This edition of THE NOYO CHIEF marks the end of the first century of the commercial operation of Mendocino County's Redwood Forests. It commemorates a century of life for Union Lumber Company's subsidiary, The Mendocino Lumber Company and its predecessor, California Redwood Manufacturing Company, which commenced sawing the huge redwoods on Big River in the spring of 1852.

It is dedicated to all employees, past and present, of the enterprises which during the past 100 years have preceded or been affiliated with Union Lumber Company.

This edition is also for the residents of Fort Bragg and the Mendocino Coast; the thousands of visitors, including many of our customers, who tour our plant every year; and for those who wish to know more of the background of the Union Lumber Company, whose history is synonymous with the development of this portion of Mendocino County.

We hope that you, the residents, will be brought up to date on many facts of interest and that it will help you, the visitors, to recall with pleasant memories, your trip to the Redwoods and the Mendocino Coast.
This Is the Union Lumber Company . . .

Situated on the picturesque Mendocino Coast midway between San Francisco and Eureka, in the City of Fort Bragg, is the Union Lumber Company, the pulse and heartbeat of western Mendocino County. Its vast natural resources, embracing over 150,000 acres of forest land extending from the Navarro River on the south to the South Fork of the Eel River on the north, Hayworth Creek on the east and the ever-present Pacific Ocean on the west, have provided the daily bread and well being of past generations. These resources will also provide for the many generations to come.

Self-reliant to a high degree, with its own railroad, electric plant, repair shops and department store to supply the daily requirements of its giant sawmill, planing mill, woods operations and other departments necessary to the production of quality lumber, the Union Lumber Company stands today as the bulwark of the way of life for nearly 1,000 employees and their families.

Aerial view of the plant and seasoning yards.
The modern plant, spacious offices, miles of well-kept roads, railroads, and sales offices throughout the United States are the result of one man's determination, foresight, and integrity; as well as the men with whom he surrounded himself and those who came after. Similar to the problems confronting a family circle, which at times appear insurmountable but eventually work themselves out, so the problems of a company come and go. If the head of a company steers a true, straight course, the company survives and continues to prosper. If he wavers at any step along the course, the company may fail and another community takes its place with the ghosts of the past. Therefore, the very existence, today, of the Union Lumber Company and the City of Fort Bragg speaks loudly and strongly of the founder of them both, Charles Russell Johnson.

Charles Russell Johnson, to be known by all as “C. R.,” was born at Racine, Wisconsin, on St. Valentine's Day, 1859. His father operated a sawmill at Saugatuck and later at St. Ignace, Michigan. It was here that “C. R.” spent his youth and attended school until an illness at age 14 sent him to San Francisco for recuperation. He soon recovered his health, but remained in San Francisco for a year and one-half. Returning to St. Ignace he worked in his father’s mill and woods. After two years in his father’s employ, young “C. R.” took a job with the Menominee River Lumber Company in Chicago. Here he remained for four years learning lumber uses and marketing methods.

Returns to West Coast

The West Coast had left a lasting impression on the boy, and as he had fully decided that this was to be his future home he returned to San Francisco in 1881. After traveling over a large portion of the State without finding exactly what he wanted, he stopped in to see an old family friend, A. D. Starr, who had founded the Starr Flour Mills at Crockett, California.

Starr had often told “C. R.” about the great redwoods of northern California and agreed to accompany him on a trip to the North Coast. By train, buckboard stage, hired team and wagon they made the arduous trip along the northern Mendocino Coast to Westport. It was on this trip that he made the acquaintance of Calvin Stewart and James Hunter. Stewart and Hunter were operating a sawmill on Mill Creek, a tributary of Ten Mile River. “C. R.” liked the in-
herent honesty and friendliness of these men and saw great possibilities in the future of their enterprise. He then knew this was the country that was to be his future; so, at age 23, he bought into the firm now to be operated as Stewart, Hunter and Johnson.

The youthful energy of young “C. R.” was immediately felt by the new partnership. His mind was always alert to improvement, continuously searching for better ways to do things.

**C. R.’s First Innovations**

Shortly after his arrival at Mill Creek production of the mill was doubled. This was brought about by “C. R.’s” suggestions to purchase several new pieces of equipment and to operate the mill nights as well as days.

 ***NEWPORT CHUTE—Lumber from the Mill Creek Mill was shipped from here.***

Compared to present day logging and sawmill methods, those used in the early days were crude, cumbersome, dangerous, and just plain hard work. Logs were lifted and turned by hand-operated “jackscrews” and were hauled to the rivers by bull teams for floating to the mills. Men stayed in the woods for months on end, as it was easier than traveling the trails and washboard roads. First aid and doctors were not always readily available.

It was in such a background that young “C. R.” furthered his knowledge and experience in the lumber industry. His contemporaries did not fear work, and they knew that in order to receive, first, one must earn. No one was pampered. The type of men who settled the Mendocino Coast believed in the rights of others and the freedoms that were America and they instilled in their sons and daughters these same principles. They were building a future for generations to come by their actions and thinking. At the age of 23, “C. R.”, surrounded by these men of courage, began formulating plans for what was to become the Union Lumber Company of today.

