A Logging Operation on the Jicarilla Apache Reservation

W. P. Harley
Iowa State College

1-1-1922

Follow this and additional works at: http://lib.dr.iastate.edu/amesforester

Part of the Forest Sciences Commons

Recommended Citation

This Article is brought to you for free and open access by Iowa State University Digital Repository. It has been accepted for inclusion in Ames Forester by an authorized editor of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.
A LOGGING OPERATION ON THE JICARILLA
APACHE RESERVATION

W. P. Harley, '15

It may be the fault of the teachers who taught us geography, or it may be our own fault, but most of us have entertained the idea that New Mexico is a barren treeless waste but quite the contrary is true, especially in the northern and western parts of the state. The original stand of timber was estimated at over eighteen billion feet, most of which was Western Yellow Pine.

The Jicarilla Apache Indian Reservation, lying in the extreme northern portion of the state, is in that belt of Western Yellow Pine timber running south from Colorado down thru the western portion of the state. Lying at an elevation of from 6,600 to 9,000 feet, conditions for the growth of Western Yellow Pine could not be better. The original stand of timber on the reservation was estimated at 300 million feet. Of the original stand, some 130 millions have been cut and we have a like amount under contract at the present time.

Because of the fact that the timbered area, some 256,000 acres, is all allotted land and as such will be turned over to the individual allottees as soon as the timber is cut, the yellow pine is being cut clear with a diameter of sixteen inches on the yellow pine and eighteen inches on the blackjack, which is yellow pine under 125 years of age, according to Woolsey. This cutting policy is varied according to the amount of reproduction already started on the area. On some areas it is not necessary to leave seed trees while on others from ten to twenty percent of the original stand is left for seed purposes. Because of the thin layer of earth overlying the rock and the necessarily shallow root systems, some trouble has been experienced with the seed trees blowing down after the balance of the stand has been removed.

THE NEW MEXICO LUMBER COMPANY

The New Mexico Lumber Company, which now has two contracts for timber upon the reservation, has been established at El Vada, New Mexico, just the reservation, since 1904. The mill was constructed during that year, but was only used for three years and then closed down. Operations there were resumed in 1915 and have been continuous since that time.

Since resuming their operations, they have had three contracts for timber on the reservation, only one of which has been completed. The price for stumpage has varied from $3.40 per thousand for Western Yellow Pine and Douglas Fir on
the first sale, to $4.00 per thousand for the same species on the last sale.

El Vado is reached by a narrow guage railroad over which the lumber is hauled, owned by the company, and is thirty-three miles from Lumberton, New Mexico, a station on the Denver and Rio Grande Western Railroad. The company's railroad was constructed in 1904, but during the period the mill was idle, deteriorated so that it was necessary for it to be rebuilt when the mill resumed operations. Its maximum grade is four percent and only nine loaded cars can be hauled over the line at a time by the narrow gauge engines.

STINKING LAKE SALE UNIT

The contract for the Stinking Lake Sale Unit upon which the New Mexico Lumber Company is now working, was signed in July, 1919, but work upon the sale area was not started until September of that year. The company has already cut 40,000,000 feet off the area with a balance of at least 15,000,000 feet yet to cut.

The timbered part of the sale area is about twelve miles in length and averages two miles in width and lies along a rimrock that cuts down through the reservation for a distance of about twenty miles. The official description of the sale area is as follows:

Townships 27 and 28 North, Ranges 1 West and East, New Mexico Principal Meridian.

The timber on the sale area lies in patches, most of it being in canyons leading up to the rimrock. It is almost a pure stand of Western Yellow Pine with some Douglas Fir creeping in near the heads of the canyons. Although the sides of the canyons are steep, little difficulty is experienced getting the timber off the sides, due to the absence of large rocks.

The quality of the timber varies greatly as to the location. In dense stands the amount of clear lumber will run as high as twenty-five percent, while in the more open stands five is a high percentage. Practically all of the timber is over-mature and because of this fact, center rot is prevalent. The defect percentage for the timber on the reservation will average from 12 to 15 percent.

The soil is largely adobe mixed with small rock except in the flats where some black loam is found. In the summer time when the ground is dry or in the winter when it is frozen little trouble is experienced in hauling with wagons or trucks, but in the spring and fall wagons will mire with very light loads on them.

There is an absence of ground cover in the denser stands of timber and these stands have the appearance of being parks.
In the more open stands and on the north hill slopes where the moisture content of the ground is greater, scrub oak is found. This is so thick at times that one has difficulty in forcing his way through it.

LABOR

In this part of the country, labor such as it is, is not scarce. For unskilled work, men of Spanish-American extraction are used.

Just south of the reservation is an area that is used largely for dry farming. Most of these farms are worked by white men who work on their farms in the summer and in the log camps during the fall and winter. With the exception of the white men filling the most important positions, other white men employed in the camps are "floaters."

