

THE FAMILY TREE

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Western Pines Win New Recognition In Grade Specifications

Lumber promotion in the western pine industry during the past year attained, largely through the efforts of the promotion bureau of the Western Pine association, a new recognition of the values of genuine white pine, according to a report of the activities which has reached this company.

Government purchasing agents in the war and navy departments have recognized the principle that for most nearly comparable quality and value of commons, the western pines, so far as grade names are concerned, should be specified two grades lower than west coast woods and one grade lower than southern pines.

"After years of persistent effort," says the report which was prepared by L. Cary, "your promotion department (of the Western Pine association) pleased to report this result as an outstanding accomplishment during 1940 by its field personnel."

Mr. Leuschel, assistant general manager of the company, has been a member of that committee for several years, and as such has been very active in the formulation of promotion policies and aims.

The report continues:

"Admission of No. 3 boards, for example, in specifications which include No. 1 west coast woods and No. 2 southern pines, has not come easily or automatically. Their equivalent value, though nothing new in private trade, has not been so well known or accepted in government circles. Specifications which, heretofore, have failed to take this fact into consideration necessarily have placed manufacturers in the western pine region under a severe and unreasonable handicap on government business.

"Experiences of this sort are familiar to most members. However, during

Water-powered Sawmills of 100 Years Ago Described by Lumberman In Pennsylvania

National Defense

Here is an editorial that speaks for itself. It is a copy of a notice posted in the Clearwater planing mill and signed by D. S. Troy, C. J. Cummerford and C. Wilcox:

"We were rolling along gathering momentum when our government decided that National Defense called for more and more effort—more and more production.

Your response for May was excellent.

(a) Every surfacer except No. 14 made substantial gains putting their average highest since April 1940 B. D. S. (before double shift).

(b) Every rerun machine increased their tempo to a point where their combined average was the highest since January 1940 B. D. S. (before double shift).

(c) The night shift had the highest average of any night shift we ever had.

Congratulations! Let's keep her rolling."

Our effort in production for defense is important. I hope all departments throughout all our operations will deserve the sort of recognition earned by the crew in the Clearwater planing mill.

C. L. BILLINGS,
General Manager.

1940, with large lumber orders imminent for national defense, your promotion staff made a special effort to secure acceptance of this basis of comparison. Through our Washington representative, an agreement was reached with other interested regional organizations. The National Lumber Manufacturers association cooperated in securing its acceptance by government officials. This action resulted in the preparation, by the office of the Quartermaster General, War Department, and Bureau of Yards and Docks, Navy Department, of basic specifications for temporary housing which include the desired grade comparisons. The specifications, for the most part, have been used in the purchase of millions of feet of

(Continued on page two)

Meager as are the accounts of the earliest sawmills in this part of the country, a description of water powered sawmills of 100 to 125 years ago finds apt readers among those who have delved into the past.

It is known that the first sawmill in Idaho, built at the Lapwai Indian mission 100 years ago, was a water-powered mill, but little else is known about it. The saw, it was revealed in letters of Dr. Henry Harmon Spalding, the builder, came from another mill operated as early as 1827 at Fort Vancouver.

To R. D. Tomkin, wood department manager of the West Virginia Pulp & Paper company, of Tyronne, Penn., goes the credit for the following description of one of the historic mills of the industry. His article, taken from Timber Topics, the Allis-Chalmers house organ, follows:

Industry changes day after day and year after year, children are born, old folks die, but few stop to compare the changes which occur in the different lines of industry during their natural lifetime.

The Water Mill

Central Pennsylvania offers to the roving motorist a change of scenery of natural beauty, together with the changes of industry, if they will turn off Route No. 45 at Millheim, driving to Coburn, and there turn up Penn's Creek where nature has created a valley of beauty beyond words to describe, and sitting in this little valley is an old time sawmill, erected by the Krider family about 125 years ago. This mill is built on Penn's Creek which derives a large part of the flow from the drainage of Penn's Cave in Center County, Pa. The mill was originally built as an up and down mill and the power was furnished by a pair of rose wheels fastened to a wooden shaft. These wheels were named from the resemblance to the petals of a rose, and the water to furnish the power was con-

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THE FAMILY TREE



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Steve Summers Clearwater
Mable Kelley Potlatch
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Chet Yangel Bovill

"He has the right criticize who has a heart to help"

Down the Editor's Alley

Do you have a hobby? If so, what is it? The editor of *The Family Tree* would like to know. In fact it would be interesting just to know for instance how many of our employees do have hobbies and how many different kinds of hobbies there are. It would make an interesting story. For instance, Mr. Billings collects stamps. Little Joan Bowling collects the whole envelope, stamp and all, of the many letters her father has received from foreign countries. Carl Markowski likes to carve white pine and build walking horses. Burt Curtis, CTPA fire warden, has started a collection of old compasses and J. J. O'Connell has a museum of odd things of white pine and also of the many different souvenirs the company has made for conventions and meetings of various kinds.

What's your hobby? Write in and tell us about it and maybe we can have a story with pictures in *The Family Tree*.

Al Jensen's crop of alfalfa, planted first three summers ago, on grounds of the Clearwater plant, is beginning to look like another bumper crop. Four cuttings were taken from the field last year.

