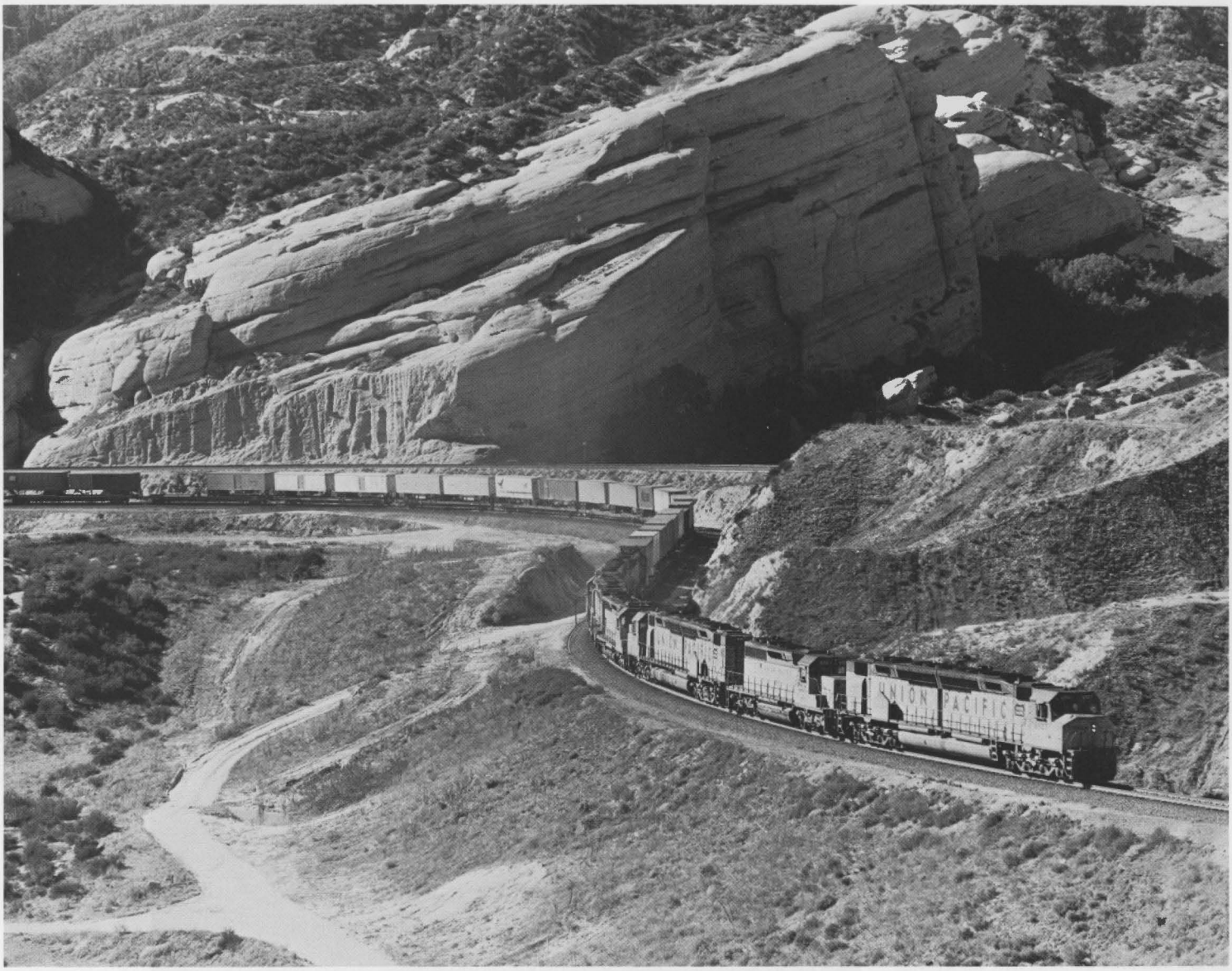

The Race For Horsepower

Text by Mark Hemphill

In the 1960s, the pace of life in the United States accellerated to a blinding pace. The United States of the World War II era — industrial might of awesome proportions, armies of skilled factory employees, infinite plains of grain and cattle — was rudely forgotten.

Electronics, computers, Xerox copiers, atomic power: now *this* was modern. This was glamorous. Who needed steel mills and railroads and coal mines, anyway? They were dirty, stodgy, antediluvian, sluggish. This was the information age. Transportation was changing just as fast.

The two-lane U.S. Highway system, recently completed at huge expense, was already obsolete. New four-lane highways, built for speed, were now required. Interstate 80 in Nebraska was posted for 80 mph, though the only speed limit people were paying any attention to was the speed their car was capable of. In the case of my father's '65 Impala, its 300-horsepower 327 meant it could run all day at 120 mph.

Trips of any distance were now made by air. The public passed its final judgement on passenger trains. Tried and convicted of excruciating slowness, they were banished from the land. Air travel provided breath-taking speed; besides, it was clean, modern, exciting, and loaded with sex appeal. You wouldn't have dreamed of flying in anything other than your best clothes.

Union Station? That was a grimy, creaking dump in lower downtown, its environs roamed by shuffling derelicts, pigeons, and trash . . . trash everywhere, swirling in circles, collecting in drifts in the corners, scattered randomly across the streets and parking lots.

