcher being held for



extended repairs. Stalls 20 to 23 served as the drop pit for the change-out of steam locomotive axles and diesel locomotive traction motors. As mentioned, a freak wind storm stripped the roundhouse roof in 1949, but the roof had already been inspected and declared unsafe. Temporary repairs were made, which included removal of the distinctive clerestories. Many proposals were made to repair the roof and its underlying framing, or to completely demolish the building. One proposal had stalls 5 through 20 being converted to the railroad's Dining Car and Hotel (DC&H) system-wide laundry. The new DC&H laundry was completed in July 1951 in nearby Ogden, Utah, thirty-five miles to the north.

Stalls 5 through 20 of the roundhouse were formally retired on December 29, 1949, and that portion of the structure was demolished. The remaining stalls, numbers 1 to 4, and 21 to 32, were retained to service the few remaining road steam locomotives, and the growing numbers of diesel switchers and diesel road locomotives. As work on the new shop progressed, the remaining portions of the roundhouse were demolished, with the last, stalls 1 to 4, and stalls 31 and 32, still standing as the orange-primer painted steel structure of the new shop rose slowly skyward.

Along with the construction of the new shop building itself, the new Salt Lake shop facility included a new four-track service facility located on tracks 6 to 9, just south of the new shop building. At the far south end of the service tracks, a new four track sanding facility was constructed. The terminal's 100-foot girder and lattice design turntable was retained, but relocated from its original position just south of the new shop building, to the shop's northwest side. This origi-

nal pin-connected turntable was later replaced by the retired turntable from Lynndyl, Utah, a division point 116 miles south of Salt Lake City.

With the delivery of its growing fleet of new diesel locomotives, UP found that it soon had a shortage of shop space. During 1953, UP received ten SD7's, 30 GP7's, 42 SW9 switchers, and 44 E8 A and B passenger units. During 1954, the road accepted delivery of 169 GP9's, 75 – unique to UP – GP9B's, for freight service, and 15 E9 A and B units for passenger service. The maintenance space that the new shop would provide was badly needed, and many under-construction photos from as early as mid 1954 show locomotives being worked on while situated on the shop's tracks, with construction activity taking place immediately nearby.

The new Salt Lake Shop was unusual in that it was designed by the railroad's own engineering staff, and built by the company's own Bridges & Buildings work force. Preliminary work consisted of driving more than 3,200 piles 35 to 50 feet in length to support the building and its heavy equipment. Bridges and Buildings Department employees remember driving as many as four piles end-to-end before striking solid footing. The construction was a combination of reinforced concrete, with more than 2,000 tons of structural steel used in the original construction. The finished outside surface was a combination of vertical aluminum siding and solid glass blocks. Over 1,600 cubic yards of concrete were poured.

Originally, the south wing was 324 feet long and 80 feet wide. The north wing, which covers the store department and the north ends of tracks 1, 2, and 3, was 264 feet long and 102 feet wide. There were five

different roof elevations ranging from 32 feet, over the running repair tracks, to 77 feet over the main, high bay that housed the 270-ton crane.

When it was completed in 1955, it was the largest diesel shop under cover in the country, with over 144,000 square feet (3.3 acres) under cover, as well as the largest steel insulated building of any kind. UP's own North Platte shop became UP's largest shop when it was completed in 1971, and the Downing B. Jenks shop in North Little Rock, completed in 1984, is also in the same league.

Unusual equipment in the new Salt Lake shops included an overhead traveling crane of 270-ton capacity, the largest locomotive handling crane in the west (this may still be true today). The crane was actually installed in April 1954 and was capable of lifting the largest diesel on the Union Pacific and even the heavier gas turbine-electric locomotives. The huge crane's lifting capacity was thoroughly tested on February 5, 1955 when it successfully lifted fully serviced and loaded turbine 51, moving it from track 10 to track 12, over number 58 parked on track 11. The lifting capacity of the crane has served the railroad well for over 43 years, but the length of the shop's lifting bay was proven to be a limiting factor with the arrival of the 6900-class Centennial locomotives in 1969. The Centennials were 98 feet, 5 inches over their coupler pulling faces, and weighed 545,432 pounds (272 tons) fully serviced. While the lifting bay was completed with an interior length of 102 feet, the installation of overhead steam pipes limited the interior length to a bit over 95 feet. This shorter interior length meant that the Centennials could only be lifted up to the height of the tops of the bay doors, where the steam pipes were





located. In order to allow truck repairs on the Centennial class, whose four-axle trucks were too long for the 90-ton drop table, the locomotives were lifted sufficiently to allow the trucks to be disconnected and rolled out from under the locomotive. If operations dictated the immediate need for the locomotive, a spare truck was located at the opposite end and rolled into place. If not immediately needed, the locomotive was lowered to a minimal height and left suspended from the crane, awaiting the truck's repair and re-installation. The shop's original equipment included, in addition to the 270-ton crane, a 35-ton model. In the 1973 expansion, a 10-ton

model was added in the main east-west bay and another 10-ton unit in the new south wing of the running repair tracks.