Idaho Forest Products Reach Into 45 States With Increased Demand In 25 During Last Year

Idaho forest products, largely represented by genuine white pine, reached into all but three states of the union in 1940. This is indicated by the recent report of shipments from mills of the area by the Western Pine association.

Arizona, Georgia and South Carolina were the states that do not appear on the list as having received shipments in any quantity from Idaho during the last year.

Of the 48 states and the District of Columbia, 17 showed a slightly lower percentage of shipments received in 1940 than in 1939, while 25 states and the District of Columbia showed considerable gains over the previous year. Florida and Tennessee almost doubled their receipts (carloads) during 1940 over 1939.

Following is the table showing shipments from Idaho in millions of feet and the percentage of the total of all western pine shipments reported to the Western Pine Association:

| Destination State | From Idaho M. Ft. | % | | |
|-------------------|-------------------|-------|----------------|-----------------|
| Alabama | 108 | .02 | Nevada | 119 .02 |
| Arizona | | | New Hampshire | 421 .06 |
| Arkansas | 23 | | New Jersey | 25,411 3.87 |
| California | 1,055 | .16 | New Mexico | 55 .01 |
| Colorado | 9,859 | 1.50 | New York | 46,925 7.15 |
| Connecticut | 9,299 | 1.42 | North Carolina | 126 .02 |
| Delaware | 860 | .13 | South Carolina | |
| Dist. of Col. | 2,603 | .40 | North Dakota | 8,622 1.31 |
| Florida | 101 | .02 | South Dakota | 9,685 1.48 |
| Georgia | | | Ohio | 36,514 5.57 |
| Idaho | 114,267 | 17.42 | Oklahoma | 2,069 .32 |
| Illinois | 39,910 | 6.08 | Oregon | 694 .11 |
| Indiana | 10,961 | 1.67 | Pennsylvania | 52,344 7.98 |
| Iowa | 40,540 | 6.18 | Rhode Island | 1,338 .20 |
| Kansas | 5,843 | .89 | Texas | 809 .12 |
| Kentucky | 387 | .06 | Tennessee | 374 .06 |
| Louisiana | 24 | | Utah | 6,168 .94 |
| Maine | 623 | .09 | Virginia | 990 .15 |
| Maryland | 3,334 | .51 | Vermont | 726 .11 |
| Massachusetts | 12,333 | 1.88 | Washington | 74,844 11.41 |
| Michigan | 49,936 | 1.61 | West Virginia | 4,457 .68 |
| Minnesota | 36,295 | 5.53 | Wisconsin | 26,862 4.09 |
| Mississippi | 315 | .05 | Wyoming | 3,711 .57 |
| Missouri | 5,104 | .78 | Canada | 113 .02 |
| Montana | 2,337 | .36 | Export | 630 .10 |
| Nebraska | 5,866 | .89 | Total | 655,990 100.00% |

Western Pine Grades

(Continued from page one)

lumber for troop housing facilities.

"This grade set-up more recently has been extended to defense housing work under the Public Building Administration and is used as a guide by the army engineers in specifications for air field housing. Moreover, temporary approval was given by the Navy Department's Bureau of Ships in the specifications for its regular purchases a few months ago. We are hopeful that this fairer basis of specifying common grades of different woods may be extended ultimately to all depart-

"The only way to increase our national income is to so utilize our national resources that we produce more goods."—Prof. Howard T. Lewis, educator.

Several relics of the early Indian days and several tools said to have been used in connection with the building of the first sawmill and its mill ditch at Lapwai, have been removed from the state and are now on display in a museum at Grand Coulee where Mr. and Mrs. Joe Evans have a concession. They are scheduled to remain there for at least three months. Return to Idaho, however, is indefinite.

Forty-Eight Grads At Potlatch High Receive Diplomas

Forty-eight young people of Potlatch, finishing their high school days in the midst of a new day of wonders and new world conditions, heard Eric Johnston, director of the United States chamber of commerce, tell them they will fill their places readily enough, but that it will take work to do it.

In commencement exercises held at Potlatch, the following young people received diplomas at the hands of George P. Anderson, clerk of the school board:

Marion G. Anderson, Rosemond Bidlake, Helen Irene Boyer, Dorothy M. Coffman, Margaret Elaine Gage, Bernadine L. Gross, Almira Charlotte Mantz, Mary Dorothy Packard, Margaret Runberg, Opal Elaine Salisbury, Elizabeth Jane Strong, Leatha K. Swofford, Orvetta L. Tribble, Josephine L. Wright, Kenneth H. Butterfield, Jack Gordon Cann, Raymond Hansen, Joe L. Jones, James P. Mitchell (class treasurer), Fred Petragallo, Herman A. Schott, Max L. Stewart, Lyle L. Sparber, John Gordon Sundstrom.

Barabara Marie Andres, Rosalie B. Boller, Dorothy Susan Buck, Claudine B. Davis, Elaine Gambetty, Margaret L. Hessel, Mary Dorothy Newton, Zoe Jacquelyn Poston, Rayola Ruth Riley, Sudrey June Stewart, Joyce A. Sundstrom, Eunice M. Thompson, Louise E. White (secretary), McDouglass Benson (vice-president), Louis E. Chappell, Earle W. Denison, Jr., Neal A. Humiston, Irwin Minden, Albert Hiram Moody, John A. Runberg, David H. Smith (president), Orville Strom, Ralph Stalsberg, Loren E. Weber.