Air travel, of course, was really jet travel. The technology that birthed the piston-engined airliner had become stale the moment it was perfected. In 1967, United stuck me on a DC-7A between Detroit and Chicago. The trip was forever impressed into my memory by the deafening racket and its interminable duration.

The Electras and DC-7s and Stratocruisers, swept away by a flood of 707s and DC-8s, were retired when still young, then banished to the far corners of the world, to fly goats in sweltering third-world countries and frozen salmon from remote gravel strips in the Aleutian Islands.

In Detroit, speed meant big horsepower and fastback styling. In 1955 only the upper class could afford horsepower. Corvettes and Thunderbirds were the toys of status seekers. In the following decade Detroit made horsepower available to the masses: Galaxie 500s with monstrous side-oiler 427s lurking under the hood, six-pack 389 GTOs from Pontiac, Max Wedge 413s and 426s from Plymouth and Dodge. These were inexpensive cars. Box-stock from the dealer, they'd smoke the average Corvette.

At Union Pacific headquarters in Omaha, the demand for speed had not gone unnoticed. Trucking had matured almost overnight and suddenly become hotly competitive with railroads on the long-haul. The standard 28-foot van of the 1950s disappeared in a blink, as did the cramped, underpowered tractors that pulled them. My image of trucks as a youngster was being stuck behind them as they ground up the hills in granny gear. Now the turbocharged Freightliners and Kenworths blew by you *going uphill,* the vacuum behind their 40-foot vans leaving Volkswagen microbuses weaving and wavering.

It was the era when inflation became a dirty word: daily car hire rates, hourly wages and everything else railroads had to pay for were skyrocketing. The freight had to be moved faster just to stay even.

The UP's response was speed, more horsepower, faster track, bigger freight cars, hump yards, CTC, and yet more horsepower.

At the time, the only way to get big horsepower out of diesel-electric locomotives was by using a string of them. Eight GP9s, for example, could supply 14,000 horsepower, eight being the practical maximum due to the electrical resistance in the multiple-unit wiring.

But each unit meant more maintenance. They each had their own traction motor blowers, radiators, drawbars, cab heaters, air filters, radiator shutters, air brake equipment, oil pumps, power contactors, handbrake, horn, bell, headlights, 13 zillion nuts, bolts, screws, flat washers, lock washers, thrust washers, windshield wipers, and so on, 75,000 or so parts in every locomotive. What the UP wanted was big horsepower, but without all this replication.

The initial solution was the General Electric gas turbine. Twenty-five turbines, built in two slightly differing designs, were delivered to the UP between 1952 and 1954. Each packed 4,500 horsepower into one carbody. They were joined by 30 more turbines, each rated at an incredible 8,500 horsepower, between 1958 and 1961.

The 8,500-hp Big Blow turbines seemed like the ticket: one locomotive that did the work of five GP9s. On a horsepower/dollar basis, they were less expensive than the five GP9s they supplanted, too.

The turbines, though, weren't the answer the UP was looking for. They were sophisticated, precision machines, which wanted, no, *demanded* frequent attention from machinists and electricians well versed in their finicky habits. Not only that, they squandered fuel, couldn't be used in a pinch to run the local or switch the yard, and weren't particularly reliable.

The GP9s were simplicity exemplified. Unornamented with doodads, purposely built "sloppy" — with broad tolerances in their engines — they'd pull tonnage even when they were two-fifths broke. If you've got a good set of wrenches, a circuit diagram, the skills of a shade tree mechanic from Flomaton, Alabama, and the telephone number for EMD's parts department, you can make a GP9 run practically forever.

Not overly thrilled with its turbines, the Union Pacific settled on a new approach: two diesel engines on one chassis. This would supply the amount of horsepower per unit the railroad wanted, with just one cab, and one set of draft gear, and so forth. This idea was made feasible by the quantum horsepower jump diesel locomotives made in the early 1960s: from 1,750 hp in the 16-567C of 1959, to 2,500 hp from EMD's turbocharged 16-567D3A, GE's FDL-16, and Alco's 16-251C. All were available and proven by 1963.

EMD proposed the DD35, a 5,000-horsepower B-unit based on two GP35s. General Electric proposed the 5,000-horsepower U50, likewise based on its bread-and-butter U25B. Alco proposed the 5,500-horsepower C-855, based roughly on its C-628. The UP purchased examples of each in 1963 and 1964. The era of the double-diesel had begun.

Above left: The pinnacle of double-diesel design was reached with the DDA40X, a 6,600-horsepower machine of thoroughly modern design. Of all the double-diesels, they were the most successful, lasting nearly 16 years while racking up huge mileage.