Salt Lake Shops have a 90-ton drop table for removing complete truck assemblies from under any diesel unit. The drop table and its associated drop pit span tracks 6 and 7, allowing truck assemblies to be removed and brought into the central truck bay (track 5), where they can be repaired. The drop pit is also equipped with an integral smaller table that allows removal of single-axle traction motors without removing the entire truck assembly. In 1973, a single-axle drop table was added to the new running repair tracks which

could remove single traction motor assemblies. The rails of tracks 1 through 3, and tracks 6 through 9, are elevated to allow access to locomotive running gear, such as the trucks, brakes, and journal boxes. These same tracks are equipped with elevated platforms at the locomotive walkway level and depressed pits below the shop floor to allow better access to the underside of each locomotive. The shop was also built with a wheel-truing machine, which remains today as a major center of activity in the shop complex. The wheel-truing machine permits the re-profiling (truing) of the wheel tread of the wheels of locomotives without removal of the wheel sets from the units.

The shop originally displayed the largest (up to that time) reflective sign ever made. The sign was over 96 feet long and featured a 24 foot Union Pacific shield, with a freight train on one side and a Domeliner passenger train on the opposite side. The shield remains today, but the two trains were removed in the late 1960's.

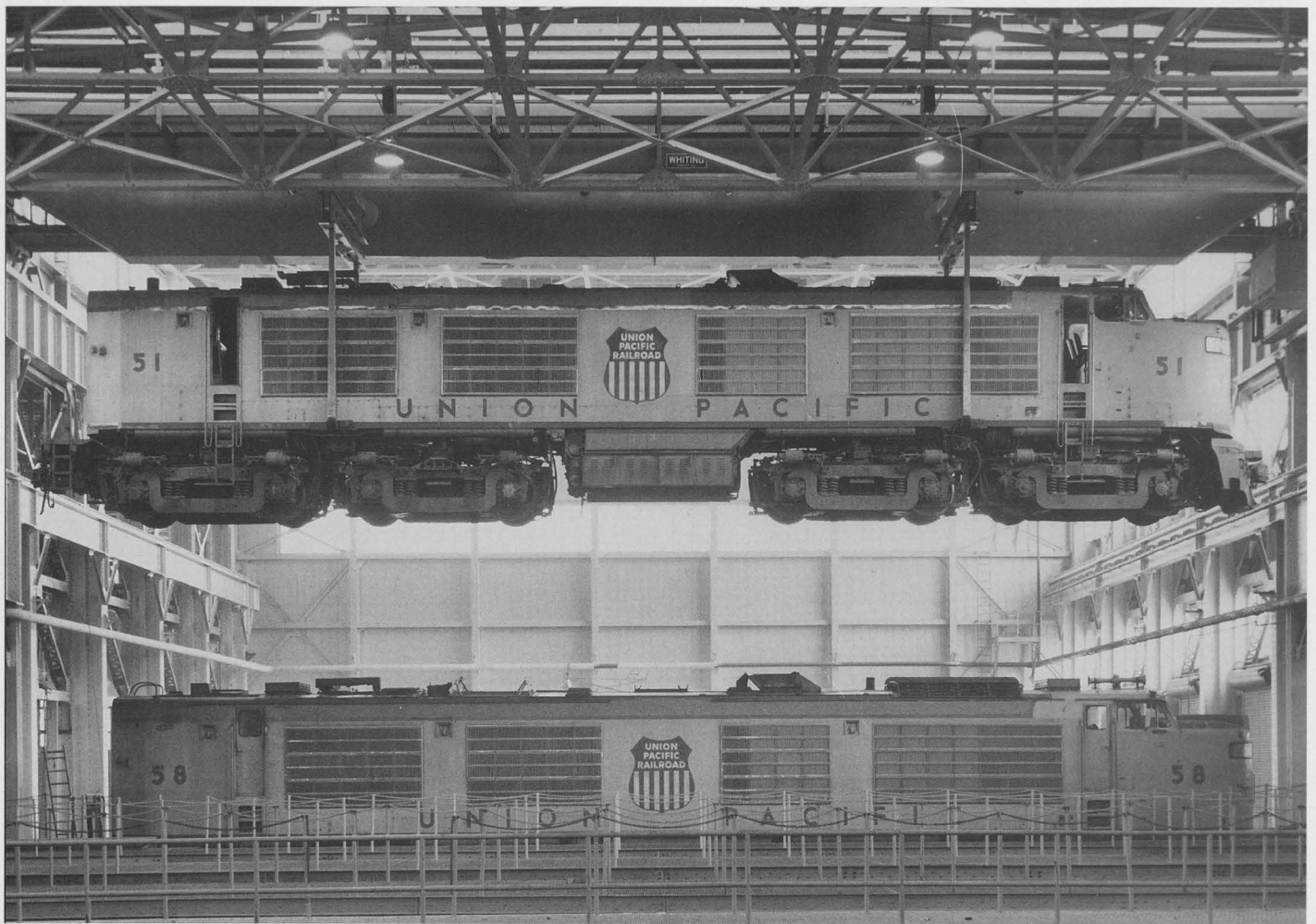
Between 1954 and 1957, Union Pacific's 1400 class F3's which hadn't been re-assigned to the Northwest in 1950, were converted internally to F7's by the railroad's own shop forces. While other shops on Union Pacific may have done some of the work, most of the conversion project was done at the new Salt Lake Shops. The conversion consisted of installing a

567BC engine in place of the original 567B engine, and updating the electrical components. Many of the F3's also received the F7-type of dynamic braking with the three-foot diameter cooling fan. Although the trade press announced that the F3 to F7 conversions were being done by EMD (one source said that fifty-four units were to be done on the UP), the upgrade was projected to be so extensive that UP and EMD decided to complete it at the railroad's new shop facility in Salt Lake City.