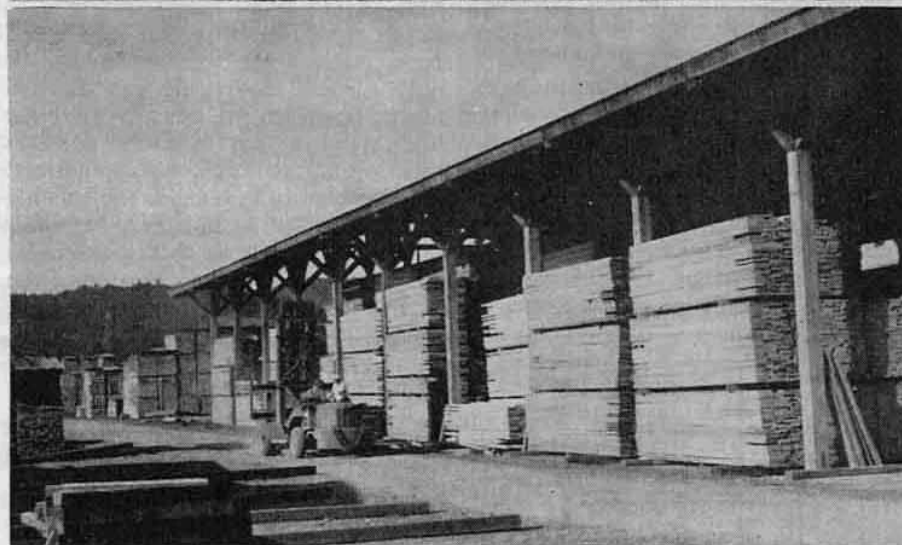
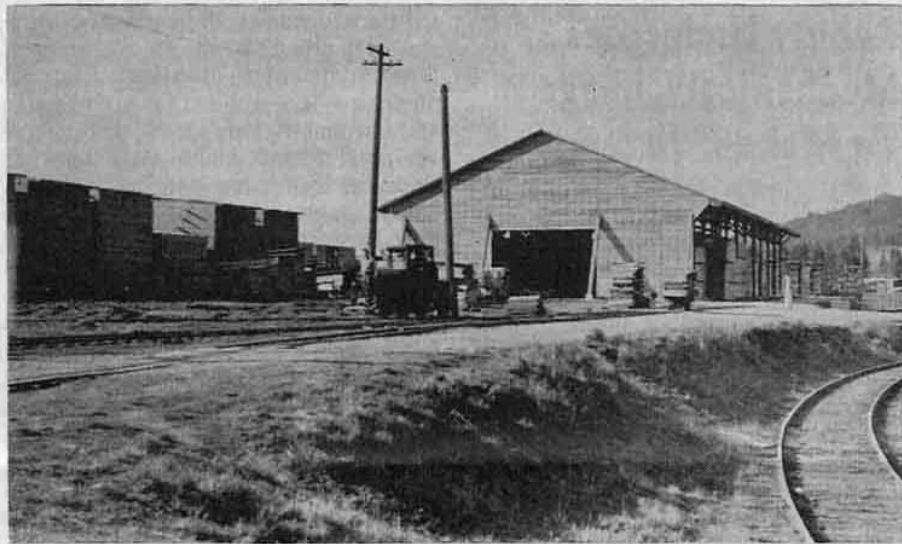
Class motto of the group is "Exist, Exert, Excel." Class colors are purple and gold and class flowers the daffodil and lilac.

Opal Salisbury was class salutatorian and Charlotte Mantz was class valedictorian.

Presentation of awards was made by J. C. Eddy, superintendent, and the following awards were made:

The Balfour award, based on scholarship, loyalty and achievement, went to Louise White.

Rutledge Unit's New Yard Dry Shed



Constructed during the past few months, the above are two views of the new rough dry storage shed at the Rutledge plant in Coeur d'Alene, where approximately 2,000,000 feet of selects may be stored for protection against the elements. The lumber is piled in units with a lift truck and transferred from the storage shed to the planer when it is needed to fill out shipping orders.

The American Legion awards, based on leadership, citizenship, loyalty, scholarship and reliability, went to John Runberg and Rayola Riley.

The Schumann award, based strictly on scholarship (the student must have had four years of science) went to John Runberg. His scholastic average for the four years was 92.5 per cent.

The Sears and Roebuck scholarship in agriculture, an award of \$100, went to Kenneth Butterfield.

Both John Runberg and Kenneth Butterfield plan to attend the University of Idaho.

Programs of both the baccalaureate and commencement were as follows:

Baccalaureate May 18

Processional

Invocation, Mr. Ivan Vallem, student pastor, Lutheran church.

"Jesu, Joy of Man's Desiring"....Bach
Potlatch Presbyterian church choir.

Address "Yardsticks"
Reverend Donald B. Caughey, D.B.,
B.A., Presbyterian church, Potlatch.