**Mill Site Chosen at Fort Bragg**

The lumber from Mill Creek was hauled by horse and wagon from the mill to Newport, the closest water shipping point. Small lumber schooners would wait for a favorable tide, come in through the unpredictable surf and maneuver under a chute that descended from the bluff above. It often took a week to load one schooner.

***BULL TEAMS—Used to skid logs to the rivers where high water carried them downstream to the mill.***
Newport, in "C. R.'s" mind, was far from an ideal loading point and the Mill Creek site was too small for further expansion of operations, so he set out to find a better location. He had often looked eagerly at the large area of level land comprising the abandoned army post of Fort Bragg. Adjoining this site was an ocean cove called Soldiers Harbor. "C. R." took soundings of Soldiers Harbor and found that it would be suitable for larger ships.

The abandoned army post of Fort Bragg had been the headquarters for the administration of the Indian reservation begun in 1857, which encompassed all of Ten Mile River Township. Lt. H. G. Gibson had been its first commanding officer and had named the fort after his West Point classmate, Captain Braxton Bragg. Captain Bragg later became a General in the Confederate Army. He was never in Fort Bragg.

"C. R.,” realizing the possibility of the harbor for shipping and the vast amount of flat land in the immediate vicinity for a mill and townsite, prevailed upon his father and two other Michigan friends to take stock in what was to be called the Fort Bragg Redwood Company. The Stewart, Hunter
and Johnson property was bought by the new company, as was a large tract of timber land owned by McPherson and Weatherby on Pudding Creek, Noyo River and the site of the present City of Fort Bragg.

A wharf was built first to bring in the needed machinery and equipment. Construction of the new mill proceeded rapidly and at 10 a.m. on the morning of November 16, 1885, operations were under way. This mill produced about 85,000 board feet of lumber per 12-hour shift. It was destroyed by fire in 1888 and rebuilt immediately.

The City of Fort Bragg was laid out by "C. R." and when incorporated in 1889 he became its first mayor.

Many obstacles confronted the infant company: the burning of the mill, perfecting the radically new band saw (a “C. R.” perfection), and the depression of the 90’s; but the company, founded on strong character and bulldog determination, overcame the adversities and emerged stronger because of them.

C. R.’s Handiwork Goes On

After “C. R.’s” death, the Union Lumber Company, although missing his leadership, carried on and expanded the operation that he so solidly founded.

To his son, Otis, fell the task of carrying on the duties as head of the Company. Otis was born in Fort Bragg on the 28th of April, 1887. In 1910 he became a permanent part of the organization. He gained practical experience in the years that followed by working in many of the departments. In 1927 he was made general manager of Mendocino County properties and in 1939 was elected president.

Under his progressive leadership, the Company has been quick to adopt improved methods of manufacture and operation.

Third Generation Now Active in Business

Further continuity of policy derives from members of the third generation presently active in the management. They are Russell Johnson and Peter Lowe, grandsons of C. R. Johnson, and Pierson Plummer, grandson of W. P. Plummer, one of the original incorporators and first general manager.
The Plant . . .

One of the three largest redwood mills in the world, the plant facilities of Union Lumber Company reflect the progressive policy of the management in obtaining the advantages of modern labor-saving equipment. The Company is ever alert to find new means of improving its products, speeding its manufacture and expediting delivery to lumber dealers throughout the country. That this is recognized by others was clearly brought out in 19... when the Union Lumber Company and its employees were presented with the Army-Navy "E" Award for high quality and quantity of production. The Union Lumber Company was the only redwood mill to receive this distinctive award.

Self-Reliant Plant

Because of its location on the west side of the Coast Range, western Mendocino County in days past was very inaccessible. The Mendocino coast has been referred to as the Chile of Mendocino County. The obstacle of slow transportation made it necessary for the Union Lumber Company to provide for its own wants in order to continue functioning. This it did and still does—a consummate example of industrial self-reliance.

Power Plant

The first landmarks noticed by visitors to Fort Bragg are the two smokestacks, ten feet in diameter and nearly two hundred feet high, which provide a natural draft for the “Dutch Ovens” of the Power House. Here is the heart of the plant operation, pumping life-giving electricity to the myriads of motors and lights throughout the plant. Electricity is also sold to the Pacific Gas and Electric Company for use in the Fort Bragg area. Formerly, communities north and south of Fort Bragg were served by Company-generated electricity—and still are in event of an emergency. Over 65,000 kilowatt hours of electricity are produced at the Company Power House every 24 hours. From 90,000 to 100,000 kilowatt hours of electricity can be generated every 24 hours if necessary.
Steam pressure of approximately 175 pounds per square inch is produced in four water-tube boilers, requiring 250,000 gallons of water every 24 hours. To convert this amount of water to steam requires about 275 tons of wood fuel per day.