This project, along with the prospects of the same type of work to be done on both the AT&SF and the SP, was a leading factor in General Motor's Electro-Motive Division

When they were completed in 1955, the Salt Lake Shops held 144,000 square feet under one roof, making them the largest such building in the nation. This view of the shop's west side shows the relocated 100-foot turntable, moved from its original location along the south side (right side here) of the new shop building. The new shop stands on the same spot as the original 32-stall Salt Lake roundhouse. Union Pacific Museum collection LA 1065-1-3





On February 5, 1955, the lifting capacity of the new 270-ton crane was dramatically illustrated when "Standard" turbine number 51 was lifted and moved from track 10 to track 12, moving it above and over turbine 58, situated on track 11. The steam pipe mounted to the walls just above the tops of the high bay doors, along with the crane rails further up, were the reason that the 6900-class Centennials could not be moved from one track to the other. Their 98 feet, 5 inches length (compared to the turbines' 83 feet, 6 inches) did not clear the pipes. Union Pacific Museum collection

(EMD) opening its own facility in North Salt Lake. At the same time as the completion of Union Pacific's Salt Lake Shops, EMD completed its North Salt Lake facility about five miles north along the mainline to Ogden from the new Salt Lake Shops. The official dedication was on Wednesday, April 6, 1955.

By the early 1950's, the railroads in the west were well into entering their second phase of dieselization, upgrading from FT and F3 to F7 and F9 freight locomotives, and from the earlier models of the pioneering E-series to the newer E8 and E9 passenger locomotives. A facility was needed

to perform the remanufacture of earlier versions of EMD's 567 diesel engine to its most modern version, the 567BC and 567C types.

Rather than Union Pacific sending the old engines and generators all the way from Salt Lake City to La Grange, Illinois, for remanufacture and upgrading, the railroad only had to move these locomotive components five miles north to EMD's new shop.

EMD sold the North Salt Lake facility in April 1965, and in 1971, General Electric moved into the shop calling it the "Salt Lake Apparatus Service Shop." GE needed a facility

for some rework on components of UP's U50C's, along with work on other heavy rotating electrical gear for the company's other divisions. This GE shop was where some of the 8,500 horsepower, three-unit turbines were stripped after UP traded them in during the early 1970's. As this is written in 1998, the shop is still serving as a focal point for GE's service to its customers nationwide.

During early 1992, an extensive truck modification was completed on UP's then-new 9100 class Dash 8 40C's (now known as C40-8's), and like the F3-to-F7 project with EMD, the workload was shared between the



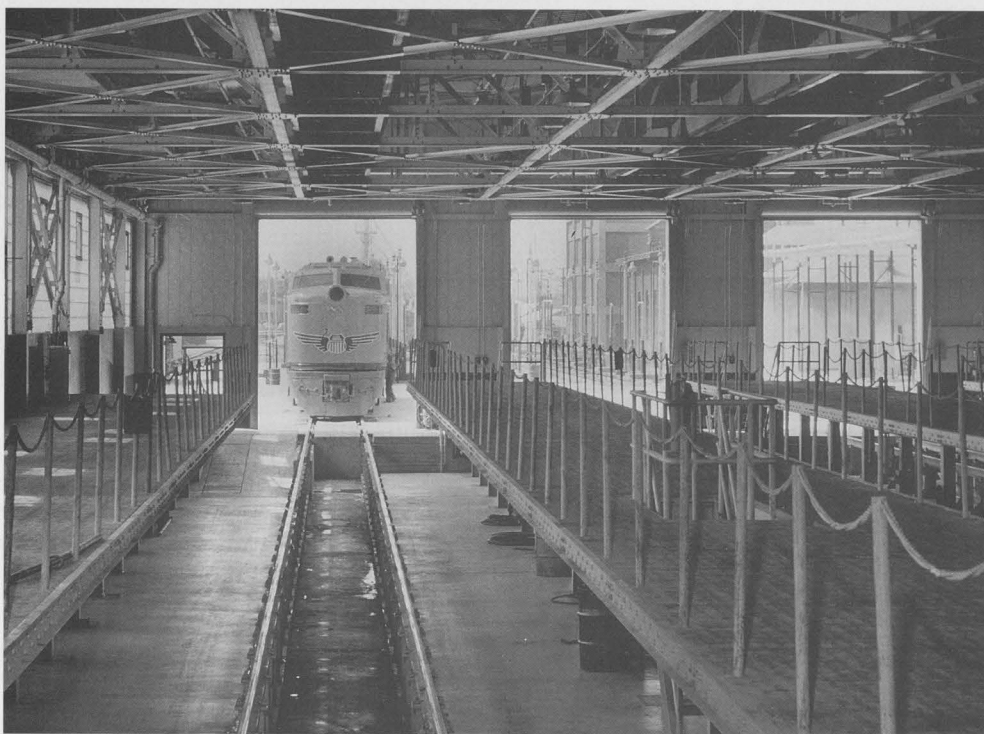
North Salt Lake facility and UP's Salt Lake shops.