On April 21, 1976, a van train with one of nearly everything on the head end flows through Sullivan's Curve east of Devore, California, on the climb from the Los Angeles Basin to Cajon Pass. There's more power here than really necessary: a high-speed set of two 6900-series DDA40Xs and a "fast-forty" SD40-2, followed by an SD45, a DD35 and a DDA35, and another SD45. Only the SD40-2, the '70's version of the GP9 of the '50s, still exists. *Mike Butorac*

Above right: Doing the work of nearly five SD40-2s, DDA40Xs 6923 and 6924 take the siding at Nordeen, Oregon, with the *Overland Mail Northwest* on May 27, 1978. At a weight of 545,432 pounds each, these weren't the heaviest locomotives ever built, nor the most powerful, but they moved the UP's freight at a profit, and that's the only criteria that counts. *Dale Sanders*

UP Equals Uncommon Power

To get into the diesel-electric locomotive business, it takes a vast amount of capital, a tradition of engineering excellence, a talent for working with large unwieldy objects, and guts. In 1953, General Electric had all of these.

GE already had several pieces of the puzzle solved. They were already building industrial-size electric motors and generators, a fact not to be glossed over, since only a handful of companies worldwide have this know-how. GE knew quite a bit about the locomotive business, as it had supplied heavy electrical components to Alco for decades, mucked about with a variety of experimental diesel-electric locomotives since 1918, and had been producing a successful line of small industrial and switching locomotives for over a decade.

After World War II, GE saw that EMD had easily gained predominance in the locomotive business. More important, GE recognized that EMD was turning a nice profit on the hordes of F-units and Geeps it was rolling out of its plants in La Grange, Illinois, and Cleveland. Alco, Baldwin and Fairbanks-Morse were all undercapitalized. Baldwin and F-M were beset by serious design flaws, and their management was weak. They were on their way out.

In 1953, GE severed its partnership with Alco, and struck out on its own. For a power plant, GE purchased Cooper-Bessemer's FDL design. A locomotive plant was built in Erie, Pennsylvania, and a handful of experimental units began to quietly test the waters. In 1960, GE was ready for head-to-head competition with EMD.

GE's product was the U25B, a locomotive that set new standards. It was hence natural that GE would want to compete with Alco and EMD for UP's double-diesel design. GE's design took the guts of two U25Bs on one frame, put it on eight axles, and called it the U50. Three were delivered in 1963, followed by 12 more in 1964 and eight in 1965.

Above: On October 5, 1967, U50s 40 and 51, together with GP30B 722B, charge through Devils Slide, Utah. They're making 50 mph with their 112-car freight, as the average eastbound grade through Weber Canyon is slightly less than 0.5 percent. Their pace will slacken abrubtly in another seven miles, when they hit the 1.14 percent ruling grade at Echo. *R.H. Kindig*

Inset, right: Should there be any question whether these are U50s, not U50Ds as they are commonly termed by the rail enthusiast press, the builder's plate speaks with authority. The cast aluminum builder's plates favored by GE have a quality about them that stamped sheet metal will never have. *Mel Patrick*

Above right: A summer rain on July 1, 1967, has moistened the farms around Aikins, Kansas. The 32 and two little sister high-hood U25Bs trudge over the crest of Aikins Hill, en route to North Platte, Nebraska. On the drawbar is interchange tonnage from Kansas City, and a string of 40-foot grain-loading boxcars for distribution to elevators in rural Kansas and Nebraska.

Below right: On a clear spring day, April 21, 1968, U50 35 and SDP35 1405 meander out of Topeka, Kansas, taking the fork in the road at Menoken Junction to North Platte, instead of the Kansas Pacific route to Denver. *Two photos, Steve Patterson*

"Notice, please, all those wonderful 40-foot boxcars following this ugly double-D. When I took this photograph, they were ubiquitous. The 'Kay Pee,' when I lived in Topeka, was carrying no less than six UP passenger trains a day, trains with grand names like the City of St. Louis *and the* Portland Rose. *Now the KP is but a branchline, and the U50 and the 40-foot boxes have long since yielded the right-of-way, while millions are being spent to double-track the North Platte route for more and more colorless, lifeless, boring, Powder River unit coal trains."*
— Steve Patterson


UP 32
UNION
PACIFIC
32


GENERAL ELECTRIC
DIESEL-ELECTRIC LOCOMOTIVE


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35
U.P. 35
UNION
PACIFIC
DISPATCHABLE
TRANSPORTATION
35
403


X-61
U.P. 61
UNION
PACIFIC
DEPENDABLE
TRANSPORTATION
61


60
DEPENDABLE
TRANSPORTATION
60
UNION PACIFIC

Undependable Transportation

Alco's answer to the UP's call for horsepower was the C-855. Just three were built, two with cabs and one without, as the UP wanted to see if Alco was up to the job before buying these units in quantity.

Each C-855 was rated at 5,500 horsepower, 500 more than GE's U50 and EMD's DD35, a distinction Alco took pride in pointing out. The horsepower was produced by two 16-251C prime movers, a rugged, well-built, state-of-the-art engine, first produced for the C-628. The main generators, traction motors, and many other electrical components were proven GE designs. Alco nonetheless had to put the package together, and make it work. Alco was pushing the abilities of its engineers and factory personnel . . . perhaps too far. The C-855s arrived on the UP on June 30, 1964. Their maiden trip a few days later was a disaster.

Above left: After set-up, the C-855s were ready to earn their keep. Extra 61 West has completed its air test at Council Bluffs, Iowa and is ready to depart for points west. Things went fine until the train came over the hill at Elkhorn, 22 miles west of Omaha. The C-855s reached transition speed for the first time. When they made transition, there was a massive explosion in all three electrical cabinets, followed by much fire. End of forward progress.

