CHAPTER VII

UNION PACIFIC

More Than a Railroad—Vacation Resorts, Ore Move, Farm Scholarships, Trailer-on-Flat-car Freight

The varied and ramified operations of a modern American railroad are nowhere more clearly exemplified than in the widespread operations of the Union Pacific. Its right of way running through areas marked by some of the country's most breathtaking scenery, the UP maintains a subsidiary company, the Utah Parks Company, which operates a year-round cafeteria camp center in Zion National Park; it transports thousands of carloads annually of the West's important iron ore; it awards agricultural scholarships to deserving students in the eleven states through which the railroad runs; it operates and continues to expand an important piggyback freight service for its shippers.

These manifold activities—recreational, educational, and commercial—are an outgrowth of UP's historic role as a vital factor in the opening of the great West and in the building of America.

Each summer the Union Pacific sponsors low-cost all-expense tours from Chicago to the Utah national parks, Zion and Bryce Canyon. One of the UP's finest streamliners carries its passengers to Cedar City, from which point the railroad's sightseeing bus fleet takes the visitors to Cedar Breaks National Monument, to Kaibab National Forest, and to sections of the two great parks most sought out by sightseers.

Perhaps nowhere else in the entire world has nature created such colorful, rugged, weird beauty with such great strokes of her ever amazing brush. At Zion National Park, for example, the

Virgin River's swirling waters have over millions of years carved the startlingly colored Zion Canyon out of the towering beds of Navajo sandstone. Unbelievable sculpture in vivid vermilions, yellows, and blues is the result that the visitor has unfolded before his awe-struck vision. Far back in the canyon, where the walls taper off to form narrows, one finds the well-named Mystic Temple of Sinawava, enclosed by a natural amphitheater of trees and sheer rock walls. A profusion of highly colorful flowers, ferns, and trees offers a glorious color contrast to the brooding dark red hues of the temple itself.

Through Zion National Park there are twenty miles of improved roads affording visitors a succession of magnificent scenic views. In addition there are some twenty-six miles of trails available solely to hikers and horseback riders, where guides may be hired and horses rented. The Zion–Mount Carmel highway, world-renowned as an outstanding feat of engineering, is constructed inside a solid cliff for a full mile, and from six different galleries broken out through the face of the cliff the visitor views a succession of magnificent breath-taking scenes.

Even the names that have been given to the scenic wonders of Zion National Park are themselves exotic and exciting: the East and West Temples, the Altar of Sacrifice, Angel's Landing, the Three Patriarchs, and the Great White Throne, which rears its magnificent head some 2,500 feet above the valley floor. The Virgin River falls from fifty to ninety feet each mile of its course and erodes about three million tons of rock each year; in railroad terms, this is equivalent to an average of 180 carloads each day!

Zion National Park embraces about 135 square miles, and was so named by its pious Mormon discoverers and explorers whose deeply religious nature made them reverently aware of its heavenly tranquility. The Altar of Sacrifice, named by the same Mormon pioneers, derives its title from the blood-red quality of the rock that stains the pure white mass of the two-thousand-foot sides of sheer stone. The Great White Throne, perhaps the most famous of all the natural wonders within the borders of Zion National Park, is a miracle of color combinations. Set on a

carpet of rich green, crowned by the unique deep, vivid blue that characterizes the Utah sky, the rocks ascend from a base of warm-hued mahogany through a series of delicately tinted pinks into pinnacles of pristine white capped with green pines.

Bryce National Park, also served by the Union Pacific, is a tremendous bowl of horseshoe shape that has been cut by erosion from the pink cliff formations that surround it. It is about two miles wide and three miles long, and its majestic rim is eight thousand feet high. It strikes visitors as a veritable fairyland with its brilliant and bewildering variety of sculptured sand shapes alive in rich, glowing colors. Throughout there are statues of famous people, spires, minarets, cathedrals, castles, bridges, and a host of naturally formed shapes that defy human description.

What is no doubt the understatement of all time has been attributed to Ebenezer Bryce, the Mormon pioneer who discovered the amazing area and who was the first man to settle there. He is the only man for whom any of our great national parks has been named, and in 1928, when the park was officially established and named for him, the old man said, in response to a request for a statement from him, "I remember it was a bad place to lose a cow."

