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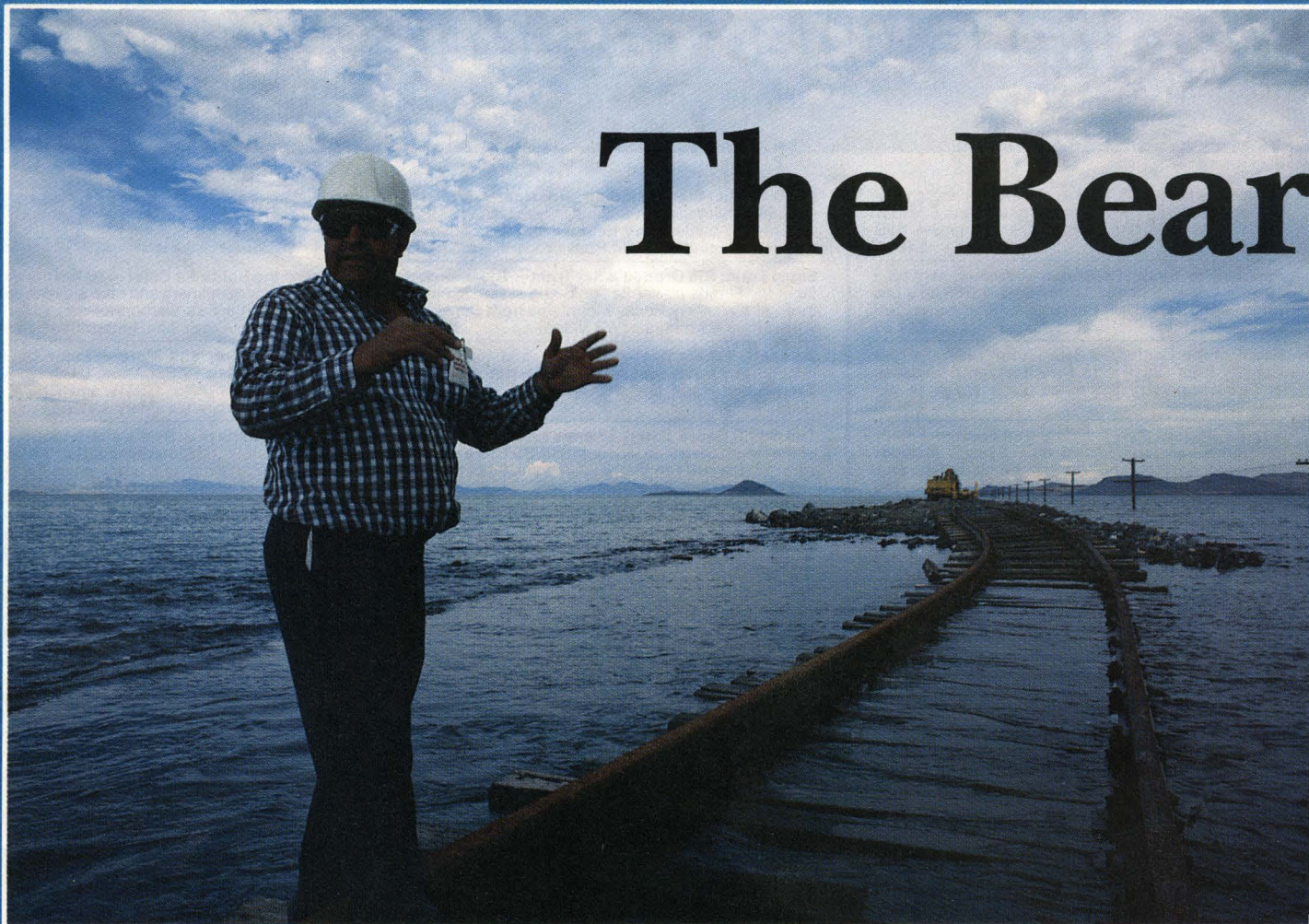
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GREAT SALT LAKE VS. SOUTHERN PACIFIC



The Bear



vs. The Lake

The Lake blinked

RICHARD STEINHEIMER

PHOTOS / THE AUTHOR

I THE battle to restore Southern Pacific's Lucin Cutoff was a tough one, even for a fighter like Jim Mahon. "The Bear" was assistant engineer for the Sacramento Division and the kind of guy you'd pick to help fight a football game or a riot. He grew up in a big railroad family within spittin' distance of the Tehachapi Loop and, as Lucius Beebe described Central Pacific's work force, is "a graduate cum laude from the educational institutions of Blue Canyon and Emigrant Gap."