It seems Alco had miswired the traction motor field shunt circuitry: the traction motor shunt field resistors were wired across the main generator instead of the traction motors. The Alcos were dragged back to Omaha for extensive rewiring and repairs. It was their first major failure, and unfortunately not their last. *Jack Wheelihan*

Below left: Rarely were the C-855s entrusted with a train by themselves, and with good reason, for dependable they were not. On December 2, 1967, C-855A 60 leaves Cheyenne, Wyoming, with an eastbound, in the company of two GP30s. The Alco will be required to generate amperes from the bottom of the sag at Lodgepole Creek on Cheyenne's east side to the top of Archer Hill, a distance of but three miles. From Archer Hill to North Platte it's all downhill; should the Alco fail the moment the train reaches Archer, the two GP30s will still be able to make North Platte at a tidy pace.

Above: One-of-a-kind C-855B shares the Cheyenne diesel/turbine service tracks with a pair of C-630s on February 25, 1968. GE turbine 15, at right, is stored and will leave Cheyenne just once more, when it goes to General Electric for scrapping. The 60B and its cabbed sisters were running out of time as well; all will be retired in August 1970 when they're just six years old. Even the C-630s were unloved by UP: they were sold to the DM&IR in November 1973. *Two photos, A.J. Wolff*

The Life and Times of the 72

EMD's answer to the UP's race for horsepower was the DD35. The UP took them in both A-unit and B-unit versions. SP, the only other railroad to purchase any of these pleasing-to-the-eye locomotives, bought three B-units. EMD designated the B-units as DD35s (not DD35Bs), and the A-units as DDA35s (not DD35As).

EMD's plan, at first, was to construct only B-units, and sandwich them between a pair of ordinary GP35s. In total, it was a 15,000 horsepower wonder, very impressive when you consider that these four units would do the work of ten F7s.

The first two DD35s were built as demonstrators to tour the country, though only the UP was truly excited by the concept. The UP purchased the entire GP35-DD35-DD35-GP35 demonstrator set in June 1964, and liking what it saw, bought another 25 B-units that summer and fifteen A-units the following year.

Not everything about them was perfect. EMD was having trouble with its current model of traction motor, the D67B. In high-speed, high-amperage duty it had a distressing tendency to either melt down or burn up (or both simultaneously). All but one of the A-units were built with GE 752E traction motors, which thanks to their larger case were able to be built with more copper inside and hence were able to soak up heat a little better.

The 72, built in May 1965, retired on August 1, 1981, would give the Union Pacific 15 years of exemplary service.

Above: About a half-hour ago on a brutally hot May 26, 1974, the 72 and two DD35s thundered out of the Devils Playground and shot through Kelso, California, the lonely oasis at the bottom of Cima Hill. Within a few minutes the train's speed dwindled from 65 mph to perhaps 25 as its tonnage met the 2.2 percent grade, the ammeter needle inexorably rising towards the red zone while the speedometer needle plunged towards zero.

Here at Elora, two-thirds of the way up this hill in eastern California's Mojave Desert, the radiator fans are all on line, barely keeping up with the tremendous waste heat thrown off by the six engines. You could fry steaks in the sizzling lube oil trapped in the vee between the engines' top deck covers, if you didn't mind your meat being seasoned with the foul stench of hot generator windings.

Upper right: Extra 72 East has almost reached Cima Hill's summit 15 minutes later. Its train winds back through the only significant curves on the entire hill. Cima is notable among major North American grades for its complete lack of serious curvature: only 18 curves mar its 18 mile length, and not a one is tighter than two degrees.

The knolls on either side of the track here offer the only altitude local to the mainline anywhere on Cima Hill. Most of the desert hereabouts would be deemed pancake flat if it wasn't for the fact that it's tilted a degree off the horizontal. Only from the viewpoint of an airplane or a buzzard does the 2,077-foot difference in altitude between Kelso and Cima become noticeable. *Two photos, Steve Patterson*

Lower right: On June 17, 1982, the 72 had reached its end. Soon, it will leave the Joseph Simon & Sons scrapyard at Taylor Way in Tacoma, Washington . . . in gondolas, in shreds. *Albert Farrow*

Previous pages: When the Big Jacks were returned to service in 1984 and 1985, their territory was expanded to include the Western Pacific mainline, now a part of the UP system. Here photographers were treated to the sight of these leviathans hanging over on the inside of curves by an alarming amount, while almost exposing the rail on the outside of the curve to sunlight. Lit by the soft pure sky of a fall day in October 1984, the 6945 and a westbound pig train are mirrored by the backwaters of Poe Power Dam, just west of Pulga, California. *Roger Puta*


UNION PACIFIC


UP
72
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At Home on the LA&SL

Home turf for the DD35s and DDA35s during much of their career was the mainline from Los Angeles to Salt Lake City, Utah, a route built by the Los Angeles & Salt Lake and later merged into the UP. Though painfully flat on the Black Rock Desert of southwestern Utah, most of the LA&SL is decidedly *not* level, and the DD35s and DDA35s were put to the test every trip.