Benediction Reverend Caughey

Recessional

Mrs. G. P. Anderson, choir director;
Mrs. J. J. O'Connell, Mrs. W. R.
Jacobs, pianists.

(Continued on page five)

DOUBLE END TRIM SAW IMPROVED IN STREAMLINED POTLATCH

Rebutt Undergoes Mechanical Change To Make Efficiency

By BOB OLIN

As will be recalled from previous articles, one phase of the "streamlining of the Potlatch planing mill" was the change from buggies to carriers for dock transportation of lumber. This immediately affected the operation of the double end trim saw, commonly known as the "rebutt."

On the old plan, one carrier would have to spend his entire time taking loads into and away from the rebutt, and still might result in considerable amount of lost time for this machine. The plan of a double shift operation for the planer made the old rebutt operation more difficult. It would have been expensive and inefficient to carry two full shifts on the rebutt, for, normally there would not be sufficient lumber to keep these two large crews busy. Thus, a series of investigations and some design work brought about an entirely new method of handling the lumber going into the rebutt.

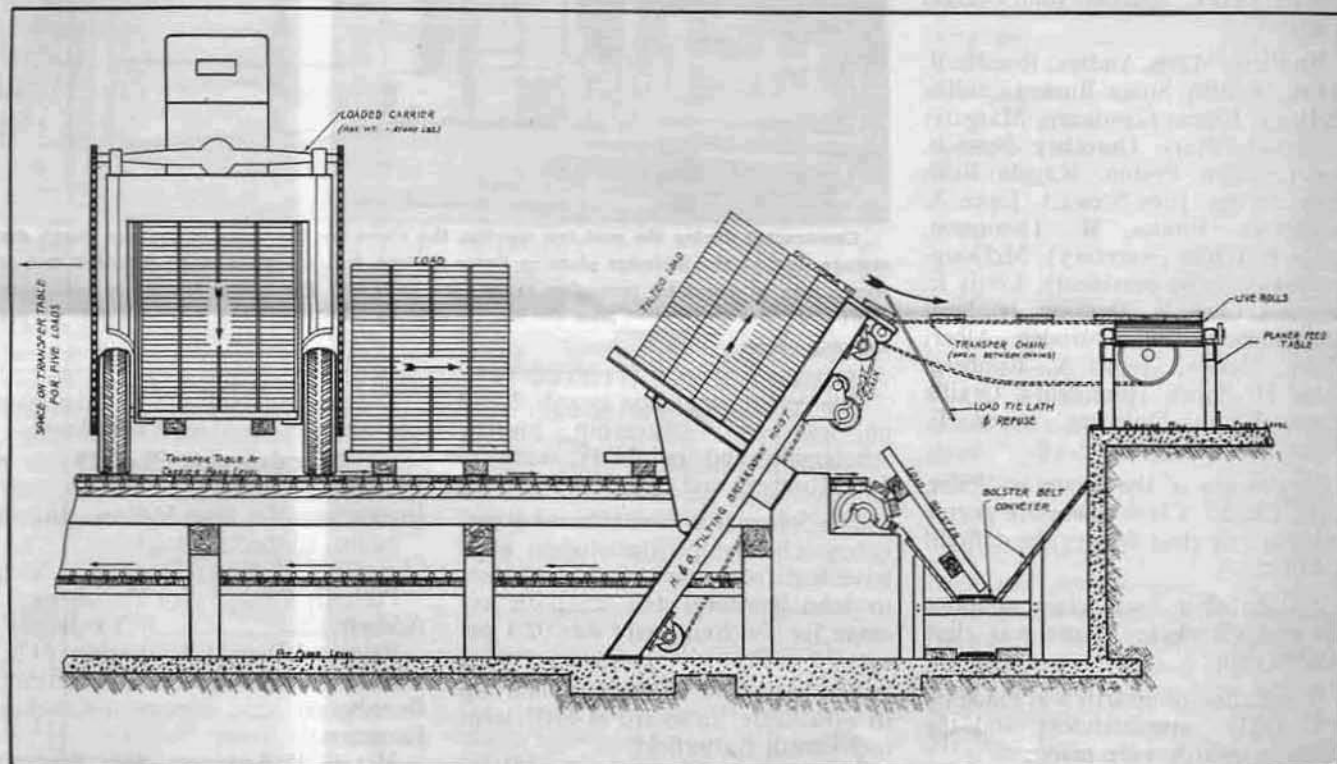
First, to relieve the carriers of constant attendance at the rebutt, powered floor chains were installed. Each set of chains—one set on incoming loads and one on outgoing loads—had a storage space for six loads, each conveyor chain being over one hundred feet long. The loads were stored end to end. This gave the carriers sufficient time to carry out all of their normal duties between the rebutt service periods. The incoming load storage chain was driven at a relatively high speed, so that a 16-foot load could be moved into position at the rebutt in about 12 seconds.

A tilting hoist was set in front of the rebutt so that the load moved in by the floor chain could be quickly tilted and hoisted into the pay-off position. A two-speed motor was used to power the hoist, with the slow speed being used on the hoisting motion for only a slight movement was required at one time. On the down motion, the high speed section of the motor was used so that the hoist could be returned at a speed twice as great as the hoisting speed. The tilting hoist was set on a rather steep angle so that each course of boards would pay off the top of the load without any aid from the operator.