Visitors have been advised to view the canyon from the west rim in the morning and from the east rim in the afternoon, since the most rewarding views can be obtained by placing the weird formations between the sightseer and the sun. There are horseback and foot trails running along the rim of the canyon in both directions from Bryce Lodge, a modern inn of rustic design surrounded by cabins nestled among the area's pine trees.

An additional feature of the Union Pacific's tour of the scenic wonderlands of Utah is found at Cedar Breaks National Monument, a series of vast chasms eroded to a depth of some two thousand feet and encompassing a total area of about sixty square miles. Thousands of unusual natural forms, reflecting every color imaginable, are found within its boundaries. Nearby, UP maintains a handsome, comfortable, forest-set inn, Cedar Breaks Lodge.

Then of course there is still Sun Valley, Idaho—tops in winter sports, unsurpassed for spring, summer, and fall vacations.

But the service the Union Pacific offers to America's vacationers each year in transporting them to the scenic wonderlands of the West is only one facet of the railroad's vast operation. In Utah there are found not only breath-taking vistas but commercially important iron ore as well, and it is the UP that is called upon to move this vital product from its source to areas where it can be fabricated into products needed and wanted by modern man.

In the state's Iron Mountain district the railroad loads ore at Iron Mountain and at Desert Mound for the Columbia Iron Mining Company, at Iron Mountain and at Comstock for the Utah Construction Company, and at Iron Springs for H. L. Beatty. In 1957 the UP moved a total of 72,802 carloads of iron ore, ore fines, and sinter to various points. Included in this total were 51,076 carloads of ore to Geneva and Ironton, 16,569 carloads to Minnequa, 2,601 to Fontana, 110 to the Missouri River and east, 2,119 to Long Beach, California, for export purposes, and 59 carloads of ore fines and sinter to Geneva and Ironton.

Ore fines are screenings that are obtained from the ore that comes from the Iron Mountain district, while sinter is described as the lumps that are in turn made from the fines.

In 1921, when the late Carl Gray had but recently become president of the Union Pacific Railroad, he began to investigate the educational opportunities that existed for farm youth in the area served by the road. Through his efforts, UP then developed a scholarship plan that today serves to encourage young people to further their education in agriculture. This is a public service that has contributed much to the renown of the railroad throughout the eleven states in which its trains serve passengers and shippers alike.

The original scholarship plan, undertaken on an experimental basis, offered a $100 award in each county in Nebraska served by the UP on the basis of work done by farm boys and girls in 4-H

Clubs. Within a year the plan had proved so successful and was so well received that Mr. Gray made arrangements to extend it to Kansas, Colorado, Wyoming, Nevada, Utah, Idaho, Oregon, Washington, Montana and California.

By 1926 these scholarships were firmly established and were then made available to high school vocational agricultural students in all those states. Originally known as the Union Pacific scholarships, the awards were renamed in 1939 in honor of Mr. Gray and are today called the Carl Raymond Gray scholarships.

Under the rules set for judging to whom the awards will be granted each year, high schools to which the plan applies must be located in counties served by the Union Pacific Railroad and must have an established vocational agriculture department in existence for at least two complete years. The award must be used within the same state in which it is granted, at a state college or school of agriculture, or for agricultural engineering, agricultural education, forestry, or veterinary medicine when such courses are given in a school that is part of the state agricultural college.

The railroad itself does not take any active part in the judging; in each county a committee of three is set up, consisting of two members named by the state supervisor of vocational agriculture and a third named by those two persons. The committee, subject to the review and approval of the state supervisor, makes its choice from among the county's high school students based on the supervised farming program engaged in by the applicant, his scholastic standing, and such qualifications as character, interest, leadership qualities, and community and extracurricular activities. When qualifications of several applicants are so high as to make the choice a difficult one, the UP authorizes the state supervisor to make his selection from among the members of the senior class or from among those applicants who have been out of high school for not more than one year.

With only very special exceptions permitted, the winner must be chosen from among the top one-third of his class insofar as his grades are concerned.

Each applicant must submit to the county committee a standard application form containing a summary of his personal history, his supervised farm work, his community and extracurricular interests, awards he may have received previously, and a listing of any publicity received as a result of his work. He must also send the committee a picture of himself and of the project he has engaged in, as well as a transcript of his school grades, signed by his principal or superintendent, a story of at least five hundred words describing his project, and letters of recommendation from educational, civic, and religious leaders.