Above: The 79 and two B-units have crested their last summit of the trip. Their westbound tonnage is almost to its California destination on September 22, 1974. The train left the summit of Cajon Pass a few minutes ago, and is passing through the two Alray Tunnels, running west on what is nominally the eastbound-only main. Built in 1912, the eastbound main has a 2.2 percent grade, a big improvement over the 3.0 percent grade of the original 1885 track. The older track, now the westbound main, slices through the same hummock that the Alray Tunnels bore through in a cut that can be seen here just above and to the left of the tunnels.

Above left: Running on the proper, eastbound main, Extra 83 East fills the cut east of the Alray Tunnels with the thunder of its six diesel engines on November 9, 1975. With 16,600 horsepower on tap, this hotshot will have no trouble making Cajon Summit.

Below left: An observer unfamiliar with this location might describe this train as "speeding west behind a GP30 and two DD35s." Not very likely! On October 13, 1974, Extra 828 West has broken over the crest of the hill at Cima, California, the top of the 18-mile drop to Kelso. The conductor has confirmed that there's 80 pounds of air on the rear of the train; the engineer has already drawn off a portion of this in order to maintain a safe speed, lest his train evaporate down Cima Hill like raindrops in the Devils Playground. *Three photos, Steve Patterson*


UP 71
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UP
UNION

Drag Queens

By 1978 the DD35s and DDA35s were elderly, at least by the UP's highfalutin standards. No longer did the UP consider the DD35s and DDA35s to be first-line motive power. More and more the hotshots were coupled up to new SD40-2s. The venerable double diesels were asked to handle nothing more time sensitive than secondary, drag freights.

Compared to the U50s, U50Cs and C-855s and all of their incurable woes, they were reliable, efficient and easy to maintain. It must be remembered, nevertheless, that the DD35s and DDA35s were built adhering to the same philosophy of design as the GP35, whose overworked d.c. main generator and convoluted static control circuitry made it the least-liked locomotive EMD ever built in quantity.

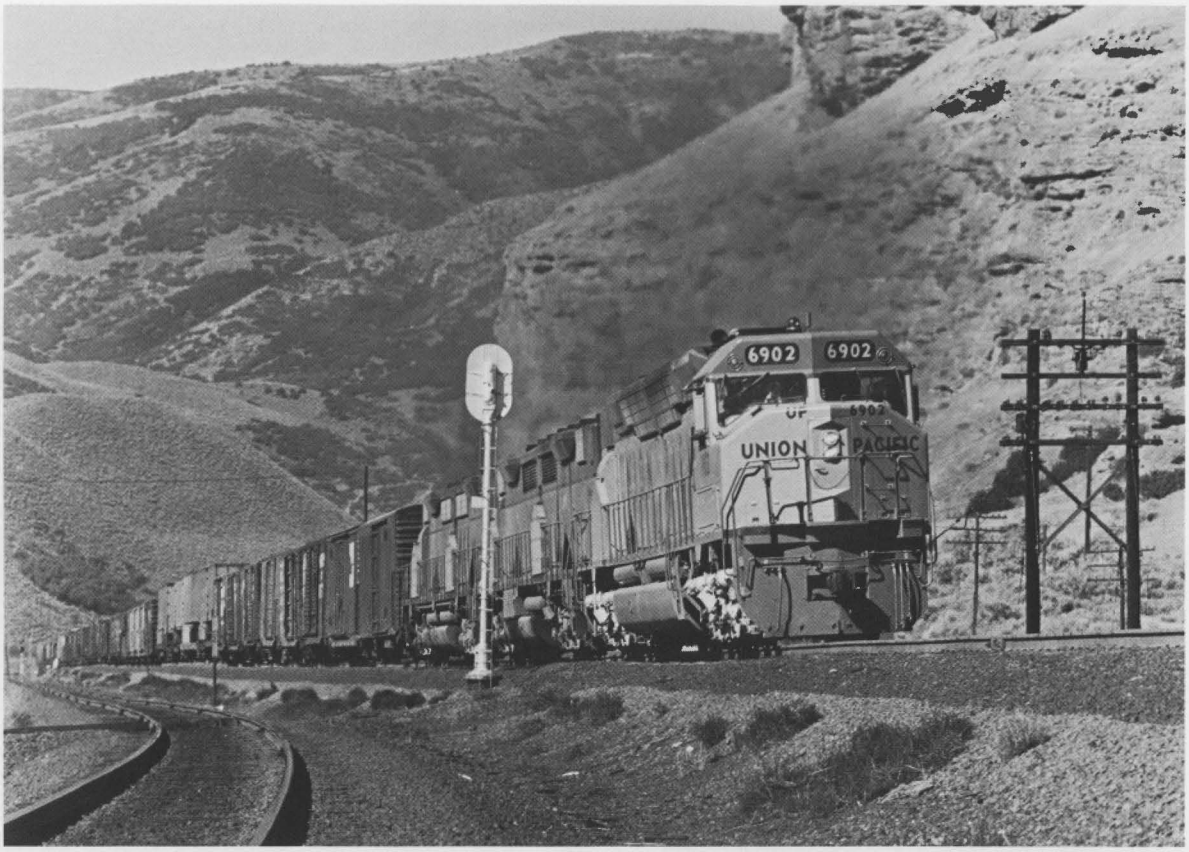
Upper left: On a summer day in 1979, Extra 71 East is blissfully slogging up Weber Canyon behind a DDA35 and a DD35. The location, a place once denoted in UP timetables as Griffith, Utah, is 963 miles west of Council Bluffs, Iowa.