The fuel is provided by sawdust, planing mill shavings and “hog” fuel. The latter is wood slabs reduced to small chips by a huge grinder descriptively called “The Hog.”

**Electrical Department**

Three electric service shops maintain the transformers, thousands of lights, miles of power and telephone lines, the electrical portion of the Diesel-electric locomotives, the F-M radio system, and the 800 or more motors ranging in size from 1/4 h. p. to 300 h. p. In addition, magnetos, generators, fuse boxes, fire alarm systems, power house switchboard, and many other miscellaneous pieces of electrical equipment are made, repaired and serviced by this department.

**Plumbing Department**

Steam, a by-product of the power house, is harnessed by the Plumbing Department and distributed as heat to the many shops, offices, and Dry Kilns. It is also used as a cleansing agent by the mechanical departments.

The water system for drinking, sanitation, and fire protection, and the many pumps used at the mill pond and power house are serviced by this department.

**Other Departments**

There are many other departments which contribute to the efficient operation of the plant.
The designs and plans for new construction and major repairs are worked out and drawn by the Construction Department. A new roof, paint job, sidewalks, buildings—all these come under the jurisdiction of the Construction Department. From here plans go to the plumbing, sheet metal, machine, blacksmith, and electric shops which make the finished parts to be fitted into the construction of a completed unit.

An integrated Automotive Maintenance Shop, capable of performing any and all repairs to the numerous transportation pieces in daily use by the Company, is another of the many departments giving evidence of the self-sustenance of this plant. The fact that today’s logging and lumber operations are highly mobile is attested to by the varied list of equipment serviced by the Automotive Maintenance Department. This list includes passenger cars, buses, pickups, jeeps, station wagons, fire trucks, water trucks, fuel trucks, lumber carriers, fork lift trucks, flatbed trucks, dump trucks, motor graders, road rollers, truck-tractors, and a tilt-bed semi-trailer.
The Plant Protection Department is on 24-hour duty. The more important functions of this department are: fire protection, guarding against malicious mischief or sabotage, restraining unauthorized people from entering the plant, and conducting tours throughout the Fort Bragg operations.

Sawmill

The original sawmill built in 1885 burned in 1888. The present mill, built in 1888, badly damaged by the earthquake of 1906, has been repaired and renewed through the years so that at present there are only a few timbers remaining that were in the new mill of 1888.

The sawmill was converted to electricity in 1927. Equipment in the sawmill includes two 10-foot band mills, one 8-foot band mill, two 8-inch edgers, one 10-inch edger, a horizontal resaw, one belt-driven trimmer and two chain-driven trimmers. The 10-foot band mills are directly connected to 250 horsepower synchronous electric motors.

The daily sawmill production is approximately 400,000 board feet of rough lumber and is sawn from about 600 logs.

The filing room of the sawmill is located directly above the mill. Each band mill changes saws approximately every four hours.

The mill pond has a capacity of over 2,000,000 board feet of logs. All logs, except “sinkers,” are dumped into the pond directly from huge logging trucks. “Sinker” logs, logs that normally won’t float, are transferred from the trucks by a Whirley Crane to railroad cars and then brought into the mill.

Green Chain

Rough lumber leaves the mill by way of a 600-foot Green Chain, or Sorting Table. The Green Chain conveys lumber from the mill to sorting boxes, the lumber moving in a continuous stream in front of the graders and lumber pullers. This is the first of several grading and sorting operations. Approximately 250 different sorts, depending on grade, thickness, and width and length, are made.

After initial sorting, some grades of rough green lumber
are sent to the Air Yard and others to the Dry Kilns for drying. They are transported by carriers or cranes. The Company operates three 120-foot span bridge cranes. One has a runway of 1,000 feet and the other two use a single runway 1,500 feet long.

Air Yard

The "heavy" stock, that containing the greatest amount of moisture, goes to the Air Yard for seasoning for a period of from eight to twelve months. At the Air Yard, the loads of

Part of the air yard which occupies more than 25 acres of land.
lumber from the Green Chain are restacked into units, with each layer of lumber separated by 1” x 2” stickers set crosswise to provide good circulation for the drying winds and sunshine. The stacks are piled five units high. To protect the lumber from the weather, the top unit is covered with redwood cover boards.

Dry Kilns

“Light” stock goes from the Green Chain directly to the Dry Kilns. Here stickers are used as in the Air Yard.

There are fourteen Dry Kilns. Four are of the Northwest blower type and ten are Union Lumber Company designed. The two newest units were completed in September, 1950. They are double-track kilns of the overhead fan design.

The kilns hold on the average 800,000 board feet and process about 30,000,000 board feet annually. The length of drying time is dependent on the size and type of lumber to be dried and amount of pre-air seasoning given. An average of ten days is required to dry “light” green one-inch redwood stock from the sawmill. The new kilns are heated entirely on surplus exhaust steam from the sawmill.
Resorter

Seasoned lumber from the Air Yard or Dry Kilns is brought to the Resorter. Here it is fed to a chain, similar to the Green Chain, by a Tallman Tilting Hoist. The stickers are removed. The lumber is graded again because of possible changes that sometimes take place during the seasoning process. From the Resorter it goes to the Planing Mill, the Rail Shipping Department or to a storage shed. To protect the rough dry stock from the weather there are three storage sheds with a combined capacity of over two million board feet.