CAMPS

Due to the scarcity of water on this sale area, all of the drinking water for the camps must be hauled from El Vado in tank cars so that the water question does not enter very strongly into the selection of a camp site. Water can be found in most of the canyons that can be used to water the
draft stock, but it is impregnated with alkali and is not fit for human consumption.

With the exception of the cook car and dining room which are on trucks, this company does not use a car camp. All of the bunk houses, 12x14 feet, and holding two men, are on skids to facilitate loading and unloading when the camp is moved. Shacks with the exception of the bedding are furnished by the company.

No commissary is located at the camp and all supplies are purchased at the company commissary at El Vado. The wife of the logging foreman is employed by the company to take the orders of the people in camp and telephone them in to El Vado. Tuesdays and Fridays are the regular supply days at the camp, but they can be purchased at any time.

A logging camp on the Reservation.

Until September, 1921, the company charged $1.10 per day for meals at the company cook house, but on that date the charge was reduced to $1.00 per day.

They have no camp doctor, but simple remedies can be obtained from the camp foreman. The mill doctor is available for the more important cases. Married men are charged $2.50 per month for doctor fees and single men $1.50.

For the past two years, the company has maintained a school at the camp for the children of the camp employees. The greater part of the teacher's salary is paid by the state with the lumber company paying the balance.
LOGGING

Some two years ago, when the company first started contract logging, they figured that they could dispense with all of their teams and thus cut down their logging cost. It was found after a short time that the contractors would not get all the timber that the company was required to get so that it was necessary for them to procure teams and start in logging again. This has raised the cost of the logs away above the price paid the contractors for them.

Following employees of the company are located at the log camp, a logging foreman at $200 per month, camp clerk at $25.00, scaler at $100, cook at $125 with two helpers at $50 each. Besides these they have a blacksmith at $6.00 per day, a barn man at $100 a month and two camp helpers at $3.00 per day.

FELLING

As soon as the company moves to a new camp site, the foreman divides the timber to be cut from that camp into strips, marked so that there will be no difficulty for the cutters to distinguish them. This is done so that each felling crew can be placed in a distinct area. The felling crews consist of two men.

All felling is done with the cross-cut saw, the trees being notched with the axe. Wooden wedges are used to fell the trees in the desired direction. Because of the amount of reproduction on the ground in places, great care must be taken not to break it while felling trees.

The breakage in this timber is heavy and not due to carelessness on the part of the sawyers. As stated before, the timber is more or less rotten, due to center rot, and any slight projection that the tree hits in falling is liable to split it.

The regular log lengths cut are 12, 14, 16, 18 and 20 feet. At times longer logs are cut to fill special orders that the mill has.

According to Indian Service regulations, trees must be utilized to a top diameter of eight inches. This company adheres very closely to the regulations and there is very little loss from this source.

In the more difficult situations, the cutting is done by men employed by the company at the rate of $3.00 per day. At the present time the company is paying only 80c per thousand for cutting logs by contract and they only have one or two gangs working at that rate, most of the sawing being done by the day. Five thousand feet per day is a large cut for men working on the day basis for the logs are running about seven to the thousand.
At the beginning of 1921, the company was paying $1.20 per thousand for cutting. In July they lowered that to $1.00 and in September to 80c.

Sawyers are required to buck and roughly swamp their logs.

**SKIDDING**

All skidding is being done by horses and the distance logs are skidded varies up to a half mile. Skidders usually work in pairs so as to assist each other in skidding large logs. Skidders are required to finish swamping the logs.

As far as possible, the wagons are brought to the logs in order to lessen the skidding distance. In some cases logs have been skidded to the edge of cliffs, dumped over and then re-skidded into loads.

In the more accessible timber, skidding is being done by contract at the rate of 80c per thousand, the company teams doing the hardest skidding.

During the year, the rate for skidding has been reduced from $1.25 to 80c per thousand.

**HAULING**

The hauling is being done with wagons, both four and eight wheeled, automobile trucks and sleds, depending upon the season of the year. During the dry months when the ground is frozen, auto trucks have been very successful, but the eight wheeled wagon has proven more successful in all kinds of weather.

During the past winter, one of the truck drivers hitched a logging sleigh behind his truck and brought in as high as 10,000 feet to the load, an almost unheard of figure in this country, where 1,300 feet is the average load.

The logs are skidded up into loads in the woods and loaded on the wagons by the cross-haul. The leaders of the four-horse teams are trained as cross-haul horses also.

At the present time this company is paying contractors $1.60 per thousand for all hauls up to a mile with a proportionate increase for distances over that. This is a very unsatisfactory way of paying for hauling as a man hauling only a quarter of a mile receives the same payment as a man hauling three-quarters of a mile. As the company does the long and difficult hauling with their own teams, the average cost for hauling is a great deal higher than the amount they pay the contractors.