At Griffith the Weber River loops around several granite ridges. These bends were too tight to be followed by the UP as it built westward towards Promontory in 1869. To maintain a reasonably straight alignment, the river was bridged four times, and two tunnels (each of which got a twin in 1926) were bored through these annoying outcrops. Extra 71 East extends through Tunnel #8, through two similar bridges on the other side, and into Tunnel #9. Its caboose has just left yet one more through truss bridge over the Weber at mile 964.26.

Lower left: At Baskin, during the same summer, the Extra 80 East walks up the 1.14 percent on the 1926-built eastbound main with an empty grain train, the exhaust of its A-unit and B-unit billowing sideways from the four stacks faster than the train is moving forward. Good track, this, the rail showing little deflection under the great weight of the locomotives.

Above: On June 1, 1978, an A-B-B set and 90 cars is down to a crawl as it approaches Warner, Utah. They'll have to be capable of handling another half-hour of maximum amperage, because the summit of this 0.80 percent climb out of the Great Salt Lake Desert is six miles farther to the west. The shorelines of the Great Salt Lake when it was swollen to an immense size by melt-waters of the last Ice Age are visible on the slopes of the Oquirrh Mountains in the background.

This portion of the Salt Lake City-Los Angeles mainline, known as the Leamington Cutoff, was completed in 1903 by UP subsidiary Oregon Short Line as a low-grade, gentle curve alternate to the original mainline via Provo, Utah. These low grades were almost too much for these long-abused locomotives this day. *Three photos, Doug Harrop*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Geared for Speed

The Union Pacific saw two ways to speed up its trains in the 1960s: more horsepower on the head end; and locomotives geared for high speeds. Electro-Motive Division's standard locomotive gear ratio at the time was 62:15, a short way of saying that 15 teeth on the traction motor pinion mesh with 62 teeth on the bull gear (which is pressed onto the locomotive axle).

In other words, the traction motors spin 4.13 times for every revolution of the locomotive's wheels. General Electric uses a 74:18 gear ratio to accomplish an identical reduction.

Either 74:18 or 62:15 gearing gives a locomotive a nominal top speed of 70 mph, although the overspeed usually doesn't trip until the locomotive is running about 73 mph. The locomotive is intentionally limited to this speed in order to preserve the structural integrity of the traction motors. At 70 mph the motors are spinning nearly 2,500 rpm — spin them much faster while under load and the result will be a puff of dirty yellow smoke, the smell of ozone, and a sound like bottled lightning.

In Omaha's view during the late 1960s, 70 mph just wouldn't do for hotshots. True, quite a bit of the mainline was (and is) incapable of even 70, due to curvature or grades, but much of the UP is blessed with long, flat, tangent stretches, track that's capable of handling freights at very fast speeds. The UP decided its hot trains were going to start making up time.

Accordingly, the DDA40Xs and U50Cs were built with 59:18 gearing, allowing a top speed of 90 mph (though by rule they were restricted to 82 mph). Seventy-five SD40-2s were either built new or refitted with the same gear ratio, and renumbered into the 8000-series to distinguish them from ordinary SD40-2s, to accompany the 6900-series DDA40Xs on fast freights. A common practice was to sandwich one "fast-forty" 8000 between two 6900s — a sandwich with 16,200 horsepower on call.

In the early 1980s, the UP decided that it was too much trouble to maintain what was in effect two separate locomotive fleets. One 3000-series SD40-2 in a consist of 6900s and 8000s held everything down to 70 mph, and conversely the fast-forties and 6900s were unsuited to drag freights, since the price paid for high-speed gearing is substantially reduced tractive effort at slow speeds.

The 8000s were thus re-equipped with 62:15 gearing, and lost their distinctive number series for plebeian 3000-series numbers. Once the U50Cs and the 6900s were retired, the UP's locomotive fleet was back to a same-speed footing.

For better than a decade, though, when you saw 8000s and 6900s roar towards you, you stood back . . . a little farther than usual.

Lower left: High-speed railroading at its finest was an everyday occurrence on the UP in the late 1970s. The dispatcher has held a slower perishable behind three 8000s at the crossovers at the end of CTC territory at Strawberry, Utah. The faster *Western Pacific Manifest* charging east on the #2 Track behind two 6900s and an 8000 will cross over to the #1 track, then the three fast-forties on the perishable will carefully find their footing on the upgrade, and follow the WPX up the hill. The mainline east of Strawberry is ABS double track with spring switches; this was the dispatcher's last chance for the runaround.

Above left: On a hot July day in 1978, a shiny 6902 has been relegated to peasant tasks for a day, teamed with a pair of DD35s to lift an OVE out of Echo Canyon, Utah, on the Wahsatch grade. The 121-car eastbound will maintain 22 mph on this climb, a noteworthy speed for a heavy train without a helper on the 1.14 percent eastbound main. The original, steeper main, now the westbound main, curves off at left. It stays in the bottom of the Echo River Canyon, while the eastbound main climbs onto the side of the canyon.