Mahon's adversary was Utah's unruly Great Salt Lake. When colossal forces collide, something has got to give . . . which for now is the Lake.

The Bear and his crews were fighting the highest waters ever recorded for the Great Salt Lake*, up 21 feet since 1963 to a level of 4211.85 feet above sea level. This is almost the design height of the new main fill built in

*Since recordings were made, the lake's height above sea level has ranged from 4211.60 feet in 1873, when the railroad skirted its shores around Promontory, down to lows of approximately 4196 feet in 1905 after completion of the Lucin Cutoff, and about 4194 feet in 1964 on the eve of the current rise.

1959 by Morrison-Knudsen with the equivalent material of three Grand Coulee dams to replace the 12-mile 1903 trestle which for five decades carried SP passenger and freight trains across the deepest waters of the lake.

At risk were a total of 40 miles of SP Overland Route embankments west of Ogden, Utah, including the lesser known Bagley, Saline, Rambo, and Strongknob fills.

Rising waters scored a near knock-out of the Lucin Cutoff with the storms of June 5-7, 1986; 60 mph winds raised huge waves, sinking more than 11 miles of railroad beneath the churning brine. In many places mainline steel was shoved off the eroding embankments against the adjacent pole line.

This sent SP trains detouring over the also-shaky Union Pacific (ex-WP) line around the south end of the lake, parallel to I-80 which was partially inundated west of Salt Lake City.

The Lucin Cutoff seemed to be going the way of Henry Flagler's railroad to Key West, Fla., destroyed in the hurricane of 1935. Timbers from the disintegrating deck structure of the old trestle littered the surviving embankments. Three work trains were trapped at Lakeside; Ogden became almost dormant as SP-Rio Grande interchange shifted to Roper Yard in Salt Lake City.

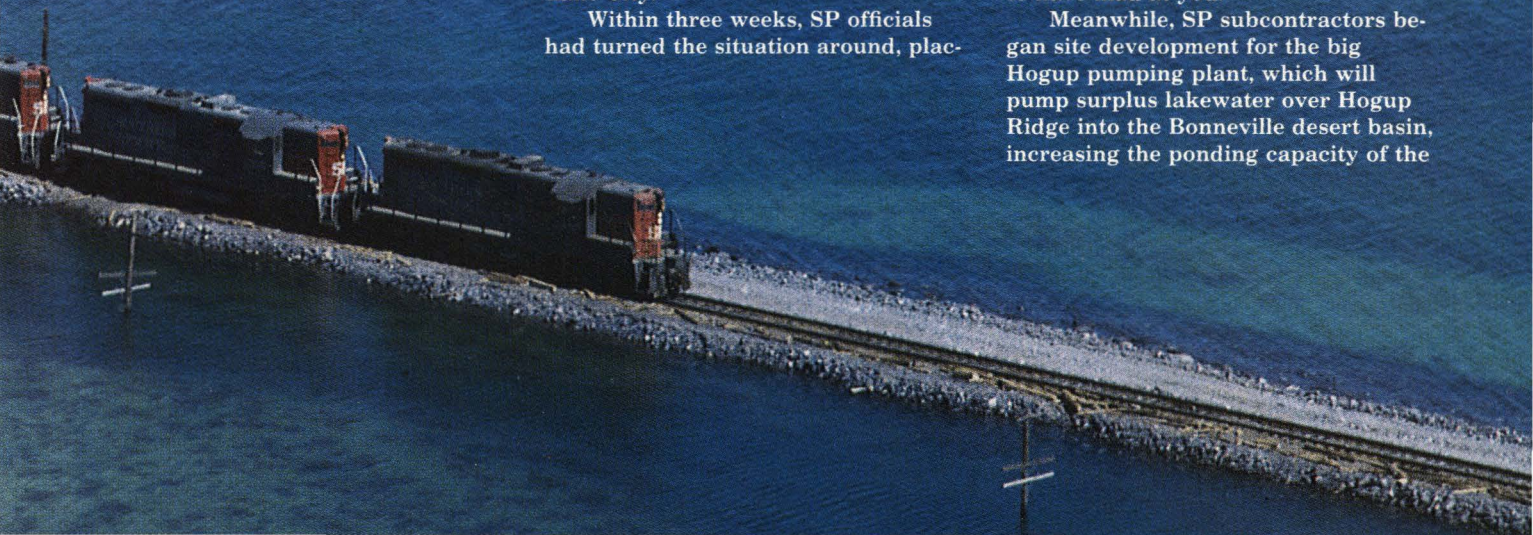
Within three weeks, SP officials had turned the situation around, plac-