After review by UP, the winners and alternates are officially announced by the state supervisor of vocational agriculture. In addition to providing the $100 scholarship to each winner, the Union Pacific transports each successful applicant on one round trip between his home and the college he has chosen to attend, provided that travel is made by UP facilities and that it is limited to points within the borders of a single state.

The railroad makes no payment directly to the students who are selected, but instead pays the college the amount of the scholarship award upon receipt of a certification of enrollment sent to UP by the college authorities.

Progressive in its operating policies as well as in its community relations program, the Union Pacific is one of the increasing number of railroads that are offering shippers the advantages of trailer-freight, or piggyback, service.

In 1953 UP began an experimental TOFC operation between Los Angeles and Las Vegas, which proved so successful that within four months it had been extended to the Salt Lake City area. During the first month of original service, only nine trailer loads were carried; today UP runs 145 specially equipped flatcars and a total of 216 trailers, some of which are fully insulated vans.

The insulated vans furnish important protection to their contents during extremely hot or cold weather; studies are still in progress to determine the best methods for refrigerating perish-

ables, with both dry ice and mechanical refrigeration being tried out under day-to-day operating conditions.

UP TOFC operations now cover some 2,500 miles of rail line. In addition to the original run, trailer-freight service is now available to shippers to major communities in Utah, Idaho, Nevada, Oregon, Washington, Wyoming, and points on the Southern Pacific Railroad through interchange at Wells, Nevada, Ogden, Utah, and Portland. In its eastern district UP participates in through TOFC service between Chicago-St. Louis and Denver, by means of interchange with the Milwaukee Railroad at Council Bluffs, Iowa, and with the Wabash line at Kansas City. Between Omaha and Kearney, Nebraska, the line handles trailers owned outright by its shippers, but elsewhere the traffic is restricted to UP-owned vehicles.

Some of the railroad's flatcars have been specially equipped with stakes and sideboards; handling steel from Geneva to the West Coast, these flats are then used to transport roofing materials, machinery, lumber, and pipe on the return journey. Other eastbound products consist of a great variety of items, including canned goods, paper products, crude rubber, floor tile, and appliances. On the westbound run trailers may be loaded with powdered milk, butter, cheese, various chemicals, and several different kinds of steel products.

The service has been responsible for a full one-day improvement over previous freight schedules between southern California and the Nevada-Utah-Idaho area, and records show that the time advantage increases with the distance the merchandise is shipped. From the West Coast, schedules provide for first-morning delivery at Las Vegas, second-morning arrival at various points in Utah, and either second-morning or later in the second day delivery at several Idaho yards. Out of Portland, first-day delivery is effected to the Boise-Nampa area, with delivery the next day in Twin Falls, Pocatello, Idaho Falls, and Salt Lake City.

Each day an average of about a dozen trailers leaves Los Angeles and about eighteen are driven off incoming flatcars at this same southern California terminal. The railroad has adapted

both 42-feet and 52-feet flatcars for its expanding trailer-freight service.

This, then, is the picture of a modern American railroad, active on a host of fronts simultaneously. Providing pleasant, unique vacation atmosphere for its passengers as well as sturdy, reliable, fast-moving equipment for the transportation of the nation's goods, and educational opportunities for the younger generation living in its service territory, the Union Pacific Railroad is growing and moving ahead with America.

CHAPTER XXVI

UNION PACIFIC

New CTC, North Platte Yards, Electronic Yardmaster, Radio, Laramie Icing Facilities

The modern miracles of electronic controlling instruments are being put to good use by the nation's railroads to increase their efficiency, provide greater safety, reduce operating costs, speed up schedules, and improve conditions of freight-handling. The Union Pacific railroad is in the forefront of this movement to put electronics to work for the benefit of railroad, passenger, and shipper alike.

Within the past two years UP has established modern centralized traffic control over a total of 391 miles of track, installed two-way radio communications to expedite freight pickup and delivery service in a major city, adapted a device originally invented to direct guided missiles for the purpose of controlling freight car coupling speeds in a yard, and in other ways modernized and improved its services and facilities through making use of the developments of modern electronic science.

The centralized traffic control operation, or CTC as it is more commonly known, has recently been established in two separate sections of UP's vast right of way. There is a 214-mile stretch extending from Granger, Wyoming, to Pocatello, Idaho, and another 177 miles of double and single trackage that runs from Laramie to Cheyenne, Wyoming; the railroad now totals 1,770 CTC miles.