Above: Dwarfed by a behemoth on each drawbar, fast-forty SD40-2 8051 offers less than a fifth of the horsepower available to the engineer of this WPX. On an overcast day at Clearfield, Utah, the train is racing west towards Salt Lake City and its connection with the Western Pacific. *Three photos, Doug Harrop*

Resurrection and Retirement

Everything about the "Big Jacks," the 6900-series DDA40Xs, was different. This was purely wonderful from the view of the photographer, yet these differences were generally not mentioned using words of praise by the Mechanical Department.

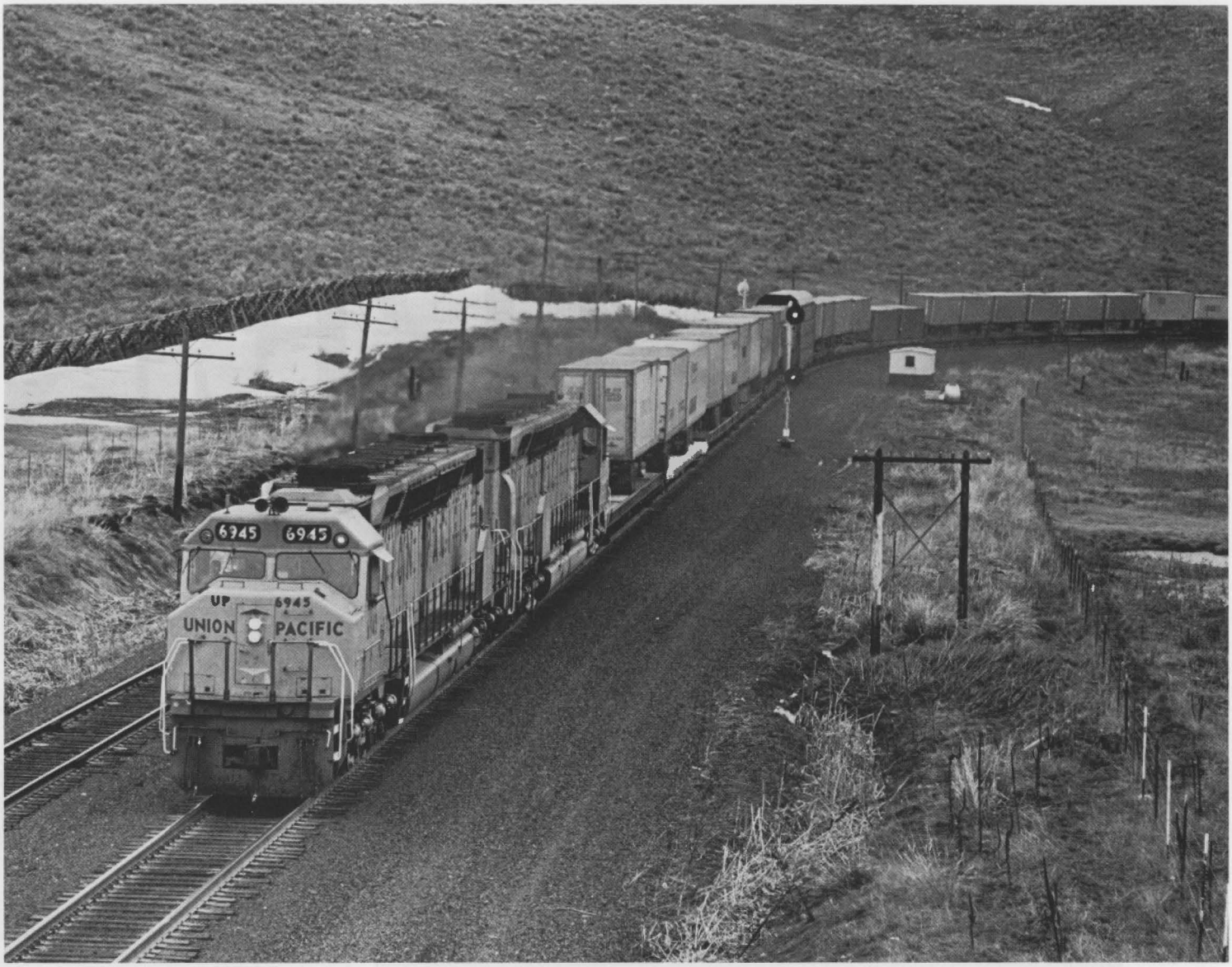
The obvious difference between the Jacks and ordinary SD40-2s was, of course, the tremendous size of the Jacks. Here the problems began. Their walkways, higher than standard, didn't line up with the raised shop floors. Their length meant twice the shop space was filled, even if only one end was needing work. Their oversize four-axle trucks needed special drop tables to accommodate them. They were, almost needless to say, extremely heavy.

Less obvious were their unique internal specifications, and this was where the big problems lay. Their prime mover, a 16-645E3A, was peculiar to the species, with its own power assemblies, turbocharger, fuel injectors, and so forth. The AR12 main generator was likewise an oversize oddball — every other EMD Dash 2 ever built has an AR10. Their modular electrical cabinet, that paragon of EMD standardization? Its modules for the most part were special, or shared with the SD45X, a real freak of the locomotive world.