Planing Mill

The Planing Mill, a 200' x 400' building housing the machinery that puts the finish on rough lumber, was completed in 1940 after a near disastrous fire in 1939. Here boards are sized, surfaced, or made into patterns indicated on the customer's order. Over 1,200 items are readily available and others can be made to meet specifications.

There are forty different lumber-working machines in the mill. Saws edge and trim the lumber. Planer type machines using knives as their cutting instrument turn out molding, siding, gutter, and special stock.

Grading lumber on the resorter after seasoning and before further processing.

The grinding room of the planing mill, picturing some of the many knives used in the moulding machines. Patterns for over 1,200 items are stored here.
The newest and major piece of equipment is a two-way thicknessing planer-matcher. It has twelve knives on each of several "cutting heads" and is capable of working 500 lineal feet of lumber per minute. In conjunction with this machine is a new bundle trimmer with ten saws spaced two feet apart. This new machinery, installed in 1951, has increased the mill's capacity. Other Planing Mill equipment includes a timber sizer, three matchers, three resaws, two gang rip saws, two molders, a company-designed and manufactured power driven picket sharpener, five Tallman tilting hoists and two Tallman reloaders.

The lumber is carried to and from the Planing Mill by carriers.

The Planing Mill, like the Sawmill, has its own filing room. A grinding room, where the knives are sharpened and new knives shaped to turn out any pattern ordered, is another department of the mill.

**Shingle Mill**

Redwood shingles at the rate of 35 squares a day are produced in the Company's Shingle Mill. The mill uses salvaged logs from the pond that are not suitable for lumber. Waste from the Shingle Mill is sold as firewood.

The original Shingle Mill, built in 1902, was destroyed by fire in 1950 and a modern, efficient mill was completed in 1951.

**Shipping Department**

The Shipping Department is designed for railroad and highway transportation and is vastly changed from the early days when every board shipped depended on the rise and fall of the tide.

In this department the tree takes leave of its early environment and goes forth as finished lumber to start life anew in the homes, industries, or construction projects of the world.

Every precaution is taken to insure its arrival in perfect condition. Box cars are lined with waterproof building paper to keep moisture, soot and cinders from damaging the quality NOYO product inside. Bulkheads are built inside the cars, if necessary, to keep the lumber from sliding and falling. Lumber on open cars is strapped with steel bands.

Tallymen give the lumber its final check. Any damaged boards are removed by the loaders. The loading itself is a highly technical operation. Sometimes as many as 50 different items are stowed in one car. They must be carefully placed to avoid damage en route.

Most Union Lumber Company shipping is done via the California Western Railroad, which runs between Fort Bragg and Willits, where it connects with the nation-wide system of railroad transportation.
The Woods . . .

Paul Bunyan has cause to worry. His early-day feats of fictional skill are rapidly being approached by his present-day counterpart, mechanized forest harvesting. Where Paul was mainly a logger, today's woodsman is a conservationist. The aim today is forests and lumber products for future generations.

The Union Lumber Company operates, as do other timber operators in the State of California, under the California Forest Practice Act, one of the most progressive forest management acts in the United States. The Act declares the necessity of conducting good forest harvesting practices to promote the maximum sustained productivity of the forest lands of California and sets up certain minimum standards to attain this goal. These standards specify, among other things, the minimum diameters of trees permitted to be cut, the number of seed trees to be left standing per acre, falling and yarding practices for the protection of these seed trees, disposal of slash and dead trees which, if permitted to remain, are a fire hazard; and fire prevention and suppression procedures including the maintenance of fire protection roads. The Union Lumber Company policy in its cutting and logging practices exceeds many of the minimum requirements prescribed by the Act.

Tractors, trucks, mobile loading machines, and chain saws have done much to improve and speed up today's tree harvesting over earlier logging methods of the high line, railroads, stationary loaders, and hand saws.

The timber is harvested by Union Lumber Company crews and by contract harvesters. The Company uses Trakloaders in its loading operations in the Ten Mile Woods, and at Navarro a two-yard shovel, rigged as a crane, is used. Tractors, some equipped with arches and some with bulldozers, yard the logs to the loading landings, where they are loaded on trucks for the final leg of their journey from the stump to the mill pond.

Although located inside the plant, the Cat Shop plays an important part in the Woods Operations. It services and maintains the 40 or more pieces of heavy logging equipment. All major jobs are done in the Shop and a mobile repair unit handles emergency repairs on the job. By two-way radio this unit is in constant touch with the various rigging crews and the Shop.