Boards paying off the hoist are caught and carried to the loading pocket of the rebutt by several narrow rubber transfer belts. These corrugated belts travel quite rapidly—about 150 feet per minute—and are driven by an individual motor. The one man who operates and feeds the boards into the rebutt has control of these transfer belts with a convenient floor button. He moves the boards forward from the hoist on the belts, which, in turn, slide boards into the pocket without the operator handling the boards with his hands. If the boards are coming straight, in line, and only one course deep on the belts, they then slide into the pocket exactly in position without the operator touching them. However, if the boards pay off a little crooked, or two boards deep, then the operator guides them into the pocket properly with his hands. Above this work, the operator controls the operation of the rebutt in the normal manner.

Buttons Help Operator

This all means that the one operator, that is required on the incoming side of the rebutt, simply operates the various buttons that control the hoist, belts, (Continued on page five)



This line drawing shows how the load is brought in to the power chain conveyor on the floor of the mill at Potlatch, where the lumber is dropped and at the will of the rebutt operator, picked up and delivered to the rebutt machine tilting hoist. The chain has room for six loads, thus relieving the straddle carrier for other duties.

Rebutt Improved

(Continued from page four)

tt, floor chains and live rolls. He ds at the pocket of the rebutt, hning carefully—the only physical t being required is when the ds tangle.

of course, you must remember that boards actually travel through the tt at the rate of about two boards second, so this operator is well ed, and very skillful in maneuver- the boards into the pocket rapidly effortlessly.

wo off-bearers take the boards from rebutt and build the load on bol- resting on floor chains in the con- tional manner.

To develop this three-man rebutt, it been necessary to build many in- esting "gadgets" to aid the operator. se rather minor items are very im- tant, for the entire production of machine is dependent upon the man- ing the machine. One item of est is the bolster transfer convey- r. Loads, coming into the machine on floor chains, rest on carrier bolsters "bunks." Before the load can pass to the arms of the tilting hoist, the d must be taken from the bolsters d over the hoist arms with powered rolls. As the load weight goes on e live rolls, the bolster drops over end of the floor chain, onto a cross t below, that carries the bolster idly to the offbearers' side of the

machine. The bolsters are thus quick- ly placed on the floor chain by the off- bearers by the time that the first boards of the load come through the machine. Another item is the control of the pocket width, to accommodate the various board widths.

Each of the offbearers has a hand wheel that adjusts the pocket to the desired width, thus relieving the operator of another duty to perform between loads.

Production On Increase

The ultimate capacity of this machine is not known, for, during the past few months that this new plan has been in operation, the production has steadily increased. The average daily eight-hour production is around 125,000 board feet, which is a 50 per cent increase over the initial averages. The peak production of a single shift has been 155,000 board feet, and this was done in less than eight hours of working time. The type of orders to be filled affect the rebutt production greatly, for many loads are quite small, and a good portion of the time is spent in setting up for all the various items having different widths, lengths and thicknesses.

The production rate of this new plan of the rebutt operation fits quite well with the normal two-shift operation of the planer.

Any time that orders are such that the one shift cannot handle the full rebutt production required, then a sec-

ond three-man spike crew can be picked up to make up the difference on the night shift.

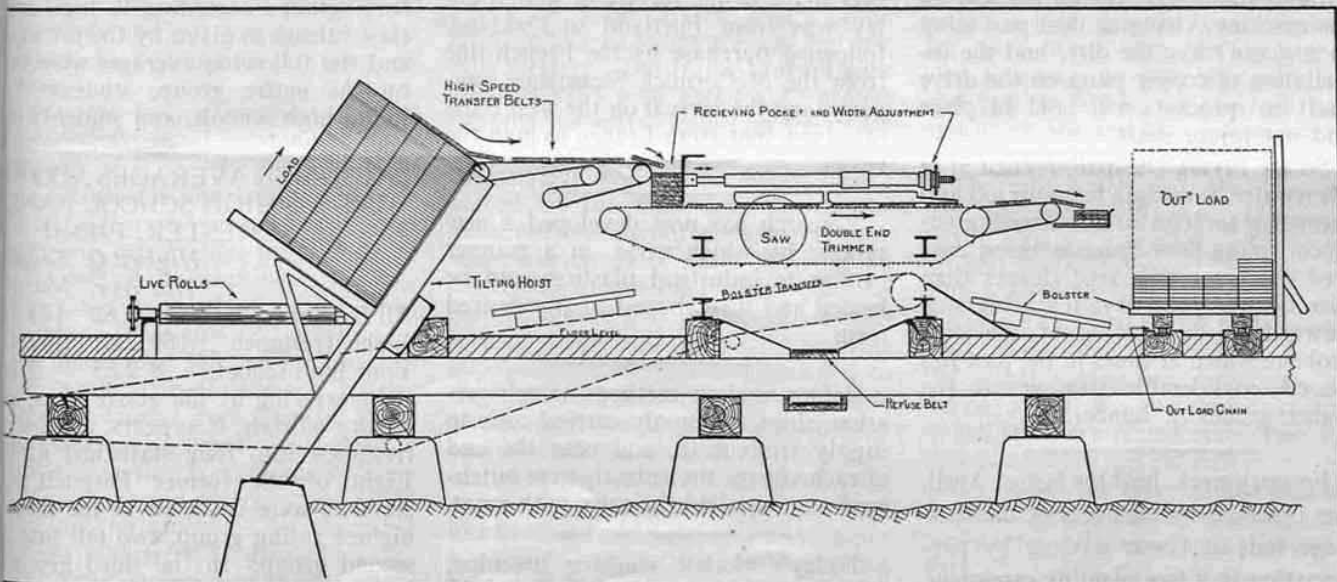
Thus, the rebutt operation has been re-designed to fit the new streamlined shipping departments at Potlatch.