ing the Bear in charge of restoration and signing a \$22.8 million contract with the State of Utah for site development work for the ambitious West Desert Pumping Project, designed to prevent further damage to property around the lake by pumping water into the barren western desert.

A key feature of the project called for restoration and widening of the heavily damaged 14-mile Strongknob fill between Lakeside and Hogup; this would provide a two-lane road to the Hogup pumping plant site, which would avoid a highway detour through Nevada of over 200 miles. Until the high waters of the 1980's created a new west arm of the lake, the earthen Strongknob fill had run west from Lakeside across a dry salt flat desert.

Now, with a contract in hand, rock really began to fly. The Bear's first move was to build a new town for SP and contractor forces at Hogup, which rose from the sands into a functioning settlement in two weeks, displacing 22 rattlesnakes. As many as seven work trains began dumping rock in all daylight hours, east from Hogup, west from Ogden, and both directions from Lakeside. The big quarry at Lakeside went back to 24-hour operation under the direction of H. D. "Heavy Duty" Wilson, another guy you wouldn't want to have mad at you.

Meanwhile, SP subcontractors began site development for the big Hogup pumping plant, which will pump surplus lakewater over Hogup Ridge into the Bonneville desert basin, increasing the ponding capacity of the





THE BIG DAY, August 4, 1986—and the Bear and his track foreman, Tony Martinez, standing under white Milepost 727, wave dozers, sidecasters, and backhoes in to close the last gap in Strongknob fill, ending isolation from the 727 miles' worth of Overland Route to the west. Rails will be joined August 11; the first mainline trains will roll August 23.



WIDE-BLADED BULLDOZER assists in spreading load of another 68-car work train into blue waters of Great Salt Lake. More than 2 million tons of rock and fill were needed to protect fill from latest lake onslaught. Building the fill originally in 1959 required the equivalent of material used in building three Grand Coulee Dams.



lake and its evaporative area. Spoil from the excavation became immediately available for lake fill and for raising of 25 miles of main line west of Hogup in the area to be flooded.