The logging railroad, originally constructed in 1914, was gradually converted to truck roads. The major conversion came in June and July of 1949 when 22 miles of logging railroad to the Ten Mile Woods was converted in one month's time to a high-speed truck road. Over 100 miles of roads have been built and maintained by the Company's Road Construction crews. This road system not only enables larger loads to be hauled, but also keeps the public highways free of heavy truck traffic. About 40 truckloads a day are required to keep the Fort Bragg Mill operating.

The old-timer would not recognize the woods operations of today. Besides the equipment changes, he would marvel at the two-way radio communications from the plant or camp to woods mobile units. The landscaped area surrounding the
neat painted bunk houses, the equally well kept cookhouse, and sanitation facilities of Union Lumber Company's Camp 2 were unheard of not so many years ago.

The planning of future cutting, road location, and fire protection is done in the Land and Timber department under the direction of the Logging Superintendent.

Fire protection is of utmost importance to the productivity of future crops. The Company does not believe that forest fires are inevitable, but rather that man-caused fires can be eliminated and others can be suppressed before they cause any great damage. Through education of employees and the public in fire prevention, through maintenance of access roads and fire-fighting equipment, and with trained fire crews on duty during the critical fire season, the Company has materially reduced the forest fire hazard.

**C. R. Johnson Tree Farms**

The C. R. Johnson Tree Farms, embracing a total area of 65,331 acres—39,814 acres in the Big River Unit and 25,517 acres in the Noyo Unit—were dedicated on May 19, 1951, with impressive ceremonies at Redwood Lodge on the Noyo River.

Tree Farms, having their beginnings in 1941, are relatively new to the Redwood region. The C. R. Johnson Tree Farms were the first to be certified in Mendocino County. Union Lumber Company, endeavoring for permanence of operation, began in the middle twenties a whole-hearted effort of reforestation by planting trees grown in its own nursery. It was found after a fair trial, that Mother Nature if given a little help, is still the best and most economical provider of new forests.

It has been shown through many years of experimentation, that if Redwood seed trees are left standing, the area seeded by them plus the sprouts from stumps, if given protection from fire and rough logging operations, will reforest an area much more rapidly and effectively than man-planted trees.

That tree farming is worthwhile can best be told by quoting Professor Emanuel Fritz in an article in The Noyo Chief. Professor Fritz states, "On the best soils—river benches and flats—second growth redwood can produce more than 100,000 board feet per acre of lumber in sixty years. This may seem strange when the old growth produced no more in many more years. The explanation is this: Our large old-growth trees have very rough tops, too rough to make merchantable lumber. Therefore, a large part of the old tree must be left in the woods. Second growth, on the other hand, has small branches and much more of the trunk can be made into logs. Furthermore, old-growth logs are often very irregular and scarred and sometimes pitted with a heart rot. These factors make the mill losses rather heavy. Young growth logs are round, smooth and generally free from decay. Old growth also entails more felling breakage, whereas in young growth this loss is negligible." Thus, experience has
once more burst the bubble of an old belief, that redwood requires hundreds of years to reach merchantable size.

Union Lumber Company in its harvesting operations has long subscribed to the basic principles required for eligibility to become a Tree Farmer, which are:

1. To assure the California Redwood Association of willingness to maintain the land designated as a “tree farm” in a condition to produce forest crops under good forest practices.
2. To provide reasonable protection from fire and other damage, including excessive grazing.
3. To harvest the crop of standing timber on the tree farm in a manner which will assure future crops.
4. To furnish information concerning his tree farm when requested to do so by the California Redwood Association. Such information will embrace progress, future plans, improvements, protection, and cutting practices.

**Fuller Utilization of Forest Products**

By fuller utilization of the timber now being harvested, Tree Farm timber can be given additional years to put on growth.

Continuously striving for better use of its forest resources, the Union Lumber Company has sought and found markets for numerous parts of the tree formerly considered worthless. Many low-grade logs, in the past left in the woods, are now shipped to pulp mills and made into paper. Shingles (made entirely from low-grade logs), sawn shakes, fence pickets, fire wood, fuel for the power plant, and railroad car dunnage are other products salvaged from what was formerly considered refuse.

Installation of chipping machinery to produce wood chips in the manufacture of paper, building felts, roofing paper, and linoleums, will make use of more residue from the sawmill.

In addition to fuller utilization of the tree, the Company, through mechanical improvements and devices it has developed and uses, keeps damage to logs and lumber to a minimum.

The perfection of the band saw in the early days by “C. R.” set the stage for conservation practices that followed. The band saw, being thinner, cut a smaller kerf \( \text{i.e., made less sawdust} \) and hence allowed more of the log to go into lumber. The carriage set works and electric dogs were other early conservation devices developed at the plant by Company employees.

The Union Lumber Company was one of the first to use “cats” (tractors) exclusively in the woods. This innovation eliminated destruction to logs and seed trees caused by old-type yarder and high-line logging methods. Eliminating the logging railroad and with it the extra handling of logs from truck to cars did away with much log breakage.

