

# Introducing the world's fastest freight train . . .



# SANTA FE'S

Let's ride with the engineer for 268 miles on the inaugural run

BY JACK ELWOOD

**F**rom August 1966 to July 1971, during my long career with the Santa Fe, I was Road Foreman of Engines at Gallup, N.Mex. My territory included the 1st and 2nd Districts of the Albuquerque Division, part of ATSF's Coast Lines, between Belen, N.Mex., and Winslow, Ariz. When our president, John S. Reed, signed off on a new, premium, fast freight-train service between Chicago and Los Angeles—called *Super C* as a play on the "Chief" passenger-train fleet's name—supervisors all along the route received instructions and began to plan for the operations over their territories.

We held local staff meetings. Train

dispatchers were given explicit instruction on the handling of both the test runs [page 32] and the *Super C* itself. People in all departments that would be involved were advised of their responsibilities: section foremen and their track gangs, signal department folks and maintainers, and mechanical department employees. To ensure these trains would incur no delays, the implied "command" from the operating vice president was that they—even the test runs—were "Mr. Reed's Babies."

My 268-mile territory was double-track main line equipped with automatic block signals and automatic train stop (ATS). Westward, its profile began at 4,774 feet above sea level at Belen, climbed to 7,238

feet at the easy-to-miss Continental Divide at Gonzales, N.Mex., then descended through Gallup, N.Mex. (6,488), to Winslow (4,852). Despite hosting heavy traffic, then as well as now as part of BNSF's "Transcon," this was not a main line on which an engineer could open the throttle to "Run 8" (full) and just cruise at maximum speed all the time. The 141-mile 1st District had a number of curves with speed restrictions from the authorized maximums on tangent track, and things weren't much different on the 127-mile 2nd District.

## ALL ABOARD IN BELEN

Climb with me up into the cab of the lead FP45, No. 100, on *Super C*'s inaugural



The inaugural *Super C*, with 14 trailers ahead of the caboose, rounds the curve off the Des Plaines River bridge in Lemont, Ill., at milepost 25 from downtown Chicago.

# "SUPER C"

run west out of Belen on January 18, 1968. Our trailing unit is No. 102; the locomotives, bought for the premier passenger trains, are only a month out of EMD's factory. Our cab floor is 10½ feet above the top of the rail, giving us a bird's-eye view of the railroad. The cab might become a bit crowded on this occasion, but I hope you'll get the feel of how we helped the launch of the world's fastest freight train.

I'll be running *Super C* at 90 mph at every point possible. On all other districts, top speed is 79, but the Coast Lines general manager, an aggressive and adventurous railroader, raised our maximum to 90. The overspeed device on these FP45's, as well as their General Electric U28CG counterparts, cuts in at 92 mph. Needless to say, the sensation of operating a freight train at 90 mph will be a new one for me.

It's a cold, clear morning, and the crew has been called on duty 45 minutes ahead of the train dispatcher's "final," his esti-



TOP PHOTO, STEVE PATTERSON; ABOVE, SANTA FE RAILWAY

With author Jack Elwood at the throttle of FP45 100, the first *Super C* rolls west of Gallup.



TWO PHOTOS, STEVE PATTERSON

The first *Super C* waits at Corwith Yard on January 17, 1968, for officials and guests to board. At right is the special—a Fairbanks-Morse H12-44TS diesel and three hi-level cars—that bought them out from Dearborn Station. Later on the Illinois prairie (left), *Super C* meets No. 12, the *Chicagoan*.



are being topped off, and when the inspection is complete, the car inspector removes the blue flag; we are free to go when cleared. We have the two units of 3,600 h.p. each, a test car, three business cars, seven piggyback flatcars carrying 14 trailers, and a caboose.