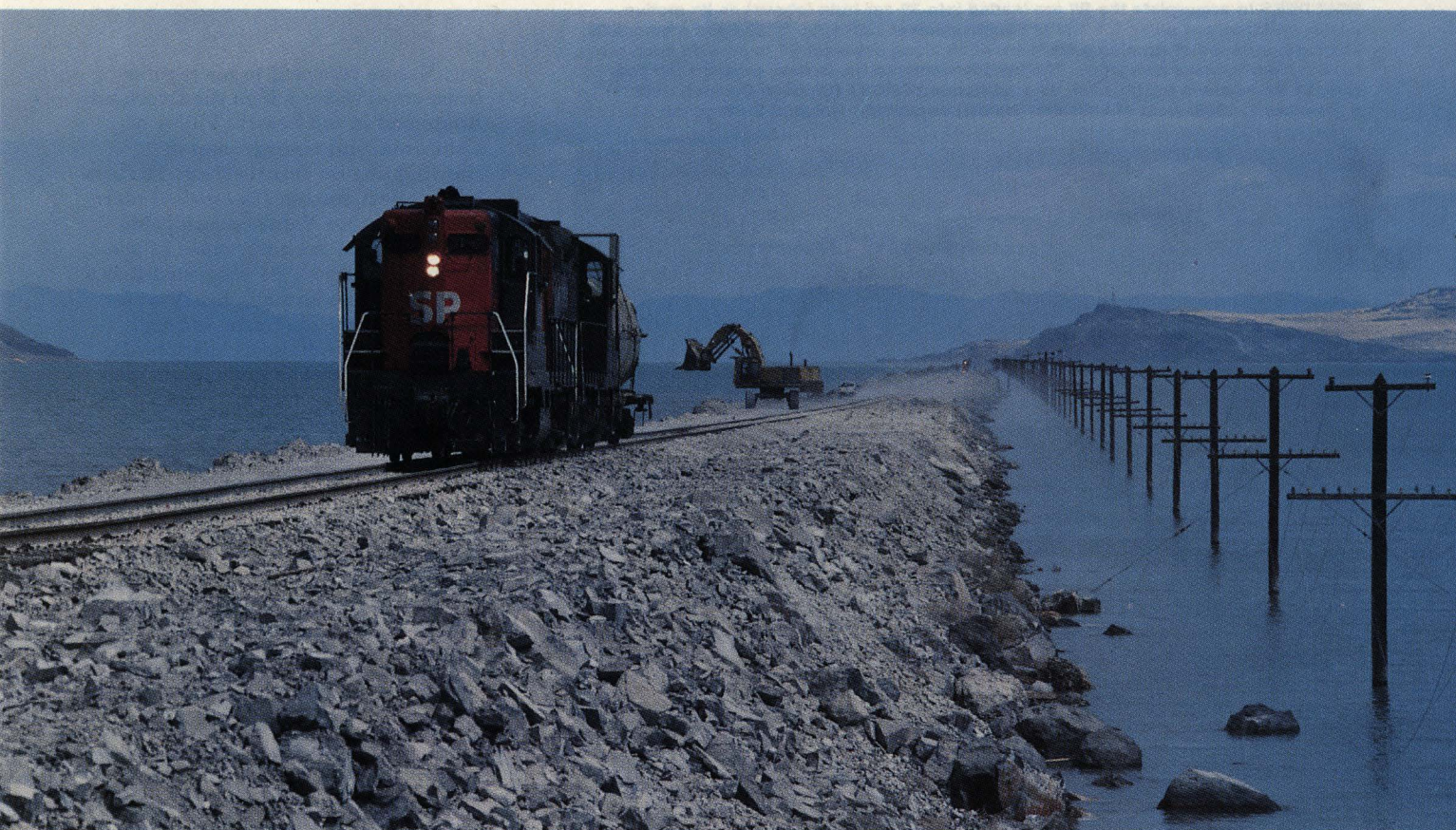
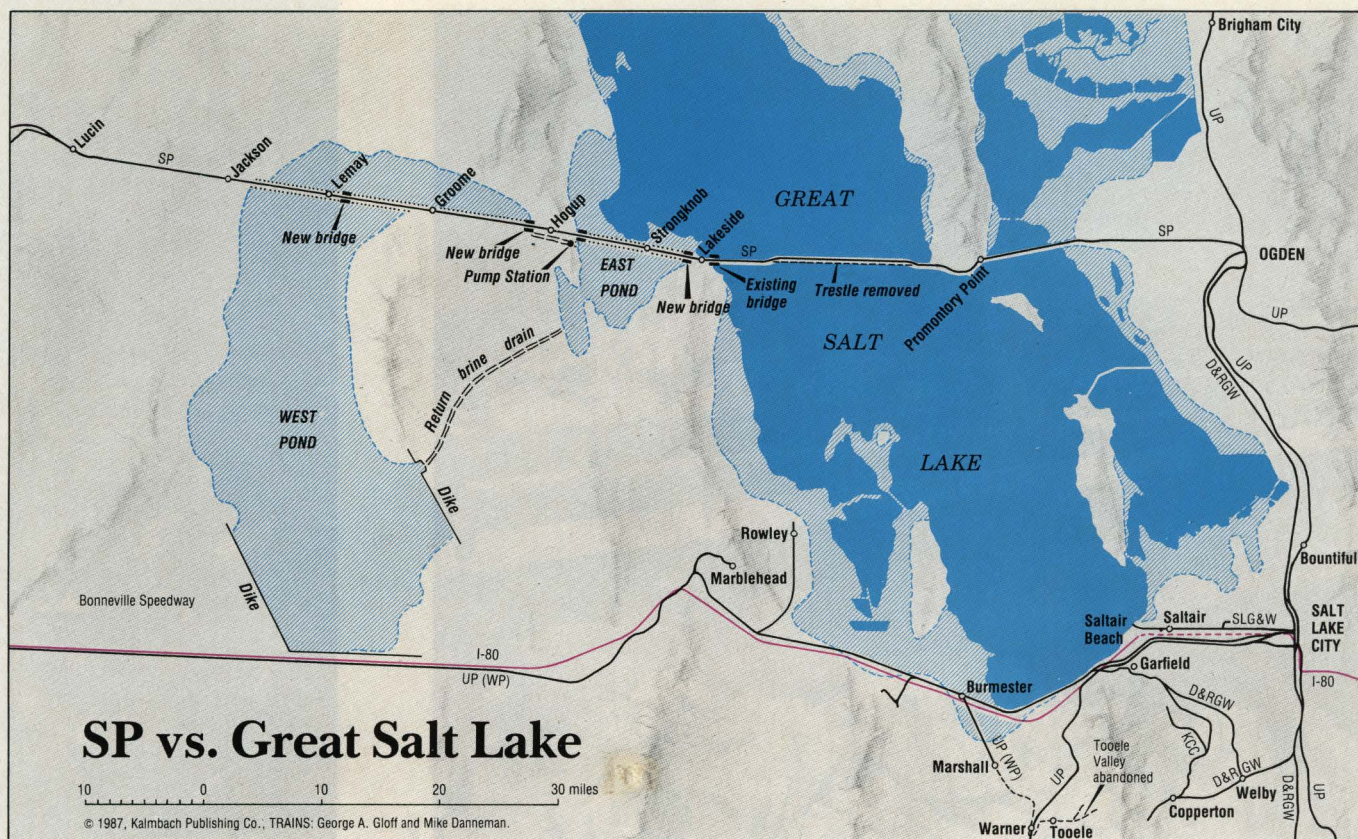
The contractual deadline for completion of the Lakeside to Hogup road was August 18. But—backed up all the way by his experienced, tough boss in Sacramento, division engineer Bill Lynch—Mahon brought the opposing embankments together at Milepost 727 on August 4. The road was opened to contractors two days after that, and a week later the rail link was restored. Mahon's round-the-clock drive in every aspect of the work inspired young and old hands to do their jobs in the safest, fastest way possible . . . or let management know the problem.