Potlatch Graduates

(Continued from page three)

Commencement May 22

- Processional, "Glory of America"
- Harris
- Invocation Reverend Caughey
- Salutatorian "Hilltops"
- Opal Salisbury
- Valedictorian "Ideals"
- Charlotte Mantz
- "In a Monastery Garden".....
- Characteristic
- "Intermezzo' Albert W. Ketelbey
- Address, "Where Is the Garden of Eden?" Eric Johnston, president, Columbia Electric and Manufacturing Company, Spokane, Washington.
- Presentation Class of 1941..... J. C. Eddy
- Superintendent of Schools
- Presentation of diplomas
- G. P. Anderson
- Clerk, Board of Education
- Presentation of awards J. C. Eddy
- G. V. Schurmann Scientific Award
- American Legion Auxiliary Award
- Benediction Mr. Ivan Vallem
- Recessional, "War March of the Priests" (Athalia) Mendelssohn
- Potlatch High School Band
- Mr. Ray Hinkly, director



Second phase of the double end trim saw operation is shown in this drawing, indicating how the lumber is carried off the tilting hoist the rebutt operation and from there to waiting bolsters on the outgoing side, where it may be picked up handily by the straddle bug and carried away. There are many interesting gadgets in connection with this machine, and they are told about in the accompanying story.

'Flying Dust Pan' Does Sweeping For Clearwater Plant

Back in 1939 Dave Troy got the idea that it would be practical to sweep the larger areas in the shipping department by means of a power sweeper. With the coming of big-tired carriers traveling at fast speeds it was necessary that the floors be swept more often and cleaner; otherwise dust and dirt would be stirred up only to settle on the lumber, causing the higher grade boards to be degraded.

Today the "Flying Dust Pan" is covering the dress sheds, dock and planer in record time, with Oliver Pattan in the driver's seat. This one-cylinder, friction-drive machine can be seen any evening scooting through the dress shed alleys and over the planer floors at speeds up to 10 miles per hour. Two gallons of gasoline are required for each eight-hour shift.

Equipped with a heavy wire cylindrical brush it will pick up knots up to 2½ inches in diameter and pieces of lath up to 14 inches long, as well as the fine particles of dust which collect on the floors.

Shelt Andrews and Monty Morris as consulting engineers have made such additions as auxiliary brushes to get the dirt near the walls; installation of a hand-lever so the brush can be raised without the driver leaving his seat on the machine; changing dust pan setup so it doesn't lose the dirt; and the installation of copper plugs on the drive shaft so sprockets will hold in place and not injure shaft.

So the Flying Dustpan, revised at Clearwater, is doing a bang-up job and according to John Aram, directing engineer, more floor space is being covered quicker and is kept cleaner than ever before. John says it's a big step forward in the solving of the dust problem which at times in the past has caused considerable damage to the higher grades of lumber.

Forestry week, held the last of April, was observed by members of the Rutledge unit at Coeur d'Alene by participation in a tree planting ceremony, attendance at the theater where "Trees and Homes" was shown, and by other activities in that city.

Sampietro Worries As U. S. Guardsmen Board French Ship

Seizure of French ships in American ports had at least one reverberation in Lewiston, according to the story told by Roy Huffman. It had to do with Pres-to-logs, and the French ship "Alencon" tied up in the estuary at Oakland, California.

"Many foreign shipmasters, having learned of the use of Pres-to-logs in the galleys of several American ships, have tried them out and the master of the Alencon was one who was using them to cook with," said Mr. Huffman.

"Due to rainy weather on Tuesday and Wednesday, May 13 and 14, a scheduled delivery of 500 bundles of Pres-to-logs to the Alencon was delayed until Thursday, May 15. The bundles had just been delivered when United States guardsmen walked aboard the Alencon and took her under protective custody.

"For a few minutes we were wondering who would pay for the logs, but Joe Sampietro, our local agent in Oakland, was assured by the General Steamship corporation, which handles financial matters for the French liner, that the seizure would in no way jeopardize payments."

News accounts of the seizure state that although the Alencon is under the tricolor of France, the only trip it ever made in the service of that country was from Portland to Oakland, following purchase by the French line from the McCormick Steamship company, and the arrival on the west coast of a crew sent from France to man the vessel.

Research has now developed a new process by which wood, in a manner similar to industrial plastics, can be heated and then shaped to any desired form.

Before modern methods of refrigeration, ships commonly carried cows to supply fresh milk, and near the end of each voyage the animals were butchered and supplied the crew with meat.