Over the radio, we get our “highball”; the dispatcher has given us a green signal. It’s 9:34 a.m. as we start moving out of Track 2 in the passenger yard. Just over a quarter-mile from our starting point, we have to go through a 30-mph crossover to get to the south track, which becomes the westbound main at Dalies, 10.8 miles out, where the passenger main from Albuquerque comes in. I have the throttle open sufficiently to get our train speed quickly up to 30. Approaching the crossover, I make a 10-lb. air-brake application to hold the speed through the crossover. With this first application, I get a feel of how the train brakes, knowledge I will use to govern brake applications as we head west.

When the train is halfway through the crossovers, I release the brakes and move the throttle to Run 8 for the grade to Dalies, a climb of 500 feet in 10 miles. At Dalies

mate on when *Super C* will arrive. All other trains are called on their final, but this crew has the extra 45 minutes to ensure this train will not be delayed.

We’re gathered at the west end of the Belen passenger station, anxiously watching to the east for a headlight, which here can be seen for a great distance as the railroad drops downhill from Mountain-air. Soon the *Super C* is slowing to a stop right where we are standing. The crews

change without delay. Our adrenaline is flowing; we are anxious to leave town. The inbound engineer says everything is running well. As I take the engineer’s seat, I check the air gauges and equipment. The car inspector has placed the blue safety flag in the frame of the cab window and is checking the train’s brake shoes and brake rigging, and making the federal 500-mile inspection, which is mandatory on all freight trains. The locomotives’ fuel tanks

we have a 40-mph restriction through the crossover. Since we are on the upgrade doing 70, I will ease off on the throttle and let the grade reduce our speed to 40. Note that one must know how far in advance of the restriction to ease down the throttle—do it too soon, and we'll slow too early, delaying the train unnecessarily. I have the throttle open full as the train's rear end clears the restriction. I do this here because, after passing Dalies, the railroad is downgrade for 24 miles to Rio Puerco, a drop of 216 feet. It is 70-mph track.

The dynamic brake can be used effectively in this instance. The trick is to release the dynamic brake step by step in a way that it will all be released, to be in power position as the caboose comes around the 60-mph curve at Rio Puerco, with the throttle in Run 8. Keep in mind we have run 24 miles downgrade, which will have required periodically applying and releasing the train's air brakes to maintain the required speed of 70.

### MAXIMIZING PERFORMANCE

At Rio Puerco, the two main tracks diverge. The westbound curves to the left (south) to follow a low range of hills, providing for a more moderate grade than the eastbound. We pass the siding of South Garcia at Milepost 43x. The mains come together at Suwanee, 9 miles west, and continue so to the next siding at Marmon, 10.4 miles away. Leaving Marmon we enter a canyon; the next siding is Quirk.

Between Marmon and Laguna are five reduced-speed curves, and the first permanent speed board (sign) is just west of Marmon's west switch. This is a 70-mph restriction, so when we pass the board, I

know the restriction begins in one mile. We've been running at 90, remember.

I will use the knowledge gained from that 10-lb. brake application leaving Belen to determine how much air to set. As I make the application for the 70-mph restriction, we have four more slow curves in close proximity, so it will be necessary to hold my initial set for the next restriction of 60, then release the brakes as we approach the third restriction, which is 50.

As the train brakes are releasing, our speed has dropped to 50, but at the same time, I am opening the throttle and have the train speed once again increasing as our caboose clears this restriction, without any significant loss of time as we approach the next two restrictions. With the *Super C*, and other trains, there are some variations depending on conditions, as the speed restriction would call for. The engineer's experience is the determining factor.