Fighting on another front, the Bear's crews began construction of another community at Lemay, 20 miles west of Hogup, to speed up the raising of track in this future ponding area. Meanwhile, crews working under the direction of Roadmaster Kenny Mahon (a nephew), Robert Burton, and Tony Martinez had restored the mainline rails across the main body of the lake.

On August 23, the first SP revenue trains began rolling again across the Lucin Cutoff within a 6 p.m.-to-6 a.m. operating window. Trains are limited to 20-30 mph across the lake, dispatched by Direct Traffic Control (radio) until CTC is restored. A few daytime trains operate over the UP.

Mahon's struggle to raise and armor the fills with heavy rock required dumping most of the 2 million tons of fill estimated for the job. An early November storm with a few gusts to 60 mph proved the ability of his armored fills to withstand a strong north wind. With the cutoff out of immediate dan-

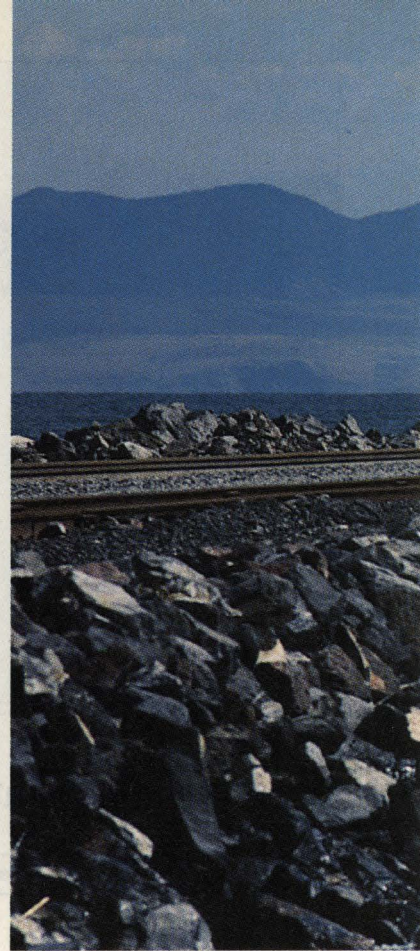
FIFTY-FIVE CARS of rock and fill are dumped at Lemay August 5 to raise level of right of way and furnish a pad for crew housing. Montebello local at left picks up tank cars to supply construction communities at Hogup and Lakeside, 20 and 34 miles eastward.



