The Great Northern Paper Company, Chapter 21: Spruce Wood

John E. McLeod

Follow this and additional works at: https://digitalcommons.library.umaine.edu/great_northern

Part of the United States History Commons

This Book Chapter is brought to you for free and open access by DigitalCommons@UMaine. It has been accepted for inclusion in Great Northern Paper Company Records by an authorized administrator of DigitalCommons@UMaine. For more information, please contact um.library.technical.services@maine.edu.
Chapter XXI

Spruce Wood

Sherlock Holmes once remarked to Dr. Watson: "There should be no combination of events for which the wit of man cannot conceive an explanation"; but the writer, after evaluating the literally thousands of bits of fact and legend about the woods operations of the Great Northern Paper Company concluded that not even the Great Detective could put these together and arrive at any explanation of what went on that would be comparable to what could be written of, say, the Millinocket Mill. Consequently, he has injected into earlier chapters, at what seemed to be appropriate places, much that perhaps should have gone into this one.

This part of our story, then, can be only a sort of compendium of information about woods activities, which hopefully will convey some impression of what went on, although when it went on is often rather vague. It will have little continuity, and will end no place in particular. It will deal mostly with the more unfamiliar and perhaps more picturesque years, but some of the content is debatable, being based on hearsay and on the writer's own recollection of matters with which he is not as familiar as he should be. Nevertheless, while faulty in many respects, it cannot help but be interesting to many, and it will not be without value.

From the time the Madison mill began to make paper late in 1899 through the year 1951, the mills of the Company chewed up something like 16,000,000 rough cords of pulpwood. This is not an official figure, just an educated guess, based upon paper prod-
duction and a rule of thumb figure for cords per ton, reinforced by a known figure of approximately 11,000,000 cords up to 1942. Over this period, except in times of war and depression, yearly consumption rose gradually, reaching a rate of around 500,000 cords in 1951. As this is written in 1974, the two Maine mills are using twice that much each year, but that has nothing to do with the case, and 16,000,000 cords was a lot of wood.

To produce it and deliver it to the mills, men bought timber-land and stumpage from other people; they surveyed and cruised land and made plans as to how and when they would take the wood from it. They went to law and were taken to law; they lobbied in the halls of the Legislature, and they bickered with bureaucrats, domestic and foreign. They went into the woods on foot, in horse-drawn vehicles, in motor vehicles, in canoes, rowboats, power boats and aircraft. They took with them supplies, materials and equipment, carried on wagons or sleds drawn by oxen or horses or tractors, and in trucks, over no roads, snow roads, tote roads, dirt roads, gravelled roads, paved roads and lake ice; and on rafts, scows and boats. They built roads and camps and storehouses and barns and shops and dams and bridges and piers and booms and wharves and conveyors and sluices and boats and telephone lines and railroads. They took care of thousands of draft animals and maintained hundreds of motor vehicles and untold numbers of pieces of mechanical equipment -- we were about to say uncounted, but they were all counted and numbered and marked "G.N.P. Co.". They dug wells and hewed and sawed lumber and made sleds and harness and ironwork and snow plows and anything else they happened to need. They ran farms and raised crops and pigs and cows and
hens. They felled trees with axes and cross-cut saws and bucksaws and chain saws. They stripped the bark from millions of them with axes, spuds and draw-knives. They cut them into logs and manhandled them onto sleds, hauled them to water and manhandled them off again. They cut them into four-foot sticks which they picked up in their arms and piled in tiers. They tore down these piles and loaded the wood onto sleds and trucks with muscle, conveyors and cranes; they hauled it to the brooks and rivers and unloaded it and piled it again; they hauled it direct to the mills; they hauled it to the railroads and put it into cars and unloaded the cars again. They picked it up and threw it into the streams or pushed it in with bulldozers in the spring and floated it down to the mills, pulling it off the shores all along the way with cant-dogs, pickpoles and pickaroons, blowing it loose with dynamite when it jammed, towing it across the lakes in booms, dragging it over the rocks when the water was low and lugging it out of the swamps and alders when it was high. They bought wood, scaled wood, measured the growth of trees and kept accounts and records. They fought blackflies and mosquitoes and forest fires and the budworm, and some of them got hurt and some of them died doing their jobs.