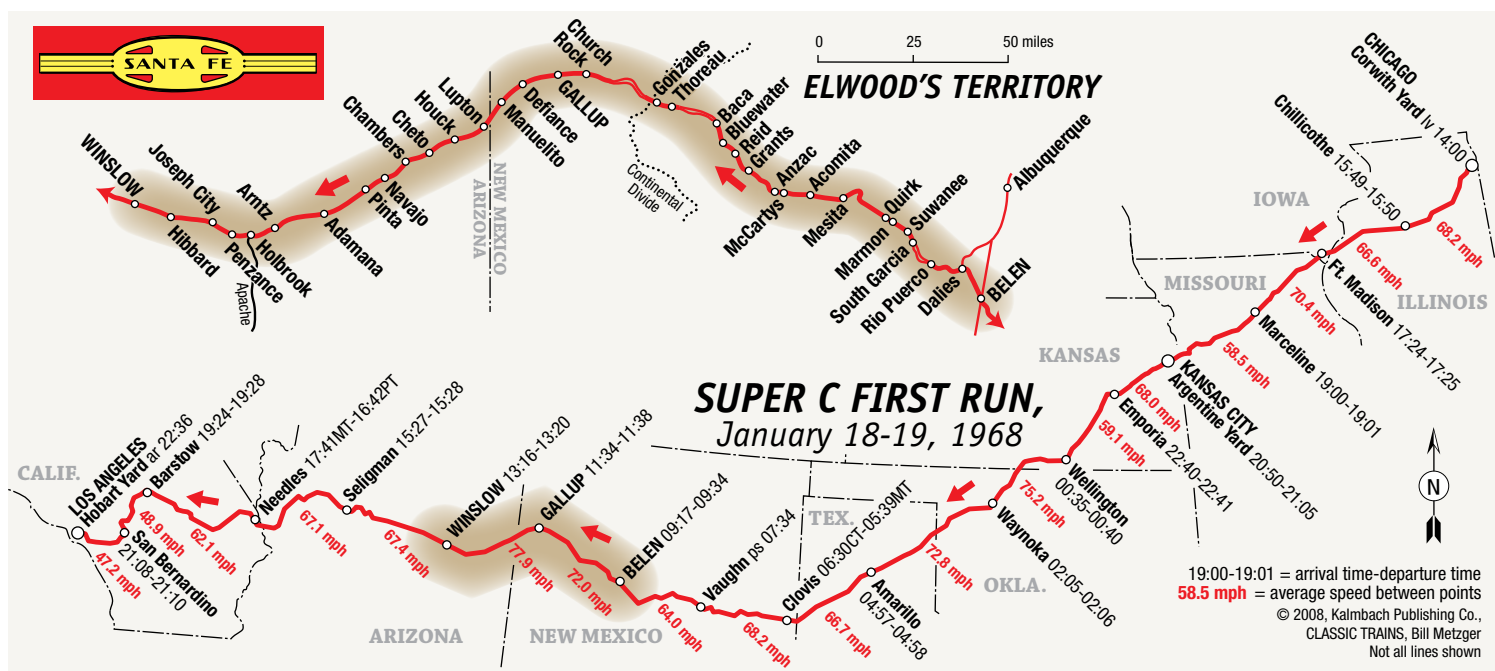
With *Super C*, we used every possible advantage to not lose even one second of time for any curves, bridges, or other restrictive conditions. This entailed waiting until the last possible moment to apply the train brakes to achieve the desired speed at the location where required, and also to increase the throttle as the caboose came out of the restriction so top speed would be regained with minimum loss of time. Engineers used every technique they'd learned by experience to contribute to *Super C's* record running time.

Why use the train's air brakes instead of the dynamic brakes on the locomotives? The short answer is that it is a matter of time. Santa Fe's rule for the use of dynam-



STEVE PATTERSON

V.P.-Operations Raymond D. Shelton rides trailing unit 102 into the Illinois sunset.



## Testing one, two, three



CLOCKWISE FROM ABOVE: STEVE PATTERSON; SANTA FE RAILWAY; JIM McCLELLAN

Four GE U28CG's lead the first test run (above) west near Williams, Ariz., on May 27, 1968. The coast-to-coast test (top left) cruises near Flagstaff on June 10. The K.C.–Winslow run meets No. 24, the *Grand Canyon*, at Omega, Colo. (above), 3 miles west of La Junta.