CTC presents the great advantage of completely eliminating the need for giving written orders to train crews. Through small lights that appear on a board placed in front of a dispatcher, the

up-to-the-minute position of every train running over any given section of track can be seen at a glance. The board itself has on its face a simple, schematic line map of the track under control of the individual dispatcher; as he watches each train progress as shown by the changing lights on the board, he can direct and control train movements from his centralized position by flicking small switches that control signals all along the line.

Intricately designed and engineered equipment is used in setting up centralized traffic control. The 214-mile Granger-to-Pocatello stretch cost UP $9,000,000 for installation of CTC. But, as the railroad's president, Arthur E. Stoddard, has pointed out, "CTC can increase the efficiency of a line as much as 80 per cent."

In addition to the long lines of electrical connecting units and the trackside signal equipment that must be installed, the centralized control unit has to be equipped, and in many cases setting up of CTC brings in its wake redesign of line and discontinuation of some trackage as well as the laying of other new track. In the Granger-to-Pocatello project, for example, there is a concurrent 8.5-mile line change, involving grading, between Moyer Junction and Fossil, Wyoming; there is the setting up of a centralized control headquarters at Pocatello; there is the remodeling of an old roundhouse at Montpelier, Idaho, to serve as an operational base for the installation of signal equipment; and there is a retiring operation for some passing tracks in this section of the line, combined with extension of remaining passing tracks to a minimum length of 8,100 feet.

Passing tracks requiring extension operations are located at the Wyoming communities of Granger, Moxa, Nutria, Opal, Waterfall, Fossil, Orr, Leefe, Beckwith, Pixley, Cokeville, Marse, and Border; in Idaho similar extensions will be made on passing tracks located at the towns of Montepelier, Georgetown, Manson, Alexander, Bancroft, Pebble, Broxon, McCammon, and Inkom.

On the main-line track section between Cheyenne and Laramie, existing heavy-duty double track includes long grades of 1.55 per cent ascending westward over Sherman Hill. Normal

traffic in this area totals some twenty-four passenger trains, fifty-two freight trains, and twenty helper engine movements daily. In connection with the establishment of CTC functions at this location, UP built a new single-track line skirting the south side of the hill, and reducing the grade to 0.82 per cent. Intended primarily for westbound freights, the new line is also used by some westbound passenger trains. As a result, the main double-track line is now employed with greater efficiency by eastbound freight trains and by passenger trains headed in either direction.

With the completion of the new line, the signal system on the main double-track line was changed to increase the use of trackage. Where it had formerly been of the automatic signaling type, for right-hand running only, it is now under control of CTC and provides for signal indication in both directions. Thus at the option of the dispatcher, who sees the entire line of trackage on the board in front of him, any track can now be used to carry a train in either direction, under fully safe conditions at all times.

Prior to the installation of the new track and of CTC, freights lost much time because of the necessity of going onto sidings in order to clear the main track for passenger trains. Now the additional single track, plus the opportunity of safely using the additional line of main track in what previously would have been considered the "wrong" direction, provides for almost complete elimination of such siding delays.

As an added safety factor, duplicate signals appear right within the cab of each locomotive, picking up and repeating the reading on the next wayside signal as the train approaches it. Varying colored light combinations show the engineman exactly what the signal ahead of him is displaying, so that, even in the most inclement weather when wayside visibility is at a minimum, the engine crew at all times has a clear indication of what lies ahead.

Set up on a four-unit block system, the cab light will show a steady green just so long as the three block sections directly ahead of it are unoccupied. When within two sections of a preceding train, the engineman will see a yellow-over-green combination on his cab unit. Moving into the block immediately

behind one occupied by another train, he will see a red-over-yellow warning. And should he pass the next red wayside signal, his cab unit will continue to display its red-over-yellow combination.

The new signal system in the Cheyenne-Laramie area includes two-way indications on the original main line of 54.4 miles between those two cities; both ways on two tracks between Cheyenne and the west end of Speer, a distance of 8.8 miles, leading to a branch operation of a single line southward 12.7 miles to Carr, on the way to Denver; both ways on a single track length of 34.5 miles westward from Speer to Dale, where the single track joins the main Cheyenne-Laramie line; and 3 miles between the west end of Speer and another branch-main junction at Borie.