Salt Lake shops were the focal point for heavy repair of UP's turbine locomotives, both the smaller 4,500 horsepower "Standard" and "Veranda" models, and the much larger 8,500 (later 10,000) horsepower three unit "Big Blows." As the 51-75 series little turbines were retired between April 1962 and December 1963, the specialized facilities and highly trained mechanics concentrated on keeping the 1-30 series Big Blow three-unit turbines maintained. Many factors contributed to the diminishing use of Union Pacific's unique turbine units, including the challenges of dedicating special areas within Salt Lake shops for turbine maintenance. As the road's diesel fleet continued to grow, there was more and more demand for additional space for maintenance. By the late 1960's, the turbine fleet was falling from favor, and the first three-unit turbine was retired in August 1968. The last of the turbines was retired in February 1970.

In March 1973, work began on a major expansion of Union Pacific's Salt Lake Shops, which included a 400-foot, two-track service facility located just west of the diesel shop to replace the older, original four-track service facility which had been constructed just south of the shop. The expansion added more running repair space that enclosed the south ends of tracks 1 through 3 at the southwest corner. Also added were two 140-foot long canopies to the south end and the north end of track 1, for the purposes of weather protection of workers while performing inbound (north end) and outbound (south end) inspections on the locomotives. A 200-foot load test platform was also built along the west side of the main shop building. This load test plat-

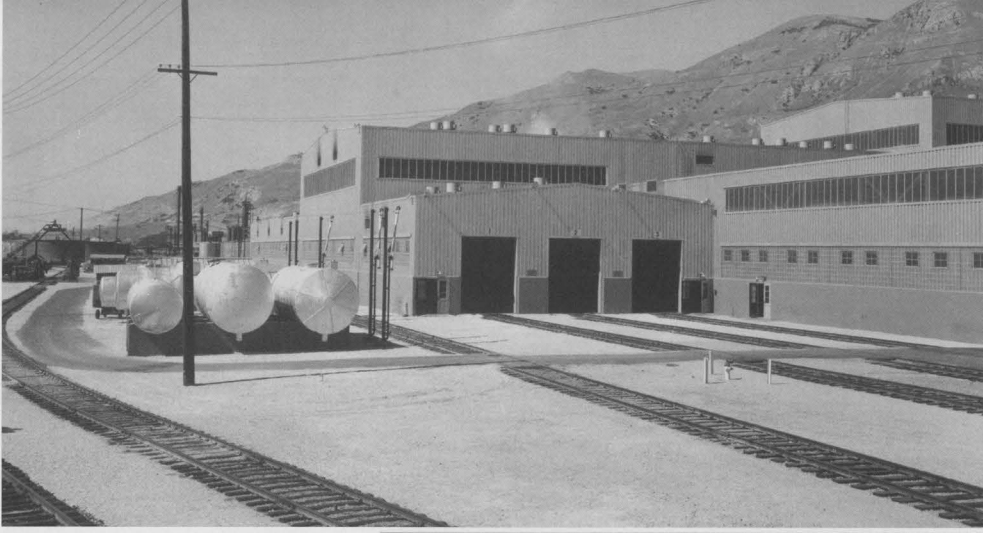


Tracks 1, 2, and 3 in the Salt Lake Shop were assigned to running repairs on the railroad's locomotive fleet. These are repairs that can be completed in eight hours or less. In this view looking out the north end, GP9 number 250 is being worked after recently arriving at the head of Train 270, the daily time freight between Pocatello and Salt Lake. Just visible above number 250's coupler is its road number in red 3-inch numerals. Note also the overhead exhaust ventilators. Union Pacific Museum collection 38050