At the pond, the amount of lumber ultimately obtained from the logs has been greatly increased by use of a crane with

**Second growth redwood trees which have sprouted from an old stump. One method of natural reforestation.**
a special boom (to be explained in more detail) and a Whirley crane.

Through a continuous and conscientious effort to manufacture and sell new products developed through research, the Company is utilizing an ever higher percentage of its total forest resources.

**The Product**

Redwood, known for its beauty, lasting qualities, resistance to decay, insects, and rodents, and the ease with which it can be worked, makes up 85 per cent of the Union Lumber Company's output. Douglas Fir accounts for the other 15 per cent.

Known as the hallmark of quality throughout the lumber markets of the country, the stamp NOYO on an order of redwood, identifies it as the product of the Union Lumber Company. "Once a NOYO customer, always a NOYO customer" is the end constantly striven for by management and employees. Because of the careful grade inspections and the employment of modern methods of manufacture, the customer, through the years has known the dependability of the "always up to grade" qualities of NOYO redwood. Grading schools are conducted regularly at the plant. Graders constantly check each other, and each board is inspected several times before it leaves the plant in order to assure that NOYO brand redwood is the quality of the industry.

Some of the major items manufactured, in addition to rough or surfaced boards and dimension, are sidings, rustics, gutters, sills, moldings, floorings, stepping, casings, base boards, ceilings, panelings, battens, pickets, lattice, shingles, shakes, tank stock, timbers, and railroad ties.

**The Sales Force**

Nation-wide sales are handled from the Union Lumber Company general sales offices in San Francisco and branch offices in Los Angeles, Chicago, and New York and by many...
reputable lumber sales representatives throughout the United States.

All members of the sales force have been thoroughly indoctrinated in the manufacturing side of the business at Fort Bragg.

**Inventions and Innovations**

From the day "C. R." and his fellow workers perfected the band saw, many original ideas which contributed toward increased mechanical efficiency have been developed by employees. The policy of the Company is to let the employees retain ownership and profits of the invention. In turn the Company is allowed to use the invention royalty free. Among the patented inventions of employees are:

*Grape Packing Drier and Screening System* for refining grape packing from redwood sawdust developed by H. C. Johnson, former plant superintendent, now deceased. Many carloads of grape packing were shipped before the demand for this product fell off due to refrigeration taking over the job of preserving grapes.

*Markkula Logging Car Chocks*, designed and built by Matt Markkula, now deceased. These are steel disappearing chocks on wooden bunks on logging cars. They were used for many years to hold logs on the cars while they were being transported from the Woods to the Mill pond. They are now being used on the few remaining cars for sinkers transferred from trucks by a Whirley crane.

*Sawmill Carriage Set Works* was invented by Ed Percy, now deceased, while Mr. Percy was working for the Glen Blair Redwood Company, an affiliate of the Union Lumber Company. It was adopted by many of the sawmills along the

Mendocino Coast and was one of the first power set works built to precisely set the thickness of the board or timber to be sawn from a log in the sawmill.
Tank Stave Machine, also invented by Ed Percy. This machine (no longer in use) was for shaping tank staves. The staves could be made to fit accurately together for barrel or churn-shaped tanks. The barrel-shaped staves were tapered and beveled accurately by bending them over a pre-determined form on a special carriage.

Electric Dog for Sawmill Carriage, developed by Ed Percy, Jack Swinhart, and J. J. Tallman. It won the National Lumber Manufacturers Association $1,000 prize award in 1926 for being the most helpful sawmill invention of the year in the conservation of timber. The feature that won this prize was the electric dog’s ability to hold the log tightly to the carriage without marring the back face of the board, as was done with the common boss dog type in use at that time: hence the saving of timber.

Tiltable Lumber Hoist, conceived and designed by J. J.
Tallman. This device raises a unit load of lumber from the floor and positions it for easy feeding to the Planing Mill Machines or to grading tables. There are over 200 in use in the United States and some in Canada, Mexico, and the Hawaiian Islands.

Lumber Reloader, the counterpart of the Tallman hoist and developed by him. It takes lumber from the end of a transfer on grading table after it has been surfaced or resawn and loads it into a unit package for shipping.

Picket Sharpener. When a market was developed for redwood pickets with a gothic point, it became apparent that a faster way of pointing was needed. J. J. Tallman and his staff drew the plans for the power-driven Picket Sharpener and it was produced in the Company’s Machine Shop.

Log Storage. Log Storage for winter use with skylines and high poles and their attendant hazards to safety and breakage to logs has been greatly improved by a Union Lumber Company innovation. A 30-ton capacity crawler crane equipped with a special boom and power-operated tongs is used for handling logs. This crane provides better control of the log at all times. It has broken all records by storing over 24,000 logs in a season, which is twice the capacity of the old skyline system. In addition it provides complete safety to the operator and his assistant and eliminates log breakage. It is now possible to put into the pond 350 logs in an eight-hour shift.

Dry Kilns. Ten of the fourteen kilns have been designed by Union Lumber Company personnel. A unique feature of these kilns is that the side walls and roof are constructed of laminated 2" x 8" common redwood. This type of construction is economical, long-lasting, provides a high degree of insulation, and is very fire resistant.