At Borie there formerly was a complex mechanical interlocking setup that included four switches, a crossover, and seven home signals. With the advent of CTC numerous track and signal changes were made, the old interlocking system was removed, and electric switch machines and light signals were installed. At Dale, where the new single track for westbound freights rejoins the main line, power switch machines and signals were installed, as well as at sidings built at Granite and Buford on the old main line, at Emkay, Lynch, Harriman, and Perkins on the new single-track line, and at both Warren and Carr on the southbound branch toward Denver.

This branch, prior to CTC installation, connected to the main line at a point just west of Cheyenne, in an interlocking operation known as Tower A. A second track has now been added to this line between Cheyenne and Speer, and pertinent changes have been made in the tracks and in the interlocking at Tower A. All in all, the entire CTC installation set up by the Union Pacific Railroad in the Cheyenne-Laramie operation and its branches involves seventy-three power machines, twenty-five electric locks on handthrow switches and ninety-two lever-controlled signals.

Safe operations for tracks crews are provided for as part of UP's new CTC project. At various locations along the right of

way, track occupancy indicators have been established to warn employees of approaching trains. Mounted in pairs, with one indicator facing in each direction, the warning signals bear numbers indicating the milepost to which the signal refers. They are spaced on time-distance factors, automatically calculated to warn a ten-mile-per-hour motor car of the approach of a train moving at the maximum speed limit permitted in the territory in which the signal is affixed.

If a motor car encounters a signal reading "clear," its crew knows that it will have ample time to reach the next indicator before any approaching train can possibly arrive. The signals are, of course, more numerous at curved sections where line-of-sight distance is relatively short. They operate under the control of automatic track-repeater relays, and are completely independent of the signal circuits that control train operations.

The new single-track line that was constructed to handle westbound freight and passenger trains runs through deep cuts through sheer rock walls at several places. Here there is always danger of blocked trackage from rock falls, but Union Pacific has installed special equipment that reacts to such occurrences by automatically setting red signals that will warn enginemen not to enter blocked sections.

Woven wire fencing lines the track wherever such falls might occur, and the fencing is attached to a small piece of wood, so set as to be under spring tension that holds the fence taut. A circuit controller is fastened in turn to this wood block. Should falling rock strike the fence, it causes the wood block to move, and the circuit controller is then set into operation to set warning signals at each end of the affected area. The section can be signaled "clear" once again, but only after a manual resetting of the circuit controller.

General Electric switch-heaters, a valuable installation in this country of heavy snows, have been attached to the inside of the web of the UP's stock rails in this area.

The entire CTC project was planned and installed by signal personnel of the Union Pacific Railroad, and makes use of sig-

nal equipment furnished by the Union Switch & Signal Division of the Westinghouse Air Brake Company.

The application of inventions developed for the armed forces to the peaceful pursuits of commerce is strikingly dramatized by the installation and operation of the "Electronic Yardmaster" in the Union Pacific's retarder yard at North Platte, Nebraska.

Here forty-two tracks, handling up to four thousand freight cars every twenty-four hours, can be controlled so as virtually to eliminate impact damage to boxcar lading normally resulting from human errors in judgment. The "Electronic Yardmaster" is an outgrowth and development of a device originally designed to direct guided missiles; at the UP yard it not only switches, but it automatically controls the speed of freight cars as they are pushed up over the hump of the huge classification yard for coupling. Railroad officials consider it a major advancement in the science of push-button railroading.

The speed of each rolling car is regulated by a series of car retarders that are electropneumatically operated or by trackside braking devices controlled from yard towers. As each car rolls down the incline its "rolling characteristics" are electrically determined and transmitted to an electronic brain. The distance the car has to roll in order to couple with waiting cars on the classification tracks (and this may be as much as two-thirds of a mile in some cases) is computed and is fed into the electronic brain by a device very similar to that used as range-finding equipment on big guns.

A radar speed meter continuously checks the speed of the car on its journey through the yard. With all this information, the device then calculates the correct speed at which the car must be retarded and then released in order to reach its point of impact speed at a safe rate, roughly three miles per hour.

The retarder control system into which this calculation is fed then automatically releases the freight car at just the right speed to permit it to roll freely down the track until it couples with the other cars to which it has been assigned. There is even an automatic compensation operation, which shortens the range

and changes the release point as the classification track becomes gradually filled with cars and lessens the distance that the car must travel to its point of coupling impact.