LONELIEST LOCAL? Montebello local heads for Hogup, a 72-mile run without a single grade crossing, with one water car cut in behind GP9E 3187 and SD9E 4310. Local handles chores (bridge piles, water, other supplies) so work trains will not be distracted from their mission.



BOULDERS to armorplate the fill are loaded into 38-car train (above) as its motive power switches out piling for bridge construction at Lakeside. Once upon a time 2000 box cars, stripped of running gear, were sunk along the main fill to provide such protection from the lake's vagaries. The boulder-armored fill, in turn, protects the passage of the revenue traffic, such as a westbound CHOAT (Chicago-Oakland trailers) on September 7, 1986, west of Lakeside (below) on partially finished Strongknob fill.



ger, Mahon returned to his regular track supervision job on the Overland Route and in the Central Valley of California, and management of snowfighting on Donner Pass. The new lake project manager is Lewis Ruder.

But Mother Nature doesn't sign contracts, and the early onset of winter in September 1986 suggested that a fifth year of abnormally heavy water runoff in the Great Basin and Salt Lake Valley might be at hand. By December the lake had gone up an ominous 2 inches, and with 40 miles of fill, trouble can find places to strike.

The Bear's fast start for the project should mean the first of three big pumps at Hogup is already running, despite construction delays from extremely high ground water levels.

It's a race without a clear finish, but the Bear and other fighting SP railroaders have gained a few strides on one of the toughest enemies any American railroad ever fought. 1

RICHARD STEINHEIMER, 57, dean of Western railroad photographers, has covered Southern Pacific through fair weather and foul, the latter including blizzards, earthquakes, floods, and sandstorms. Predictably, then, he was on hand when Great Salt Lake threatened to eradicate Harriman's Lucin Cutoff of 1903.