Another feature is the individual motors located on the roof which drive each fan.

The three important factors governing drying con-
WHIRLEY CRANE—This crane is used to unload sinker logs for the mill and load pulp logs for shipping.

PLANT-WOODS SAFETY AWARD.

CYCLOPS BRIDGE CRANE—Crane No. 2 in foreground, No. 3 in background on 1,500-foot runway. Crew in foreground is preparing a kiln charge for the dry kilns.

ditions—heat, humidity, and circulation of air—are accurately controlled by automatic equipment. The kiln operator has but to determine the relationship of these conditions which are needed to dry a particular type and size lumber, then set the controls which automatically maintain these conditions.

By using welded one-piece steel bunks with trucks, manual handling in setting up kiln loads is eliminated. The load is placed on the bunks by a crane and rolled into the kilns. After unloading, another crane places the empty bunks on a return track to the green end where they are again put in place by crane and reloaded with lumber for another trip through the kilns.

Safety

The Union Lumber Company is deeply interested in Accident Prevention and its President has established the C. R. Johnson Safety Trophy. This trophy was established by Otis R. Johnson and first offered for competition in 1941 to the Redwood area operation with the lowest accident record. As a result, member companies in the competition continue to improve their safety records. The Union Lumber Company won the trophy in 1950.

There is also an intra-division award called the Plant-Woods Safety Trophy. It is given each month to the plant or woods division with the lowest accident rate—and is permanently awarded at the end of the year to the division with the best twelve-month score.
In addition, there are individual “2000 Hour Club” safety awards. Membership cards are given to the employees who complete 2,000 hours of “front-line production” without a disabling injury. A 2000 hour club medallion on a key chain is given at the same time. The Safety Club offers higher awards as well.

Through continued employee cooperation the Union Lumber Company is making its operations a safe place to work, and proving that accidents are not a necessary part of production.

The Union Lumber Company Department Store

A true department store in every sense of the word, the Union Lumber Company Department Store has served the community of Fort Bragg and its environs since 1886. Here, under one roof is sold all of the necessities required to properly house, clothe, and feed the modern family.
The present building, indeed a show place with its mellowed, natural redwood interior, causes the stranger to pause as he enters, for here is a place of business unhurried by present-day living. The ageless redwood panels and trim temper the very spirit of everyday haste.

**Mendocino County Retail Lumber Yard**

Operating under its own corporate charter, the Mendocino County Retail Lumber Company is the retail outlet for NOYO brand redwood on the Mendocino Coast. A customer of the “Retail Yard” is in a position of envy in the eyes of “back yard carpenters” in other localities because his selection of items is limited only by the output of Union Lumber Company’s plant. A buyer may take his lumber with him or have it delivered.

**Guest House**

Standing on the site of the hospital building of the old fort is the Company-operated Guest House. Built entirely of redwood in 1892, it is a fine example of the architecture, millwork, and construction of that period. The Guest House has limited facilities for the convenience of guests and customers of the Union Lumber Company.

**The California Western Railroad**

There are few things that excite the imagination as does a railroad and the California Western is no exception. From its humble beginning as a logging railroad, it has grown to its present stature, taking its rightful place in the family of railways that cover the Continent.

The infant Fort Bragg Redwood Company, knowing a railroad to be the least expensive means of bringing logs to the mill, laid the first track in 1885. It was pushed 6.6 miles...
along the banks of Pudding Creek, reaching Glen Blair in 1887.

With the founding of the Union Lumber Company in 1891, the railroad was purchased from the Fort Bragg Redwood Company. As timber on Pudding Creek was being logged off rapidly the Company, with vast holdings on the Noyo River, decided the road must be extended. Tunnel No. 1 was built and in 1905 Alpine was reached, a distance of 18 miles from Fort Bragg.

On June 30, 1905, the California Western Railroad and Navigation Company was formed. The next day, July 1, this new corporation acquired all the property of the railroad, including terminal and wharf, from the Union Lumber Company.

**Railroad Reaches National Importance**

Realizing that water shipment was adequate for the West Coast trade and transporting rough lumber, but that finished lumber could be better transported by rail, it was decided to extend the railroad to Willits. The logging railroad had stretched as far east as Irmulco. Willits and connection with the Northwestern Pacific Railroad were reached in 1911. However, due to a severe winter, regular schedules were not begun until 1912.

Prior to this nation-wide tie, all the rolling stock and tracks were brought to Fort Bragg by ship. All of the road construction was accomplished by hand labor, mules, horses, and Fresno dump scrapers.

On January 1, 1948, knowing that water shipment from Fort Bragg was definitely a thing of the past, the California Western Railroad and Navigation Company shortened its name to California Western Railroad.

The present railroad is one of the most scenic in the West. The many twists and turns along its 40-mile length through the redwoods has earned for it the distinction of being one of the crookedest railroads in the world. Between Shake City
and Summit, an air-line distance of only 1½ miles, the line loops 8½ miles in bow-knot turns and in places curves almost directly above the track below.