In the control tower there is nothing for the operator to calculate; all he is required to do is to select the tracks for which each of the cars is destined, by pushing buttons before the freight train is pushed over the hump. This information comes to him from the yardmaster, who gets it from his knowledge of the consist that is teletyped to him even before the train has entered the yard.

The machine has a memory that enables it to retain at one time routing instructions for up to 120 cars. Its superiority over human operators comes about through the superrapidity with which it makes its calculations, checks car speed, and governs braking operations. The device has also proved to be completely accurate and foolproof in its calculations and operations.

The system was developed by two Union Pacific men, Roland J. Berti, the road's assistant electrical engineer, and David O. Bettison, UP's signal engineer, in conjunction with Perry A. Seay of the Reeves Instrument Corporation. David T. Bonner, Reeves' president, has noted, "The 'Electronic Yardmaster' was developed through Union Pacific's foresight and willingness to experiment with new techniques. This fact, combined with Reeves' experience and technical know-how in automation, produced this newest of robots."

Commenting on this installation, UP President Stoddard said, "It is a great step forward in preventing damage due to human shortcomings in the yards and will aid in maintaining prompt, efficient freight service."

Union Pacific continues its progressive pioneering in other directions too.

In Omaha it has installed the first railroad application of two-way radio communication to expedite freight pickup and delivery service. All of the railroad's pickup and delivery trucks in that city and in the Council Bluffs area immediately across the Missouri River have been equipped with two-way radios, provid-

ing for constant and instant communication between every truck and the dispatcher's office.

With its transmitter located atop Omaha's Blackstone Hotel and its broadcasting equipment in the dispatcher's office in UP's Omaha freight house, the system makes it possible to assign each truck a specific route or district to which to limit its operations. When the dispatcher receives a telephoned request for a pickup from some shipper, he can immediately relay it to the truck serving that area. When the pickup has been accomplished, the truck-driver can so report to the dispatcher, and can receive further instructions directly in the cab of his truck. This has completely eliminated inconveniencing patrons by making it no longer necessary for the driver to ask the shipper's permission to tie up his telephone while the truckman reports to the dispatcher.

Faster and more convenient service has resulted, too, because crosstown travel in heavy city traffic is now almost entirely done away with. UP points out also that in the event of an emergency evacuation, the railroad's two-way truck radio network could be assigned to important tasks in the Omaha and Council Bluffs civil defense program.

Modernization and mechanization of already existing facilities are also an important part of the Union Pacific's forward-looking program.

At Laramie about 100,000 cars a year are iced to provide proper refrigerated shipping conditions for eastbound fruit and vegetable cargo. The icing plant there is owned by Pacific Fruit Express, which is a company jointly owned by the Union Pacific and the Southern Pacific railroads.

In 1955 the company spent $465,000 in a three-month period to make its icing plant more efficient by means of mechanizing its icing platform. The Laramie plant is the largest automatic installation of its kind in the United States.

With its improvements, the new platform now can handle two hundred cars at a time. Three mechanical icing machines are mounted on the platform; each can pour 11,000 pounds of

ice into a refrigerator car in ninety seconds, and each can re-ice the bunkers of a refrigerator car in an average of about forty-five seconds. They are equipped with radio equipment to maintain contact with the foreman's office, and the entire platform has a two-way public address system running its complete length.

When plans for the mechanization of the platform were announced, K. V. Plummer, who was vice-president and general manager of Pacific Fruit Express, had this to say:

"We were fortunate in putting our Laramie ice-manufacturing plant into operation three years ago, as since that time the winters have been so mild it would have been impossible for us to have harvested sufficient natural ice to meet the demand."

So here too is a demonstration of the foresight and sound thinking of another of America's railroad executives. Constant analysis of problems, anticipation of future developments, and a willingness to invest in the products of American scientific research and industrial production are keeping railroads like the Union Pacific up in the forefront of our country's progress. President A. E. Stoddard and Traffic Vice-President W. T. Burns are two of the most outstanding all-around railroaders this county has produced.

CHAPTER XLI

UNION PACIFIC

New Cheyenne Stockyard

Hogs, sheep, and calves are happier walking up ordinary stairs than they are trying to climb the traditional chute filled with cleated ramps.

This fact, learned out of observation and experience, has been used by the Union Pacific Railroad in building and placing into service an ultramodern stockyard and feeding station at Cheyenne, Wyoming, to add to a whole chain of servicing stockyards along the system's entire right of way.