Today's electric washing machine, compared to the one manufactured 25 years ago, costs only about one-third as much in terms of the work needed to earn it.

Potlatch Students Score High Rating With Idaho's Profs

Potlatch high school students who a year or so ago, received such high achievement test ratings that they brought up the Latah county average with other counties in the state, have achieved new distinction as students on the University of Idaho campus.

According to statistics released by J. C. Eddy, superintendent of Potlatch schools, 10 former Potlatch high students, freshmen at the university during the last year, rated an average of 2.65 or .03 points higher than all freshmen on the campus.

Explanations are necessary to give value to the above statement. In the letter to Mr. Eddy, the university registrar, E. L. Olesen, says in part:

"From a total of 894 new students in September 1940, 687 came direct from high schools. The others entered as transfers from other institutions, exclusive of the Southern Branch, which is an integral part of the university. Of these 687 students, 513 came from 107 Idaho high schools.

"In computing the averages, each credit of grade A counts for 4; B, 3; C, 2; D, 1; and F, 0.

"The scholastic average of all entering freshmen was 2.10, and the 10 students from your school averaged 2.48.

"The averages were also computed from groups according to high school class ratings as given by the principals, and the following averages were made by the entire group, students from Idaho high schools, and students from your school:

FRESHMEN AVERAGES ACCORDING TO HIGH SCHOOL RANK 1st SEMESTER, 1940-41

| | Highest Q | | Second Q | |
|--------------------|-----------|------|----------|------|
| | No. | Ave. | No. | Ave. |
| All freshmen | 242 | 2.62 | 163 | 1.90 |
| Idaho freshmen .. | 189 | 2.61 | 137 | 1.83 |
| Your high school.. | 8 | 2.65 | 2 | 1.82 |

In arriving at the above data, university officials, it appears, divided the freshmen into four statistical groups. Eight of the former Potlatch high students were included in the first, or highest rating group, two fell into the second group. In the third group in which the largest number received a rating of 1.64, and the fourth group, with an average of 1.28, there were no Potlatch high school representatives.

Our Pres-to-logs Machines Ordered for Mills On Coast

stepped up by national defense orders and an increasing use of Pres-to-logs on the coast, demand for this product resulted in receipt of an order from Lewiston recently for four more machines for the Weyerhaeuser Timber company, it was announced by Mr. Huffman.

We don't know here where the machines will go except that they will be installed either in Longview or Everett, and perhaps in both places," Mr. Huffman. "This order comes on the heels of a recent installation of two new machines each at Longview and Everett plants, which gave those factories eight machines. Increasing demand for Pres-to-logs in the larger centers of population on the coast, such as the Seattle, Tacoma and Portland areas, coupled with several big orders from the army for use in training camps, is taxing the present capacity of the Weyerhaeuser Timber company.

It was thought that the four machines recently installed, two at Everett and two at Longview, would be sufficient for present needs. These machines were delivered to the Weyerhaeuser Timber company only a few weeks ago, giving that area 16 machines with an estimated capacity of about 190 tons a day. Now, however, it is found that four more machines are needed and we are rushing the machines to completion as soon as possible."

While the entire machine is not manufactured in Lewiston, certain vital parts of it are, the machine shop at the Clearwater unit here tooling the hard metal tips and manufacturing the impressing screws that press the fuel into the dies of the machine.

The Clearwater plant is the only place where these tips and screws are made at the present time.

The machine itself is made by the Millamette-Hyster company in Portland, Oregon. Electrical equipment is furnished by the Westinghouse Electric Manufacturing company and is installed on the machines by electrical engineers sent from Lewiston.

With the completion of the four now on order," the industry will have 43 machines in the United States and one in Capetown, South Africa.

Waterpowered Sawmill

(Continued from page one)

fined in a narrow forebay between the wheels, the shaft running through the water, an opening being made on each side of the forebay to permit the water to strike the buckets of the wheel. A crank was attached to one end of the wooden shaft and a Pittman rod was fastened to this crank at one end, and the saw at the other, this being the manner of transmitting the power from the water wheel to the saw. The saw made one stroke up and down to each revolution of the wheel. The carriage was moved forward by the wooden gear fitting into notches in the side of the carriage timbers, so that the carriage was advanced $\frac{1}{4}$ " to $\frac{1}{2}$ " each time the saw made a stroke. When the log arrived at the end of the cut, a trip or trigger was arranged on the side of the carriage in a manner to stop it, and on some mills this same arrangement closed the opening furnishing water to the wheels and shut the mill down.

The return of the carriage was accomplished by the use of a third water wheel with a shaft perpendicular and so arranged that when the wheel operated the carriage would travel in opposite directions to cut, and was known as "go-back" wheel. It might be of interest to note that the forward feed and the go-back wheel were American inventions, as on early European mills the carriage was advanced by hand and returned the same way.