The road was originally built with 115 bridges and trestles and two tunnels. Through relocation and realignment of its tracks, the bridges and trestles have been reduced to 37.

**THE "SKUNK" ON THE HILL**—This is where 8½ miles are traveled to go an air-line distance of 1½ miles.

The tracks cross and recross the Noyo River and its tributaries, winding in and out among the redwoods, and reveal to the passenger a scene of beauty long to be remembered. Many summer camps are maintained along the right of way and are serviced by the three "Skunks," names of endearment given to the unique little motor coaches that ply the line carrying passengers and freight.

The steam locomotives that hauled the freight trains over the hill were replaced in September, 1949, by two Baldwin Diesel Electrics. They greatly increased the operating efficiency and lowered the operating and maintenance costs of the bulkier, but more romantic iron horses.

Among the terminal facilities in Fort Bragg are the station, offices, roundhouse, car shop, Railway Express Agency and freight office and road repair and construction shops.

**City of Fort Bragg**

The City of Fort Bragg, although dependent on the Union Lumber Company for the largest portion of its liveli-
hood, is not a “company town.” Its many business houses and civic activities are independently owned and conducted. “C. R.” believed in free enterprise and had no desire to dominate the business life of the town. Interest in its welfare and development, however, was ever close to his heart. During the earthquake of 1906 and its attendant fires, his own plant in danger, the city water pipes broken, he had all available hose connected to the pumps of the steamer National City and used the water to put out the fires “up town.” In spite of this, many homes and business houses were lost. From the Company Store, “C. R.” gave out food, clothing, and blankets as long as the stock lasted. Lumber for rebuilding was supplied—to be paid for “when able.”

Fort Bragg is the largest coastal city between San Francisco and Eureka. It has a population of over 4,500, and its trading area includes more than 15,000.

The governing body is the city council, with the mayor elected from its ranks by the councilmen. An alert police force has kept local crime in the “mischief” stage. The well-equipped and trained volunteer fire department is responsible for a very favorable fire insurance rate.

A recreation department provides for the welfare of the young people and grown-ups with a city-operated playground, swimming pool and community center. The Scouting program also plays an important part in the lives of the young people.

The school system offering education from kindergarten through high school is an up-to-date plant and is constantly expanding to care for the increasing population.

The city is served by two bus lines, Mendocino Transit Company and Pacific Greyhound Lines; California Western Railroad, and Southwest Airways Company.
Twelve churches provide the spiritual guidance of the community.

Medical care is provided by nearly a dozen doctors and two hospitals. The oldest, The Redwood Coast Hospital, has appeared on the approved list of the American College of Surgeons since 1927.

The Lions, Rotarians, American Legion, Veterans of Foreign Wars, and many lodges and fraternal organizations contribute to the civic life of Fort Bragg. Two newspapers and a radio station keep the people informed on local affairs.

A Little Theater Group, a motion picture theater, the Fort Bragg Loggers baseball team, basketball and bowling leagues, and the excellent hunting and fishing areas supply other outlets for recreation.

In addition to lumbering, fishing, farming, cattle raising, poultry, and tourist trade, attracted by the scenic grandeur of the Coast and its attendant hunting and fishing, give support to the economic life of Fort Bragg.

The Fort Bragg Chamber of Commerce plays an important role in bringing Fort Bragg and the adjacent Coast area to the attention of the outside world. Through its efforts the area is becoming well known for its outstanding recreational facilities.

The colorful Paul Bunyan celebration, an annual affair during the Labor Day holidays, is enjoyed by natives and visitors alike. Loggers demonstrate feats of logging skill. Street dances, kangaroo courts, water fights, beard-growing, old-time garb for women, and jeans and plaid shirts for men add to the gaiety of the occasion.

FISHING FLEET IN NOYO HARBOR. (Photo by Easter)
The Future . . .

Patrick Henry once said, "I know of no way of judging the future but by the past"; and Marcus Aurelius said, "That which comes after conforms to that which has gone before." The wisdom expressed, centuries apart, by these learned men has not changed.

That the future of the Union Lumber Company is one of promise was predetermined by the solid building of its founders and the calculated planning of management through the years to pre-adapt its methods to ever-changing business conditions.

With over 50,000 acres of old growth timber remaining and 100,000 acres of well-established second growth of all ages up to 100 years reaching harvesting age on some of the fastest timber-growing country in the nation; with the physical assets of the plant, the trained personnel of the woods, plant and sales force; with the necessity for wood products in the building of the United States and the world; and with the vast research in new wood utilization available to the Company through the Forest Utilization Section of the California Forest and Range Experimental Station at Berkeley, the Forest Products Laboratory of the United States Forest Service at Madison, Wisconsin, the Research Committee of the California Redwood Association, and the Company's own Research Department, the future of the Union Lumber Company is not a matter of conjecture, but a carefully planned certainty.