The new Cheyenne yard is divided into two sections: a group of covered stock pens adjacent to the track and ten large open pens located just south of the covered unit. Of fire-resistive construction, the building is 110 feet wide and 400 feet long and includes ten double-deck rail chutes. The chutes are spaced for servicing UP's new-type 40-foot 7-inch stock cars, and the stair-type construction makes it possible to load lower and upper decks of the new cars simultaneously. The arrangement of these chutes not only speeds up the loading and unloading processes but prevents the damage that may occur to livestock when the animals are crowded against the sides of the chutes.

Well-thought-out laws govern the handling of livestock in transit. One of them requires that all such animals be unloaded every twenty-eight hours for purposes of feeding, watering, and rest; special permission may be obtained from the owner to extend this period to thirty-six hours, but not even the owner can grant an extension beyond that time limit.

So the Union Pacific, like other railroads engaged in long-

distance livestock haulage, must provide efficient, up-to-date stopping places at intervals along its right of way. These stockyards must be large enough to accommodate the livestock cargo of the road and capable of feeding and watering them quickly enough to prevent any kind of bottleneck as new loads arrive at the yard.

The new Cheyenne yards were thus planned and built by the UP to upgrade capacity by 20 per cent—either by handling the same amount of animal traffic in one-fifth less time or by servicing 20 per cent more stock in the same amount of time than could be done in the old yards. Capacities had to be worked out in accordance with another legal requirement that cattle and sheep must remain off cars for five hours or more at each interval, while hogs must have at least one and one-half hours off cars for water.

The largest volume handled by the new Cheyenne yards consists of hogs moving westward; from markets in the Missouri River valley they are carried to the West Coast in four days, for slaughter on the fifth morning. An increasing volume of westward-bound cattle is also being moved by the UP, and Cheyenne must service them too, in accordance with the law's requirements and the railroad's schedule for a fourth-evening delivery from Omaha to either the West Coast or the Pacific Northwest area.

There are three narrow pens at each end of the covered portion of the Cheyenne building, plus fifty-one other pens of various sizes. Most pens have individual troughs, but in any event the troughs are so arranged that livestock, no matter where assigned, has access to at least one. Near the track side there are larger pens that are designed to serve hogs, and these are equipped with two troughs, each of which serves two of the big pens.

In the south-central portion of this building the weighing area is located. It consists of two large and two small pens, each with access to a Fairbanks-Morse self-registering stock scale that can weigh an entire carload of livestock at one time; its mammoth platform is 36 feet long and 10 feet wide.

The scale is so situated that stock can be brought to it from any or all of the ten large outside pens on the south side of the building, moved across the platform for weighing, and then either returned to the same pens from which they were brought or sent on through the inside pens to be loaded on stock cars. Stock from any pen can thus be weighed and returned to the same pen or moved to any other pen, an arrangement that both speeds up the weighing operation and protects the stock from damage through overcrowding.

Of unique interest is the nature of the pen building's construction. It is of Stran-Steel Nailable-frame type, with the distinctive feature of the "nailing groove," a design device that is said to provide a holding power comparable to that of more expensive construction methods. This groove exists in all joists and studs and is created by welding two or more specially formed steel parts back to back. The small space between these parts is so designed that when a nail is driven into it, the nail is not only gripped by steel but becomes deformed, to provide an unusually high degree of holding power.

Other materials thus can be attached to the steel framework with the application of nothing more complicated than ordinary hammer and nails. Sheet-metal screws, bolts, nails, or welding methods can be used to assemble the basic framework itself.

Roof, sides, and ends of the steel framework are enclosed with 26-gauge corrugated galvanized sheeting. The floor is of concrete and is elevated about one foot above the level of the car floor, or about two feet nine inches above rail top. Only the inside pens and chutes are of wood, with every other part of the building constructed of steel and concrete, thus assuring a high degree of fire resistance. The roof is supported by Nailable-steel wall studs and by four rows of Stran-Steel columns, which are so spaced as to form two 20-foot bays parallel to the walls with a 30-foot bay in the center.