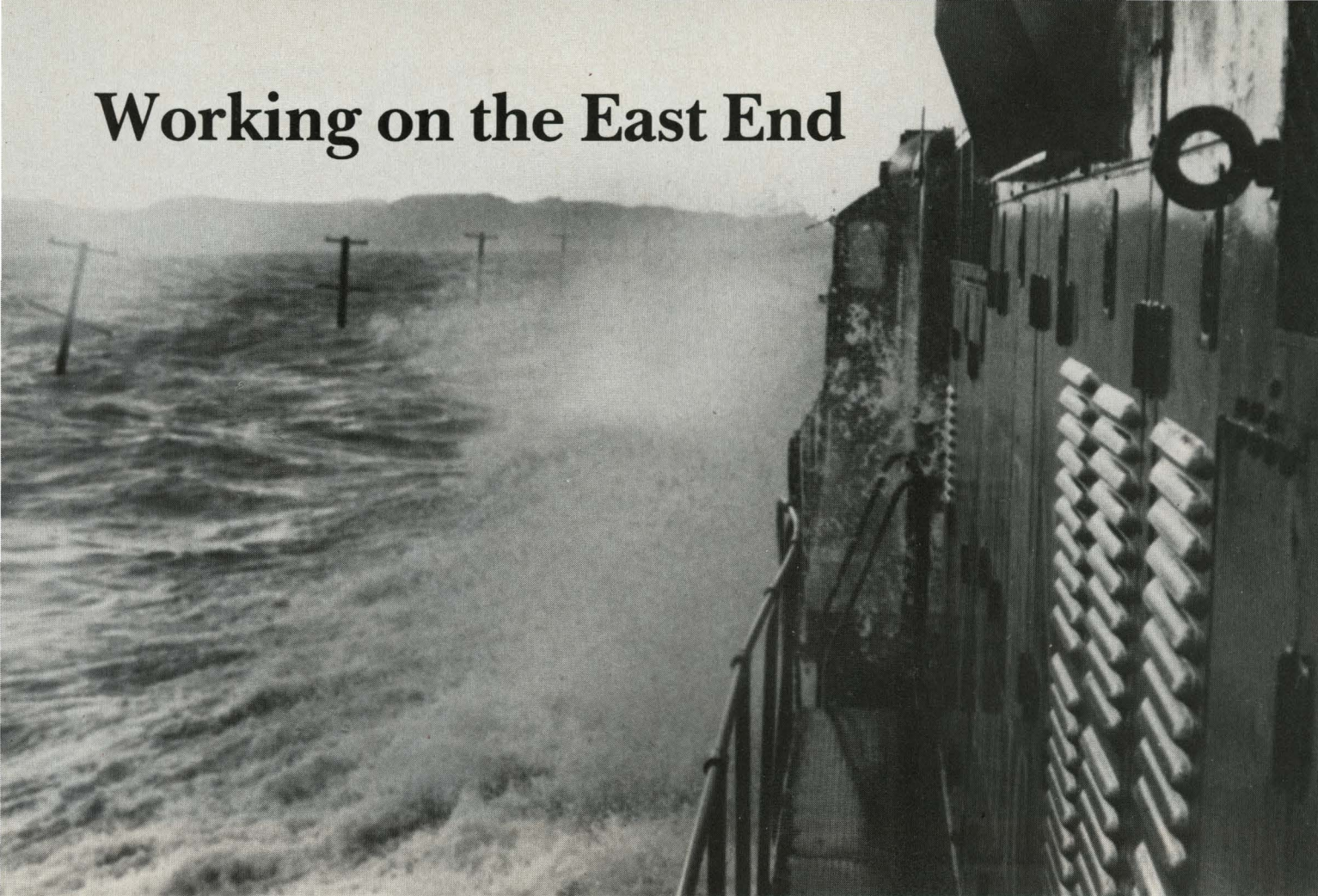


ON Sunday, September 7, 1986, a westbound freight rolls into Lakeside off the Rambo fill west of Tresend . . . the operating window allows Espree 12 hours per work day for revenue movements pending a diminished threat to the fill by the lake.

ELECTRICIAN Darold Rawson rolls up Hogup Ridge in his pickup, with the new west arm of the lake spread out behind him, and one of four bridges being built for the West Desert Pumping Project. At right of far end of Strongknob fill: Lakeside quarry mountain.



Working on the East End



Bart Edwards; collection of Doug Harrop.

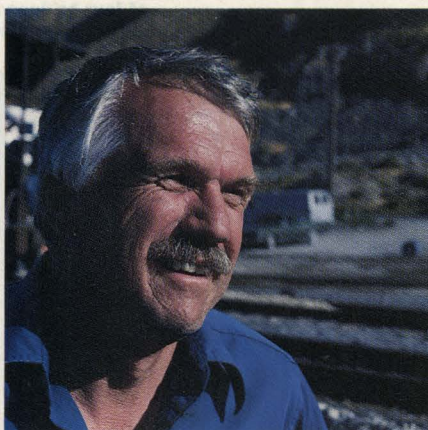
I **LOCOMOTIVE** engineers everywhere face their own unique and peculiar operating situations, from Arctic tundra to Louisiana bayous. And each responds to those challenges in unique ways.

Listening to Doug Harrop, you get the idea that he enjoys just about everything he does, including being an engineer on the east end of SP's Sacramento Division—one of the more unusual places to make a living driving trains. (When he's not running an engine himself, he enjoys the company of other hoppers, especially in British Columbia, as he wrote and pictured in "Rogers Pass Reverie," November 1986 **TRAINS**.)

Like other SP "lake rats," he could hardly wait to get his own railroad back after detouring on the UP during reconstruction of the Lucin Cutoff after the storms of June 1986. In fact, most of Harrop's recent service is on work trains dumping protective rock on the lake crossing.

Here Harrop describes a few of the rewards and problems of moving trains across the Great Salt Lake basin in this era of high water:

The flow of traffic west from the Salt Lake Valley to California's Bay Area is as important to SP as to competitor Union Pacific, and both lines



Richard Steinheimer.