To put it bluntly, the Jacks needed their own parts inventory, and their idiosyncrasies made them more vexing, expensive to operate, and time-consuming to repair than twice their number of SD40-2s.

In 1980, the UP's traffic fell sharply, and the 6900s began to go into storage. By August 1980, all were stored, first at Council Bluffs, then at Las Vegas, and finally in the isolated dry desert at Yermo, California, where they were safe from the depredations of copper thieves and bored teenagers. At Yermo they remained, until increasing traffic and a shortage of motive power in late 1983 brought 25 of the remaining 45 units out of storage for one last, magnificent fling.

Below left: Thirty-seven Big Jacks were baking in the deadline at Las Vegas on July 26, 1981. Some of these would be resurrected. Many had already been cannibalized to keep their brethren running,



and would never rumble to life again. *Dale Sanders*

Above left: Luckiest of all the Jacks was the 6936. Not only was it to be pulled from the deadline and returned to service in 1983, alone among all the double-diesels ever built it is intact and running, and still included on UP's roster. On April 4, 1984, the 6936 heads up a westbound pig train at Roy, Utah. Today, it handles an occasional passenger special, dreaming, if locomotives dream, of the days when it sped hotshots over the first transcontinental railroad. *Doug Harrop*

Above right: Back in the Pacific Northwest in style, two Big Jacks skate over the top of the hill at Telocaset, Oregon, with the *Seattle-Portland Manifest*. With 2,218 tons on the drawbar, an inconsequential amount, they're not even sweating. *Mike Repp*

Below right: The Big Jack fleet rolled its last revenue mile on May 6, 1985, when the 6936 pulled into North Platte with the LAWST. After this, the fleet rolled to the scrapyard. On October 7, 1986, four DDA40Xs — now valued not for the tonnage they can move, but only for their bones of steel and sinews of copper — trail 17 GP30Bs on an eastbound scrap train at Dry Lake, Nevada. *Mark Wayman*

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LINEUP NUMBER 177: JULY 1991

EXTRA MOVEMENTS

SCHEDULED MOVEMENTS

SPECIAL INSTRUCTIONS

By the time this reaches your mailbox, our first issue of *CTC Board Railroads Illustrated* will be at press, and our first issue of *CTC Board Railroad News* will have been printed and mailed.

You undoubtedly want to know what to expect of *Railroads Illustrated*. You can, of course, rely upon *Railroads Illustrated* using higher quality coated paper, laser-scanned color separations and presswork than any other railroad magazine, and you can rely on each issue having the clean graphics, top-notch photography, accurate text and detailed maps upon which *CTC Board* built its reputation. The difference? More color, and more photographs.

This doesn't mean that *Railroads Illustrated* will be nothing *but* photos, rather, each feature article will be similar in written content to our past articles — not too much, and not too little.

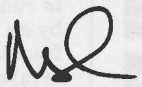
Each issue of *Railroads Illustrated* will begin with four to six pages of the latest, hottest, news briefs and news photos. We'll be using both black & white and color news photos.

Each issue will present one or more all-color main features. The Tehachapi feature in our premier issue, for example, will have 16 pages of color photography, plus a two-page map.

We haven't forgotten black & white, though, and will continue to offer articles illustrated with quality black & white photography. We'll also regularly focus on the work of individual black & white photographers whose technical skills and artistic talents have caught our eye — preferably photographers whose work has yet to be widely published or recognized.

And, with our premier issue, we'll bring you the first installment of a regular monthly feature, *Vantage Points*, all the information you'll need for a visit to a location with heavy train traffic, or incredible scenery. *Vantage Points* will include a detailed map, radio frequencies, train symbols and schedules.

We want you to be represented in *Railroads Illustrated*. All you need to do to put your photographs into consideration is ensure that they're tack-sharp, properly-exposed Kodachrome slides, or grain-free, properly printed 8 x 10 black & whites. If your photo illustrates a news item, it must be timely and of interest to many. Persistence pays off; just because we can't use your work one month doesn't mean that we can't use it the next. Please be sure to include adequate caption information, always put your name on your slides and prints, and include postage if you want them returned.



Cover, above: In the scorching heat of July 3, 1976, on California's Cajon Pass, the headlight, yellow nose and a boil of exhaust announce the appearance of the class unit of Union Pacific's DDA40X fleet from the cool confines of Tunnel B. The 6900, a "fast forty" SD40-2 and another DDA40X will take this eastbound piggyback train into Salt Lake City on time. Cover, below: Just in from GE, U50 52 awaits its first revenue trip at UP's Kansas City enginehouse on August 1, 1965. *Two photos, Steve Patterson*

Contributions to CTC Board are welcome. Please send news items to the staff editors as listed. All photographs should be sent to the Editor/Publisher, CTC Board Magazine, P.O. Box 55, Denver, CO 80201. Unpublished photographs will not be returned unless accompanied by self-addressed, stamped return envelope. CTC Board does not assume responsibility for the safe return of material.

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The Race For Horsepower