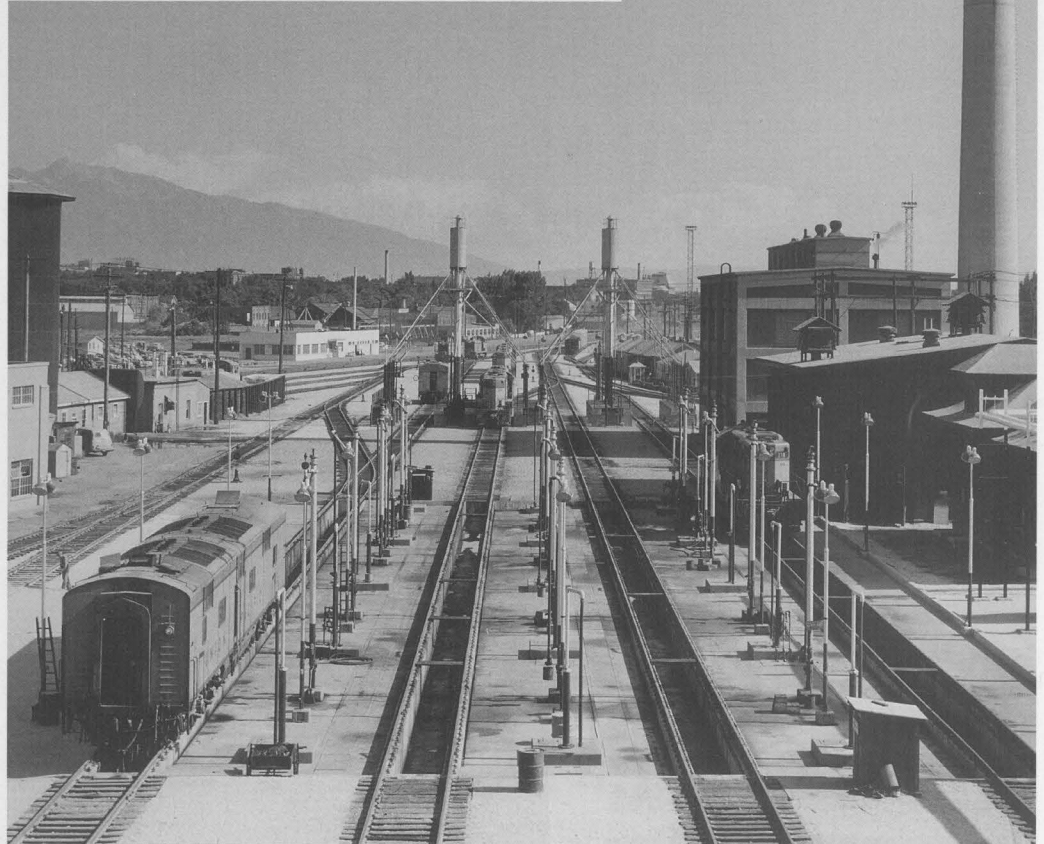
This view is looking out the south doors of tracks (from right to left) 6 to 9. These four tracks served as heavy repair tracks, and were equipped with both walkway-level platforms, elevated rails and service pits. Union Pacific Museum collection 38049





Above: The south end of the running repair tracks are shown in this view of the just completed shops. Notice the pristine condition of the surrounding area, showing the importance that Union Pacific placed on its appearance to the public. Union Pacific Museum collection

Right: Along with the new locomotive shop, in 1955, Union Pacific's B&B forces completed a new, four-track servicing facility, which included a double sand tower that served the same four tracks. These same tracks continued beyond the service pits and into the new shop as shop tracks 6 to 9. This view, taken from the shop's roof, shows on the right, the former master mechanics building, the old powerhouse, and the new powerhouse, completed in 1944. Downtown Salt Lake City is in the distance. Union Pacific Museum collection



form allowed the location of the four load test boxes to a single location, replacing two already there and moving two others that had been located along the east side of the shop. One of the factors for this move were protests from residential neighbors to the east complaining of the sound of diesel locomotives operating at full throttle load at all hours of the day and night.

Today, all locomotives are equipped with a self-load feature and

units are tested at any convenient location within the exterior shop complex. The 1973-built load test platform was removed during 1993. The improvements also included a group of retired tank cars that were installed to accommodate treated and untreated waste water, used lubricating oil, new lubricating oil, and support bearing oil. The large powerhouse (completed in 1944) was completed re-equipped with two modern water-tube, 30,000-pound per hour,

gas-oil fired steam generators. The new steam generators replaced three very large fire-tube boilers. Also added was a large, modern rotary air compressor that replaced the two 1,500 cubic foot compressors located in the old powerhouse.

Improvements in the shop interior included the installation of the system air brake shop, which featured fourteen workstations with individual spray booths and cleaning hoods, two cleaning vats, and a rolling conveyor





This October 1965 aerial view of Union Pacific's Salt Lake City locomotive shop shows the general layout of the shop in relation to the large North Yard. The yard and shops are located about a mile north of Salt Lake City's downtown. This northward looking view also shows the extensive AMOCO petroleum refinery situated on the yard's northeast side, and Interstate Highway 15 along the yard's west side. The mainline of the former Denver & Rio Grande Western between Salt Lake City and Ogden, Utah, can be seen running along the immediate west (left) side of the yard. Union Pacific Museum collection LA 1065-1-6