LAKE VET: Engineer Doug Harrop.

have been upgraded in recent years. Our route was greatly improved by UP President E. H. Harriman in 1904 by completion of the Lucin Cutoff straight across the lake, avoiding the steep detour to the north over the Promontory Mountains. This and other improvements provide a 180-mile shorter route to Oakland from Ogden for trains using the SP Overland Route vs. UP's Feather River Canyon line. SP's steeper grades are probably more than

compensated for by an additional 350 miles of double track, beyond the 180 miles of paired track across Nevada shared by the two roads. Apart from the recent flooding, this gives us the opportunity for several hours faster freight timings to the California market. Our hot Chicago to Oakland Trailers (CHOAT) can roll along at 70 mph for most of that distance now.

The major feature of railroading west of Ogden is the Great Salt Lake, flat as the curve of the earth and one of the nastiest pieces of water in the world. The salt content is so high, typically, it kills much birdlife and all freshwater fish. The waves hit with one-fifth more force than normal sea waves and can tend to drastically reduce the weight of rocks or anything else in it. When nearly 2000 old box cars, minus running gear, were placed along the main fill several years ago when the salt content was almost 28 per cent, they would sometimes just float around and refuse to sink. In the 55 miles from Lakeside to Lucin, there's just one curve in our mainline track. That area across the lake and the western desert is so undeveloped that after we leave Little Mountain, west of Ogden, we cross only one

paved road in the whole 150 miles to Wells, Nev., and not many more in the remaining 73 miles to Carlin.

On June 6, 1986, I was engineer on a work train near Midlake, on the main fill, repairing damage from the storm of the previous day. The weather at 3 o'clock in the afternoon was warm and sunny, the lake calm. Fifteen minutes later, a 15-mph wind sprang up, accompanied by some ominous dust clouds to the northwest. We suddenly realized it was cut-and-run time for us.

By the time we hit Tresend, 5 miles west, the wind was up to nearly 40 mph, lifting waves into the side of the train hard enough to rock the locomotives. Water was pouring around the sides of the closed cab windows, but my five Geeps were still backing the train at 10 mph in Run 3. Two miles nearer Lakeside, alarm bells were ringing and our speed was down to 6 mph in Run 8, with debris and drowned units slowing us up. The lake is many times saltier than sea water, sure trouble for electrical equipment.

Somehow, GP9E No. 2898 got us back to Lakeside all by itself. There, H. D. Wilson and his crew pulled several bridge beams and ties from beneath the wheels of our train. We were scared, and lucky. By 6 o'clock the winds were gusting to 60 mph and the fill damaged to the extent it would be 77 days before the next mainline train would cross the lake.

The day previous, our hot CHOAT train stalled at Strongknob siding in a violent storm. Engineer Bart Edwards was just a few miles from safety at Hogup when the stall occurred. Air problems? No. Debris problems. So much lumber and ballast was deposited by the waves beneath the train that it could not move in either direc-

tion. Thirteen hours later, as the winds slacked, a rented helicopter plucked the four hungry but dry crewmen from the train and took them to Lakeside. The chopper later took me and Road Foreman of Engines J. D. Slade to the partially cleared right of way, where we boarded the train and brought it to dry land at Hogup for a regular crew to take to Carlin.

The lake can be hard for trainmen, too. One brakeman out to inspect the power switch at Tresend was nearly swept off the embankment by a 15-foot wave. He was soaked even beneath his slicker. As the train proceeded west and cab heaters dried him out, he found it harder and harder to move—the high concentrations of salt in the water had made his clothes stiff as cardboard. In 1985, one rear-end crew had to walk the length of their stalled train in a driving winter storm to get

picked up by maintenance people in a front-end loader at Bridge. They arrived wet, cold, and tired. Next week, the conductor took an early retirement. Now record runoffs have diluted the lake, with salt content only 6 per cent north of our fill and 18 per cent south.

Of course, the lake is not always violent. In fact, most of the time it's a delight to behold. The sunsets and sunrises are stunning, unforgettable. My favorite times are warm summer evenings, with a full moon being reflected brilliantly on the mirror-like lake surface, with the still snow-capped Wasatch Mountains shimmering majestically in the distance above the lights of Ogden. I've heard veteran engineers say they would rather make a trip across the lake in these conditions than run anywhere else on the SP system.—DOUG HARROP.



Bart Edwards; collection of Doug Harrop.



Doug Harrop.