As the premium, fast transcontinental intermodal service that would become *Super C* came together, Santa Fe and New York Central planners kept in touch. To test their ambitious notion, a dedicated train on a 60-hour schedule, Presidents John Reed and Alfred Perlman authorized a train from New York to Los Angeles. Reed, in fact, approved two—one with NYC using Flexi-Vans and one over just Santa Fe's portion, with TOFC cars.

The first test, on May 26, 1967, was Santa Fe's. Extra 358 West left Corwith Yard at 10 a.m. with U28CG's 358, 355, 356, and 359, dynamometer car 5015, business car 20, 20 flatcars with 40 trailers, and a caboose—1,744 tons. Horsepower per ton was 6.4. Speed was held to 70 mph as the stability of TOFC cars was observed, then raised to 79, and—beyond Belen—to 90. It pulled into Hobart Yard at 9:33 p.m., May 27—a 37-hour 33-minute run averaging 58.7 mph . . . within an hour of the all-time record, set by the inaugural of the first lightweight *Super Chief* on May 18-19, 1937. That was enough for John Reed. On June 1, he announced Santa Fe would inaugurate a 40-hour Chicago–L.A. freight.

This set the stage for the coast-to-coast test. Four NYC GP40's, led by 3024, pulled 18 loaded Flexi-Van flats and a rider coach—1,235 tons—from 30th Street in Manhattan at 10:24 p.m. on June 8. "We figured to get to Chicago in 14 hours," said Jim McClellan, then with NYC, "but we got so screwed up." The run was jinxed—

routed through Selkirk Yard near Albany instead of kept to the passenger main; held at Toledo for two trains; and having to negotiate top speed (70 or 80 mph) on each division. What should've been a 70-minute run around Chicago on the Indiana Harbor Belt took twice as long. It reached McCook, Ill., and Santa Fe interchange at 4:15 p.m., 18 hours 51 minutes from Manhattan—only 51.1 mph. Even at that late date, NYC's *20th Century Limited* covered its 961 miles in 16 hours. Departure from McCook, with the same four ATSF U28CG's and dynamometer car, plus business car 29 and a caboose, was at 4:59 p.m.

They made history: Chicago–L.A., 2,197.5 miles, in 34 hours 46 minutes, 63.2 mph. New York–L.A. was 3,160.9 miles in 54 hours 21 minutes, 58.2 mph, easily topping Union Pacific M-10001's record of 56 hours 55 minutes set in 1934 [see pages 82-91].

One final test train ran that summer, to try the Northern Division routing via La Junta Colo., which had less congestion and 509 miles of 90-mph track. The train left Argentine on July 11 with the same four U28CG's and dynamometer car, business car 36, 20 loaded TOFC cars, and a caboose—1,746 tons. It averaged 59.1 mph on its 1,166.1-mile trip, which ended in Winslow at 5:36 a.m., July 12, but was 1 hour 12 minutes slower than Test Run 1, via Amarillo, over a route only 20.1 miles longer.—Fred W. Frailey (excerpted from his May 1986 *TRAINS* article, "Super C")



STEVE PATTERSON

Four SD45-2's totaling a rated 14,400 h.p. roll the westbound *Super C* toward Kingman, Ariz., on March 13, 1975. At today's diesel fuel prices, can you imagine such an overpowered train—even a short, super-fast premium intermodal service?

ic braking was: 1) Reduce the power throttle to idle position; 2) Transition lever in position 1 for at least 10 seconds, before transition lever is moved to off position for not less than 5 seconds, then move into braking zone; and 3) Leave in braking position for not less than 5 seconds, before moving farther into braking zone.