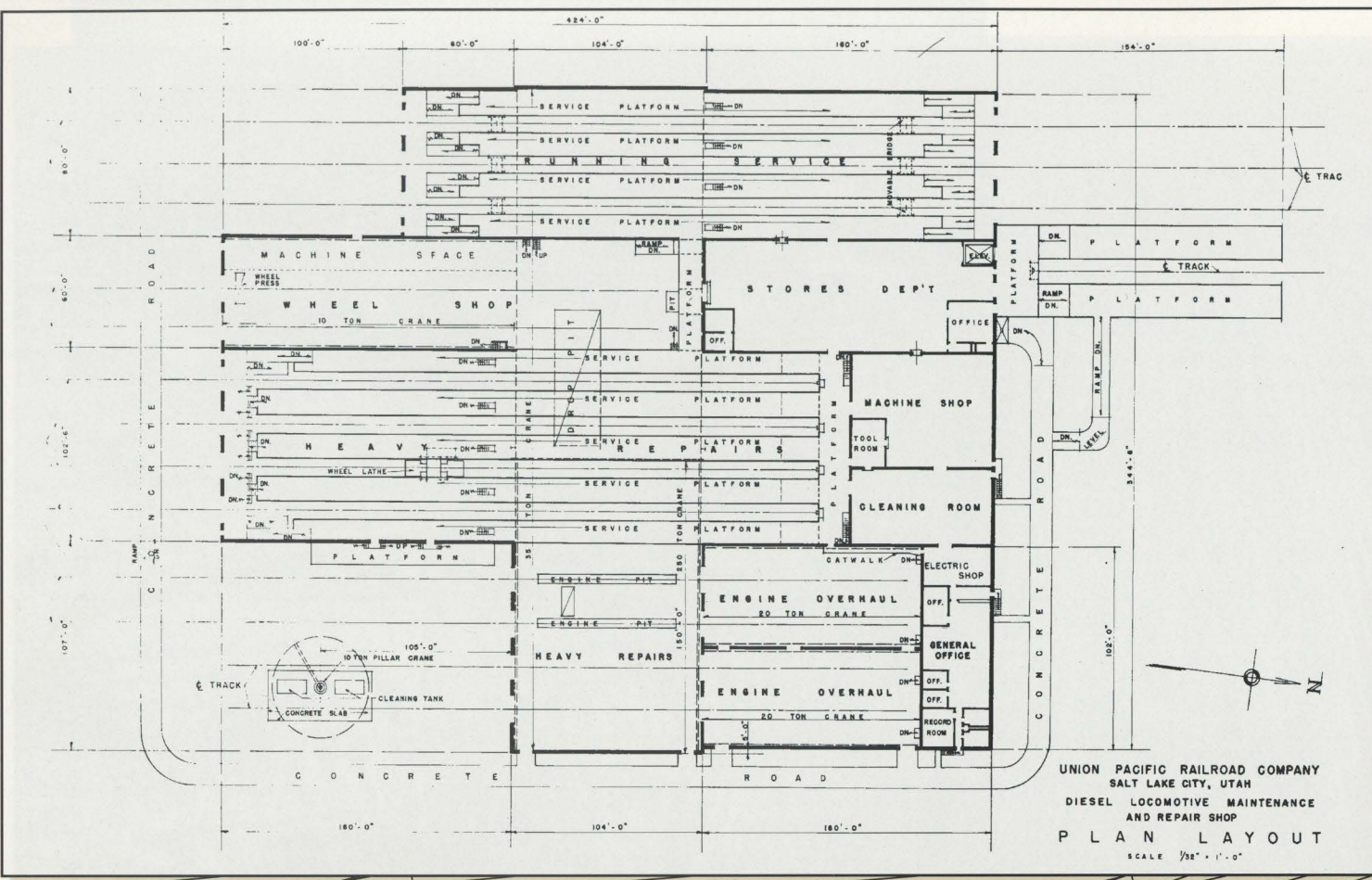
that encircled the room. Later, a specialized test cell was completed to test refurbished air horns. All facilities, inside and outside, were cleaned and given a coat of fresh paint. In 1976, a new locomotive washer was added, along with two trash compactors.

Between 1972 and 1976, Union Pacific spent \$5 million to renovate the Salt Lake City shops.

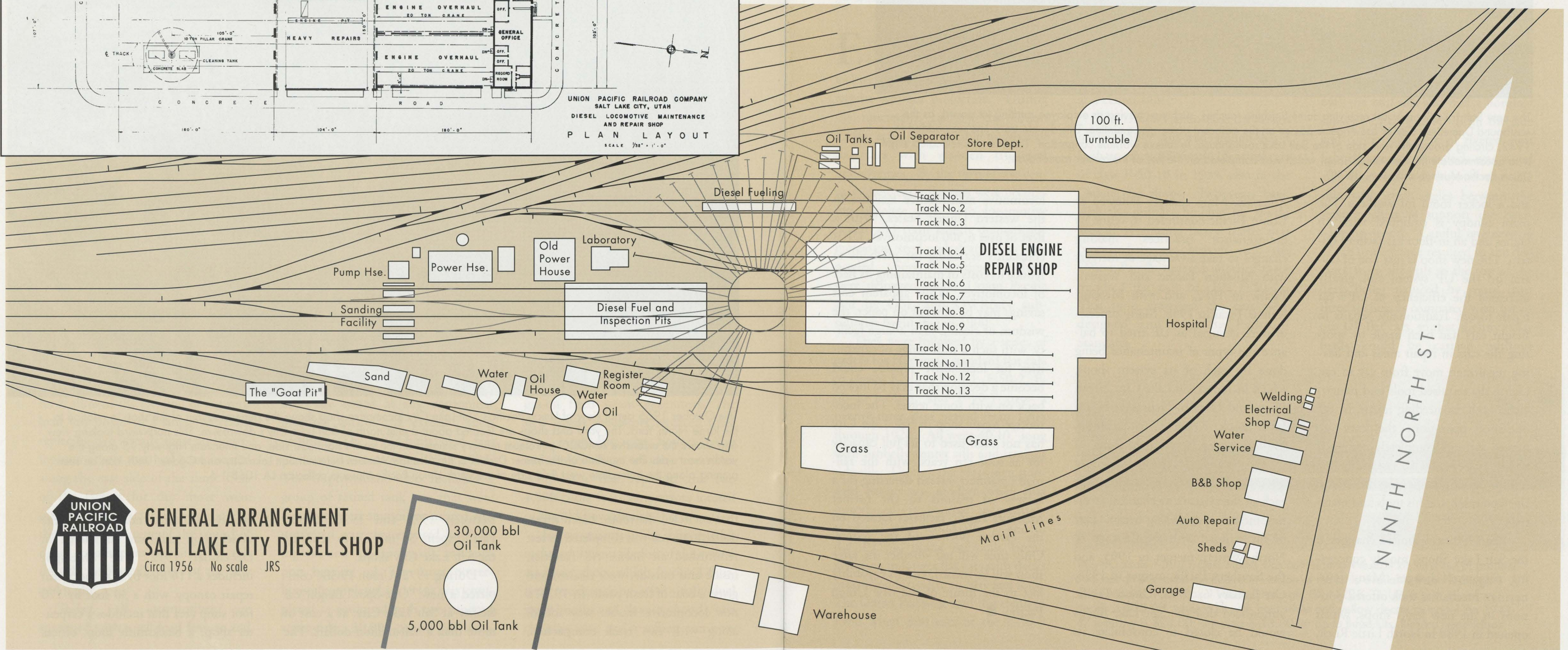
During 1972, Union Pacific completed a new "One-Spot" freight car facility at Salt Lake City, at a cost of more than a half-million dollars. The