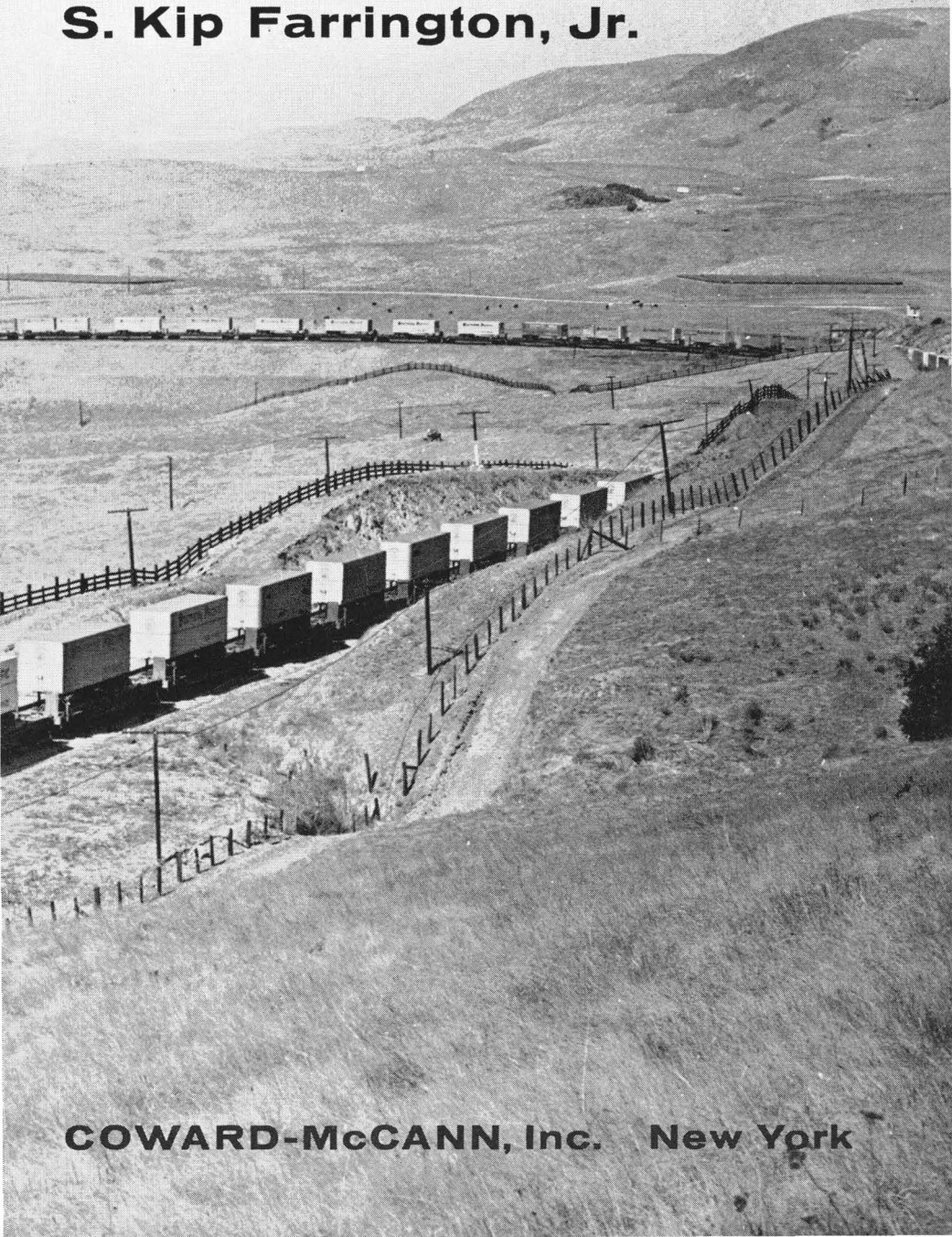
The Union Pacific recognizes the importance of fast, efficient movement of its huge livestock cargo day after day. That is why such new stockyards as this one at Cheyenne have been designed

to provide maximum movement, combined with safety, under conditions that permit the important loads of cattle, sheep, and hogs to dine in grand style as they take their mandatory off-car rest periods.

RAILROADS

OF THE HOUR

S. Kip Farrington, Jr.



COWARD-McCANN, Inc. New York

© 1958 BY S. KIP FARRINGTON, JR.

All rights reserved. This book, or parts thereof, may not be reproduced in any form without permission in writing from the Publisher.

Published simultaneously in the Dominion of Canada by Longmans, Green & Company, Toronto

Second Impression

Library of Congress Catalog Card Number: 56-10140

MANUFACTURED IN THE UNITED STATES OF AMERICA