The old time carriage was a crude affair compared to our present day saw mill carriage. The frame timbers were about 8"x10" with about a 2" groove running the entire length on the under side. These grooves served to guide the carriage over the hardwood blocks placed on the floor, and served the same purpose as our present day carriage wheels. Here again it might be interesting to note the change. Our first carriages were run on wooden blocks greased with beef tallow. The next improvement was a wheel fastened to the floor and a groove on the under side of the carriage to guide the carriage over the wheels, while our present day carriages are equipped with wheels with a track on the mill floor. The head blocks of our old time mill was simply a place to lay the log, the log being held with dogs driven into the ends, and the set works operated on a screw fastened to the dogs, and in this manner the log was moved from side to side

Fire Fighters Drill For Emergencies At Clearwater Plant

L. W. Ross, fire chief at the Clearwater plant, announces that he is getting his fire fighting crew from the fire hall ready for the "dry" season, which may come yet.

Art Pritchard has been in charge of the two hose practice drills given and will train the men in the proper use of fire equipment; the location of the hose carts and hydrants; the method of caring for and using pumps; the use of canvas covers to protect motors when water is used in extinguishing fires; and the proper instructions in the use of gas masks when used in fighting fires in hog pits, fuel vaults, and places where ventilation might be smothered and pyrenes had been used extensively.

Kenneth Ross, Everett Wallace and others will have charge of the drills at various times to help give the men a well rounded training in the protection of the plant. The drills will be carried on during the entire summer.

on the carriage. The first operation was to flat the log, very much in the same manner as at present, except that very little edging was done, the slabs being made very heavy. After the log was flatted, it was securely dogged and entirely sawed with enough uncut timber at one end to hold the lumber together so that when the boards or lumber were taken from the carriage it was necessary to split this part free and put the lumber on the mill floor and finish one end with a foot adz.

Production Rate

The mill which we have described here has been built about 125 years, but in 1905 the rose wheels and the old up and down equipment was replaced with a Falkuhr circular saw mill, and the power supplied by the Leffel wheel. This modernized the mill as far as the actual sawing was concerned, but the old mill frame and timbers remain to tell the story of the many fine logs that came on to this old mill at one end and went off the other as fine lumber, manufactured at the rate of about 1,000 board feet cut between daylight and dark.

The entire log did not go off the mill in lumber when you consider that the slabs were cut very heavy and in con-

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Waterpowered Sawmill

(Continued from page seven)

trast to today were thrown into the creek and carried away by the water, also the thick heavy saw made a lot of sawdust which found its way into the stream and was likewise carried on, so that our modern mills not only cut more lumber from a given log but they do their part in conserving fish life by not permitting sawdust to enter streams within the state of Pennsylvania.

It is interesting to note the many changes in manufacturing lumber. At the time this mill was built lubrication was a serious problem and most of the lubrication of the day was animal fats, with beef tallow in the lead, and our pioneers had many uses for the scanty supply of beef tallow derived from the few cattle they had slaughtered, without sufficient quantity to make much tallow. Most of their lights were tallow candles, their shoes were greased with tallow and their crude machinery was lubricated with tallow. In 1859 Col. Drake drilled his first oil well, and a few year slater Mr. Rockefeller began to supply the world with high grade lubricating oil.

Manufacturing lumber from the fine logs of years ago, was a real problem. Many mills were of this up and down type, built on small streams where the supply of water would furnish power only at the time of high water, and for this reason became known as "thunder gust" mills. There are many reasons why these mills were built on the small streams, the principal one being that the cost was less to build a dam and make the necessary improvements on the smaller streams, and in addition to this the land owner would usually have title to both stream banks of the smaller streams, where the larger streams were often the dividing line between properties. These mills did not have a very large capacity, and I remember well one of the operators telling me that if he started the mill when he got up at daylight, and kept it running until he went to bed at dusk, he could saw 1,000 board feet per day.

Change In Logging

To log this type of mill our forefathers did not have the present day grab. In fact, the first logs were moved by the use of a chain with links four to six inches long around the logs. Next followed the driving of what we would call a present day ring-wedge into the

This Mill Has Been Running 125 Years



For the past 125 years, this water power mill has been in operation. It is owned by the Rote Brothers, Spring Mills, Pa., and is equipped with a circular saw. Under a good head of water it can cut about 300 board feet per hour.



This is another view of the Rote Brothers water powered mill at Spring Mills, Pa. It has an edger and lathe mill attached. The mill itself is located on Penns Creek and caters chiefly to custom work.

end of the log. This followed by an iron hook shaped something like our present grabs being driven into the top of a log, later to be improved upon with the present day bulldog grab.

The power to move these logs was either horses, oxen, or mules. To move the large quantity of timber taken out many years ago with the crude tools of the day, required natural engineering ability for beyond some of our technical graduates of today. To a great extent the hauls were comparatively short, yet by the use of a log slide and sled, timber was moved many miles at a very low cost.

In comparison with our present day lumbering activities where a tractor is backed up to a stick and moved to

the landing in full length on a cold or hot day, without any stops for the team to "wind," is a step in the change of methods of transportation that few people quite realize. The speed, as in everything else, has been increased many times over the old system of animal power. If the haul is short, the timber may be landed to the mill or dock in very much the same manner as of years ago, but if the final destination is a greater distance than justifies trailing on the ground, timber is loaded on trucks which take the place of the sled or log slide, so that in the final analysis the tractor and truck have taken the place of the ox, horse, mule, sled and log slide in our modern lumbering.