facility is located northwest of the diesel shop and was completed in December 1972. The One-spot includes a 114 foot by 200 foot main repair canopy, with a 30 foot by 170 foot shop area that includes a carpenter shop, a blacksmith shop, offices

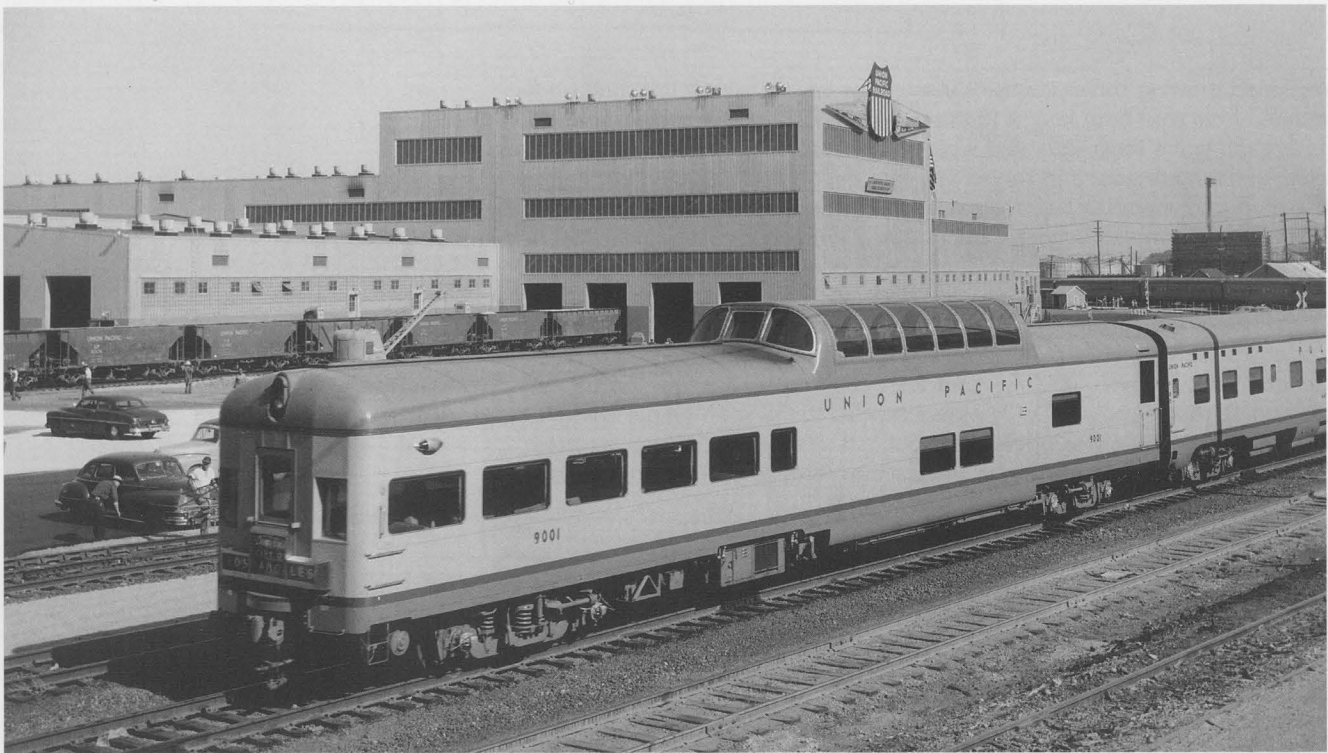




This dimensioned drawing shows the measurements of the new shop. The shop tracks were numbered from west (top) to east (bottom). Tracks 1, 2, and 3 passed from the north side through to the south side, and were assigned to running repairs. Track 4 was only located on the north side, and served the store department's loading dock. Track 5 entered the shop from the south side, and served the wheel shop, including the 90-ton drop table in the center of the building. Tracks 6 to 9 entered from the south side, and were assigned to the shop's heavy repairs, and were equipped with walkway-level service platforms, and the tracks themselves were elevated to allow access to locomotive's running gear. Tracks 10, 11, and 12 were also assigned to heavy repairs, but were not elevated or equipped with walkway-level service platforms. These three tracks, along with stub-ended track 13, were directly under the 270-ton crane, as was track 9. In 1973, the running repair tracks, 1 to 3, were extended to the south (upper left here), and a single axle drop table was added that spanned all three tracks, and the area marked here as the machine space in the wheel shop. Also, a 140-foot canopy was added to both the north side and the south side of track 1. Union Pacific Museum collection