The manner in which things were done of course changed over the years, but the time of transition from one method to another is uncertain, and things were done in one way in one place long after they were being done some other way in another. Nobody drove his car into a camp in 1900; no cruising was done from an airplane in 1910; no trucks were hauling out of the woods in 1920; no loading or unloading was done by cranes in 1930 and nobody was using a chainsaw in 1940; but there were steam log haulers in the
woods while the Company was still buying oxen; there were steam-boats towing on Chesuncook Lake while batteaux powered by a white ash breeze were being used on other parts of the drive; crosscut saws and bucksaws were being used in the woods at the same time; bucksaws and chain saws were being used in the woods at the same time; horses and tractors worked side by side, doing the same job, for years; wood was loaded on trucks by portable conveyors on one operation while it was being hoisted onto sleds with pulphooks on another. Wood was cut from big operations and small operations; from Company camps, contractors' and sub-contractors' camps and shackers' huts, and it was purchased from dealers who bought and sold it, and from individual little producers. No two operations were exactly alike; no two streams were the same to drive; much of the labor force was transient and its character changed more than once over the period of which we are writing; the evolution of new methods of doing things was sometimes almost imperceptible, and the activities we will be considering were taking place over an area of more than 20,000 square miles. This is two-thirds of the State of Maine, and the figure may be doubted, but looking at the map, wood for the Company's mills came at one time or another from almost every part of the area enclosed by a line running counterclockwise from Springfield northward up the New Brunswick border; along the St. John River, around Township 20 Range 11-12 -- "Big Twenty" -- down the Quebec border to the Coburn Gore, eastward along Carabassett Stream to North Anson and back to Springfield by way of Hartland, Dexter and Lagrange. In other words, if, as it was said, the big operations of the old pine log days were south of a line from Magalloway Plantation to Vanceboro, Great Northern operations were north of it, spilling over at one time into Quebec,
and as we have noted elsewhere, into areas of New Brunswick as far away as the Caraquet Coast on the north and Sussex in the south. Records of all this were stored in many places and moved many times, losing much at each move that would be of value to the historian. Collecting information on some one point has sometimes meant talking to three or four different old-timers, each of whom has a different memory of it, and writing this chapter has been a mind-blowing experience.

The story has to be told largely in terms of tangible changes. The function of the mills was always to make paper. That of the Spruce Wood Department was always to cut and deliver the wood from which to make it. As the changes in techniques used in the mills were reflected in the improvement of plant and equipment, so were the changes in the methods employed in the harvesting of pulpwood, but where the Company's manufacturing operations began in scientifically designed mills, firmly established at specific places on the banks of the Kennebec and the Penobscot, its woods operations began with little but land, and it took a long period of time to develop the equivalent of an efficient plant, which was not in one place, but was spread all over Northern Maine, and much of it was temporary, or expendable.

The wood-procurement arm of the Great Northern Paper Company, during the period of which we are writing, was an entirely independent division, its head responsible only to the President. It had no association with the manufacturing operations except in the areas where jurisdiction over the wood passed from one to the other, and as one borrowed equipment and labor from the other,
mostly in connection with construction work. As for seventy years the activities we have noted, and there were probably as many more that we have not, were directed from Bangor, it might be appropriate at the beginning to tell what we can about the offices there, the organization connected with them, and in a broad way, what changes took place while they were in existence.