**LOADING**

This company still uses the cross-haul for loading their logs on the cars. They have figured on getting a steam log
loader so as to be able to load faster and also do away with skidway construction, but have never purchased a loader. The company furnishes the cross-haul team and supplies, the loading crew of four men receiving 30c per thousand for the work. The contract price was reduced 5 cents a thousand during the year.

In average weather, the loading crew will load about ninety thousand feet per day on two fifteen car trains.

BRUSH DISPOSAL

Because of the scarcity of moisture in this country, it is difficult to secure natural reproduction on cut over areas. The method of brush disposal used in this country was evolved with the idea of conserving moisture instead of the brush being piled and burned it is lopped and scattered.

During the winter, the snow will drift around the brush and take longer to melt in the spring.

The brush contractor is required to clear a space at least ten feet wide around all reproduction. The fire danger is very small in this country and this space is deemed sufficient for fire protection.
Twenty-five cents per thousand is paid for brush disposal, the company furnishing the supplies.

**LOG LINE**

An arbitrary charge of $1.00 per thousand is made for main line and spur construction on every thousand feet of logs cut.

All log lines and spurs are laid out by a competent engineer and grades thrown up. This is more expensive than the ordinary run of logs, but the manager of the company figures they save the difference in the cost by the lack of wrecks and repair bills.

The average cost for construction during the past year was $5,000 per mile for main line and $3,000 for spurs.

The company is now hauling logs a distance of sixteen miles, but hauled as high as twenty-four miles during the year.

**LOG LINE EQUIPMENT**

At the time the New Mexico Lumber Company commenced operations in 1904, they made a contract with the Denver and Rio Grande Western Railroad for that company to furnish them engines at a daily rental of $6.50, the lumber company to stand the cost of inspections and repairs which must be made every month. At the present time they are using two of these engines on the log line.

The log cars are of the skeleton type capable of carrying 4,000 feet of logs unequipped with air. During the year they averaged two fifteen car trains a day.

**LOG LINE MAINTENANCE**

The relatively high cost of maintenance is due to the labor employed. All of the section crews are of Spanish-American descent and fit for little else. It takes five section crews of five men each to take care of twenty miles of track.

In cost accounting, seventy percent of the maintenance cost is charged to labor and thirty cents to renewals.

In the cost summary which follows it will be noted that the cost of the logs F. O. B. the mill is $14.09.

**Summary of Camp Costs**

Logging Foreman—$200.00 per month.
Camp Clerk—$25.00 per month.
Scaler—$100.00 per month.
Blacksmith—$6.00 per day.
Barn Man—$100.00 per month.
Camp Helpers—Two at $3.00 per day.
Camp Cook—$125.00 per month.
Cook Helpers—Two at $50.00 per month.
Summary of Contract Logging Costs

Felling—80c per M.
Skidding—80c per M.
Hauling up to one mile—$1.60 per M.
Loading—30c per M.
Brush disposal—25c per M.

Summary of Railroad Costs

Engineer—40c per hour.
Firemen—32½c per hour.
Brakeman—40c per hour.
Section foremen—$60.00 per month.
Section hands—18c per hour.

Summary of Logging Costs Per Thousand, F. O. B. Mill

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Felling</td>
<td>$1.30</td>
</tr>
<tr>
<td>Skidding</td>
<td>1.78</td>
</tr>
<tr>
<td>Hauling</td>
<td>3.35</td>
</tr>
<tr>
<td>Loading</td>
<td>.40</td>
</tr>
<tr>
<td>Brush disposal</td>
<td>.35</td>
</tr>
<tr>
<td>Cook house losses</td>
<td>.11</td>
</tr>
<tr>
<td>Barn loss</td>
<td>.10</td>
</tr>
<tr>
<td>Supervision</td>
<td>.10</td>
</tr>
<tr>
<td>Scaling</td>
<td>.05</td>
</tr>
<tr>
<td>Depreciation on logging equipment</td>
<td>.16</td>
</tr>
<tr>
<td>Railroad construction</td>
<td>1.00</td>
</tr>
<tr>
<td>Railroad operation—</td>
<td></td>
</tr>
<tr>
<td>Wages</td>
<td>$.30</td>
</tr>
<tr>
<td>Supplies</td>
<td>.49</td>
</tr>
<tr>
<td>Rentals</td>
<td>.22</td>
</tr>
<tr>
<td>Shop</td>
<td>.09</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1.10</td>
</tr>
</tbody>
</table>

Railroad maintenance—

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor</td>
<td>$.55</td>
</tr>
<tr>
<td>Renewals</td>
<td>.23</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1.78</td>
</tr>
</tbody>
</table>

Stumpage—$10.58

Total Cost F. O. B. Mill—$14.08