By going through this procedure at every slowdown location, then following the reverse procedure to release the braking force, you would lose substantial running time. So except for long descending grades, such as California's Cajon Pass and two places on the 1st District of the Albuquerque Division, dynamic braking is not practical for use on *Super C*, even though Santa Fe's rule states that the dynamic brake must be considered as



FRANK AND TODD NOVAK COLLECTION

As a scheduled service, *Super C* ran, even when business was slack, as evidenced by F7 340 with this minimum consist at Joliet, Ill., in the mid-1970's. It lasted eight years.



primary braking force.

We are out of Quirk and have about 6 miles to another restricted-speed curve, 65 mph, at Laguna. Our speed resumes through Acomita and McCartys to MP 84, just west of McCarty's, where we are faced with eleven 55-mph curves before reaching Anzac. So, in advance of MP 84, I start the air-braking process. At MP 88.5, between Anzac and Grants, is another 55-mph curve. After negotiating that one, we are again making 90 through Grants, and on through Reid, Blue Water, and Baca, where the main tracks again split owing to grade conditions. They're separated through South Chaves to Thoreau, where they temporarily rejoin. Five miles west of Thoreau is the siding and station of Gonzales, the Continental Divide.

We top the grade at 90, and the main tracks again separate; this time, the eastbound curves to the north. Just prior to the crest of the divide, I shut down the throttle since we are approaching the downgrade, which extends 28.3 miles to

Gallup. For the long downhill run, I take advantage of the dynamic brake, because it will do a good job of maintaining 90, and we will lose no time using this procedure here. About 2 miles from the yard limit board for Gallup, I set about 12 pounds of air, then release the dynamic brakes and control the train speed with the train air brakes through Gallup.

During 1967 and 1968, we changed crews at the Gallup yard office "on the fly," that is, we reduced train speed to 2 or 3 mph, at which point the outbound crew boarded and took control of the train, and then the inbound crew would disembark. This also was done elsewhere on the Santa Fe, but Gallup was the only crew change point on the Coast Lines where it was done. It was subsequently discontinued for safety reasons.

As we approach Gallup, a voice over the radio from the caboose says we are to stop at Gallup because Raymond D. Shelton, our operating vice president out of Chicago, wants to walk forward from the

caboose to the business car *Topeka* to ride. This means there will be no moving crew change, which costs us a tad of running time. My guess is that Mr. Shelton had been riding the rear end at the maximum speed of 79 mph, but when 90 became the norm, he thought the business car would give him a more comfortable ride.

Our total time for the 141-mile 1st District was just about 2 hours flat, an average of better than 70 mph.

## 2ND DISTRICT RACETRACK

When our operating vice president is safely aboard the business car and the 2nd District crew is ready, we leave Gallup, doing 30 mph within the yard limits until reaching MP 161. As the engines pass the milepost I have the throttle in Run 8, and shortly we are again doing 90.

Westward, the 2nd District is "the racetrack," 127 miles of descending grade with only two curves carrying speed restrictions. Leaving Gallup, the first siding is Defiance, then Manuelito. The



STEVE PATTERSON

Bicentennial-decorated SD45-2 5700 leads three sisters on the "891 train," *Super C* eastbound, at Ludlow, Calif., July 20, 1975.

Arizona state line is at MP 179.5, and Lupton is at 180.4. At 90 mph, a milepost flashes by every 40 seconds. I have reduced the throttle to Run 3 or 4, as the descending grade allows me to easily maintain 90.

The noise level has also diminished, and the locomotives seem to create a floating sensation. The stations keep flying by—Houck, Cheto, Chambers, Navajo, Pinta, Adamana (location of the petrified forest). We next pass Arntz, and approaching MP 252, it's time to go to work and set the train brakes for the 60-mph curve going into Holbrook. After Holbrook, where short line Apache Railway comes in on our left, I increase the throttle to get us back up to 90. We fly through Penzance, Joseph City, and then Hibbard, with its 60-mph curve. Hibbard is the last station before Winslow.