Up until some time in 1900, the purchasing of timberland and the procurement of wood for the mills was handled by Charles Mullen, who had an office in Old Town and another in Bangor. In this period, the amount of wood needed was not great; just the small quantity needed for the Madison mill and enough to be piled out at Millinocket to run the new mill through the winter of 1900-1901; but at that, there would seem to have been some problems, as in October, 1899, just before the Madison mill was due to start up, Garret Schenck sent Charles Mullen over into the area around Megantic and Sherbrooke, Quebec, to see if he could get some wood for that plant. When Fred Gilbert took over in 1900, he established a Company office in Bangor. We do not know where it may have been originally, and it was moved several times as the organization grew and more space was required. About 1908, it was in the Morse-Oliver Building, at the corner of State and Exchange Streets. This building was destroyed in the great fire of 1911, and Fred Gilbert found a new location at 47 Main Street. This was called the "Operating Office". It was not large enough to hold the whole staff, and a second office for the Forestry and Land Surveying Departments was opened at 116 Main Street. This was a temporary arrangement. In 1913, the whole organization was moved into rooms on the top floor of the new Eastern Trust & Banking Company (North-
east Bank) building at 6 State Street, where most of it remained until 1969, and the rest until 1972, when the Bangor office was discontinued. This location became the Head Office of the Company for ten years, starting in 1952, but we will take up that development later.

While separate books of account were kept for "Mills" and "Spruce Wood" in the early days, the timberland management and wood procurement division originally had no distinguishing appellation; it was just the Great Northern Paper Company. Fred Gilbert, as far as we can tell from old correspondence, used no title until he became a Vice-President in 1920, but for convenience we will call him the Manager. There was an administrative organization, and we can be reasonably sure of its early make-up. As the various parts of this organization were in responsibility somewhat like the principal divisions of the Manufacturing Department, we will give the names of those who headed them, as far as possible.

Fred Gilbert had an Assistant Manager, Frank Thatcher, who in addition to his other duties, handled the purchasing of independently procured wood. To the best of our information, there were a Forestry Department and a Land Surveying Department, two separate organizations. There was an Accounting Department, under Byron H. Whitney, Accountant; a one-man Purchasing Department, John Woodward; a Timberland Agent, Edgar B. Weeks, and a small clerical staff. There was an employment office, which in the earlier years was not really a Company operation. There was a field staff of clerks and timekeepers in the various operations, and several paymasters working out of the Bangor office, all of whom reported directly to the Manager. In information on the early Bangor office, A. Ledyard
Smith, the Assistant to the President, is noted as being the Company's "Agent", although he was located in Madison. About 1906, H.H. Pope became the Agent, and he was located in Bangor, but we have not been able to discover just what this job entailed. The writer does not recall that there was any such position when he joined the Company, and he has not included it as part of the wood producing organization. However, we will take up the other parts of it more or less in order.

We have noted the circumstances surrounding the resignation of Fred Gilbert in 1929, and his replacement by William Hilton, who had been Superintendent of the Division of Forest Engineering. We will explain this Division later. William Hilton was still Vice-President and Manager of Spruce Wood in 1951.

Frank Thatcher apparently held the position of Assistant Manager until 1915. He was followed by J.F. Phillipi, who had been head of the Division of Forest Engineering. J.F. Phillipi resigned in 1920, and was succeeded by R.H. Robertson, who had been the Chief Accountant. As best we can remember, the next Assistant was Francis F. Pearson, who was transferred from the Fast Millinocket mill, where he had been Assistant Superintendent, in 1930. Upon his resignation in 1945, the position went to Roy V. Weldon, who was at that time the Construction Engineer, located at Millinocket. Roy Weldon was followed in 1950 by Donald Swan, who had been head of the Purchased Wood Division. Anticipating a little, John T. Maines, who had taken over the Purchased Wood job, was also given the title of Assistant Manager early in 1952, so that between that time and February, 1954, when Don Swan resigned, there were in effect two Assistants.
We do not know just how the purchasing of wood was handled in the early years, but for some period of time before 1936 there was only one buyer, Phil Murdock, in the field. In that year, or thereabouts, the Purchased Wood Division was established, and he became its first Superintendent, his organization consisting of one man in Northern Aroostook County, one in the Houlton area, one in what was called the Bangor District and one handling purchasing in New Brunswick and in the country around Millinocket. He was succeeded about 1944 by Dean Chase, Sr., who had been the Millinocket buyer, and starting in 1948 Don Swan held the position for a couple of years; was followed by John Maines; and when the latter was moved up in 1952, Robert Leadbetter took over, holding this job until his retirement in 1971, again anticipating. This division was highly important during times of wood shortage, and we believe that during the World War II years there were nine or ten buyers, one in Fredericton, N.B., and others scattered all the way from Fort Kent and Van Buren to Bangor and Dover-Foxcroft.