The new Salt Lake Shop is just receiving some finishing touches, such as having its employee parking lot paved, as the eastbound Domeliner *City of Los Angeles* passes on the adjacent passenger mainline. This double track line was added in 1942, circling around the east side of the Salt Lake roundhouse, to relieve wartime congestion. The line was relocated slightly to accommodate the new diesel shop, which was completed on the site of the former roundhouse. Union Pacific Museum collection, 38040

and a locker room for workers. The main canopy is equipped with jib cranes and an in-floor car jacking system. The new shop is just one of several on the UP system and greatly increased the efficiency of UP's car repair forces. Traditionally, repairs to freight cars had been made by spotting the cars in repair areas and having repairmen move from car to car, taking the required tools and materials to each car needing repair. In the one-spot operation, the cars are moved through completely equipped repair stations in an assembly-line fashion, in effect bringing the cars to the repairman and his tools and materials.

The 1980's saw limited changes in the Salt Lake Shops, mostly concerning personnel changes. Many journeyman mechanics took offered positions in the new Jenks shops, which opened in 1984 in North Little Rock,

Arkansas. More changes followed as Union Pacific continued to refine its maintenance practices, making changes to take advantage of mergers with Missouri Pacific and Western Pacific in 1982, and with Missouri Kansas Texas in 1988. Many processes were changed as UP tried to balance the types of maintenance being done by each of its system shops, which included Salt Lake City, North Platte and Omaha, Nebraska, North Little Rock, Kansas City, Stockton, California, and Fort Worth, Texas.

UP continues its on-going attempts to balance the workload of each of the system's mechanical facilities, including shops that became part of the railroad with the Chicago & North Western merger in 1995, and the Southern Pacific merger in 1996. On January 6, 1998, Union Pacific announced that the Salt Lake Shops would be closed to consolidate its

locomotive maintenance facilities in the western United States. With a fleet of over 6,500 locomotives, UP is constantly searching for methods to reduce its costs of maintaining its fleet of locomotives. While apparent cost savings may be obvious on paper, the wisdom of closing such a large facility, with such a wide range of capabilities for locomotive repairs, could become a decision that may be looked back on with some regret. The locomotive repair shop in Salt Lake City has not been used to its full capacity for at least ten years, with the railroad's planners instead deferring for a variety of reasons to the former Missouri Pacific facilities located on the eastern portion of the system. Only time will tell whether the large shop will be missed, and its capability lost to the future of the new Union Pacific. 🐾



## Salt Lake Shops

The Salt Lake Diesel Shop article by Don Strack is of particular interest to me as I spent many hours there during the period from 1956 to 1965 while I was in engine service. Much of my time, while on the fireman's extra board, was spent in hostling at the Salt Lake shop.

One minor correction to Don's article is that steam lasted well into 1954 on the OSL and OWR&N.

At the Salt Lake shops, there were wash racks located on tracks 6, 7 and 8 between the sand docks and the fueling racks. It was a requirement that all incoming units be washed when the weather permitted except the turbines. It seemed that nobody could decide whether to wash them with the turbine, running or not, so they just didn't wash them.

Don mentions about complaints from residents about the noise of locomotives being run on the load box when it was located on track ten. The turbines presented a similar problem, as sometimes they would be run for hours while on the service pit tracks, which made it miserable for everybody that had to work in that area. There was a hospital located a

short distance away that, understandably, complained the most.

Not long after the 8,500 HP turbines were delivered, cracks were discovered on the truck castings. These were of General Steel Casting manufacture, so they sent their own people to work with the Salt Lake shop workers to make the corrections. This meant that the units had to be separated in order to fit in the heavy repair bays of the shop where they could be lifted off of their trucks.

For a while in the late 50s, or early 60s, Union Pacific worked the turbines on the South Central district, though I understand they were not allowed into Los Angeles proper. This gave me considerable time to associate myself with them. They were interesting and impressive in their performance, but appeared to be very labor intensive on the maintenance end. While the Salt Lake shop did some work on the actual turbine, they were usually exchanged with an overhauled unit from General Electric which, at that time, had a facility on the west side of Salt Lake City.

The Salt Lake shops were also heavily involved in the early development of turbocharging EMD engines. These experiments with EMD, AirResearch and Elliot were covered in previous *Streamliner* articles. They were equally interesting to observe. The shops at that time appeared to be on the cutting edge of Union Pacific motive development. It's hard to imagine them being closed.

On the light side, it was discovered rather abruptly that an 800's cylinders would not go through the sand docks. Number six track sand dock bears the scars of that attempt. From then on, whatever few steam engines came to Salt Lake were run up track ten and crossed over to nine if they had to be put on the pit. The last one I remember is the 4014 on its way dead in tow to the LA County Fairgrounds.

Les Clark  
Floresville, Texas