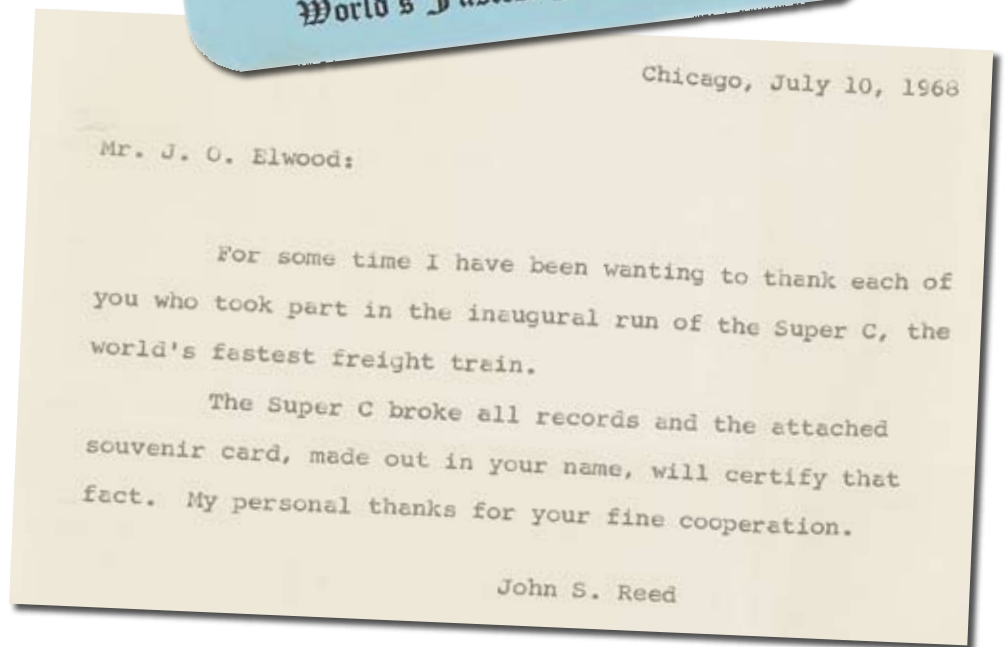
We are now only 11.5 miles from Wins-

low and soon are again making 90 mph. The Winslow yard limits are at MP 284.5, so about 3 miles from the board, I reduce the throttle to Run 1 and set about 12 pounds of air to reduce our speed, all the time watching the speed recorder and increasing the set of the brakes to have our speed at 25 mph passing the yard limit board. I release the brakes at a point where I will maintain 25 to the west end of the fuel rack in Winslow, bringing the train to a stop with a final set of the brakes.

All too soon, it is time to climb down off the first *Super C*. We've made our 127-mile run over the 2nd District in 1 hour 38 minutes, including the short delay at Gallup. That's an average speed of about 78 mph, the highest in the train's almost 2,200-mile dash from Chicago to Los Angeles. The train went on to Los Angeles, tying up in Hobart Yard at 10:36 p.m. on January 18,

with a total elapsed time of 34 hours 35 minutes 10 seconds, Chicago to Los Angeles. This beat the time of the second pre-inaugural test train by 11 minutes.

From an operational standpoint, the *Super C* was the super-reliable, super-fast freight train it was intended to be—an outstanding success. From a commercial standpoint, though, it never achieved the goal set for it. Nevertheless, for the 8 years, 4 months, 13 hours, 29 minutes, and 50 seconds the service operated, *Super C* was the hottest hotshot on the Santa Fe, and a source of pride for all employees. Those of us who were involved with the testing and daily operation of "Mr. Reed's Baby" were proud that we helped make it happen. It set the standard for sustained speed that no other freight has surpassed, earning the title "World's Fastest Freight Train," which it retains to this day. ■



Santa Fe showed its customary class in recognizing employee contributions "to the cause," evidenced in the case of *Super C* by this souvenir certificate card and personal note from President John S. Reed, prized mementos in author Jack Elwood's collection.