William A. Whitcomb came to the Company as General Manager late in 1910, and while he had little to do directly with the woods end of the business, he was very influential with Garret Schenck, and it is hard to believe that it was coincidence that a number of changes were made quite promptly in Bangor. To begin with, the woods organization was at this time given the name "Spruce Wood Department" by which it was known until March 1, 1952, when it became the "Woodlands Department", the Spruce Wood part of it being considered outmoded. Accounts vary, but apparently up until 1910, the foresters and surveyers reported to the Manager. In that year a Land Surveying Department was set up under Everett L. Amey, and
a Forestry Department under J.F. Phillippi. However, in 1912 or 1913 these two departments were combined into the Division of Forest Engineering, the name being descriptive of its function, with J.F. Phillippi as Superintendent and Everett Amey as Engineer. When J.F. Phillippi was moved up in 1915, his place was taken by D.A. Crocker, who did not stay long, for some reason. He was followed by Wentworth Peckham, who also lasted quick, and in 1917, William Hilton, who had been Assistant Superintendent, took over. When William Hilton became Vice-President and Manager of Spruce Wood in 1929, his assistant, Ernest L. (Pete) Jones, was made Superintendent of the D.F.E., and upon his retirement in 1952, again anticipating a bit, the position went in turn to his assistant, Paul Patterson.

The Accounting Department remained under Byron Whitney until 1908, when it was taken over by William St. John Murray, who was removed to set up a new operation in 1917. The new Accountant appointed at that time was R.H. Robertson, who came from the mill office in Millinocket. When he was made Assistant Manager of the Spruce Wood Department in 1920, his successor was C.A. Smith. In 1911, along with other changes, an internal Auditing Department was set up under George O'Connell. This did not have much to do with the Accounting Department, dealing primarily with the work of the woods clerks, and its staff was usually in the field, as the clerks settled with sub-contractors, but only after these accounts had been audited. The auditing of the Bangor Accounting Department was handled from Millinocket, as we recall. George O'Connell took over one of the woods operations in 1921, and was succeeded by C.E. Millett. In 1928, as we have noted in another place, the Spruce Wood Accounting and Auditing Departments were moved bodily to Millinocket.
nocket and placed under the direction of Bryan Seelye, and C.A. Smith shortly resigned.

The first Purchasing Agent, John Woodward, was followed, we do not know just when, by James A. Boardman. Upon his death in 1913, the job was taken over by Charles Curtis, who held it until after World War II, when, upon his retirement, it went to James S. Hooper, who was Purchasing Agent in 1951.

We are not sure of what the duties of the Timberland Agent may have originally consisted, but whatever else he may have done, he was the Chief Scaler. Edgar B. Weeks was followed by Frank F. Wood at some unknown date. This function was incorporated into the Division of Forest Engineering in 1918.

In the original organization there had been a Cashier, who apparently handled mostly the local funds. The paymasters, who handled payroll in the field, reported, as we have said, to the Manager. In 1917, a Paymaster's Department was set up, with William St. John Murray as Cashier and Superintendent of Paymasters. Woods workers were paid in cash at this time and for many years later, the travelling paymasters carrying large amounts of money; as much as $40,000 at a time; into the operations, to be disbursed. To the best of our memory, the payroll operation was also moved to Millinocket in 1928, although William St. John Murray remained in Bangor as Cashier for some years, and it was not too long after this that payment by check instead of cash was instituted.

With thousands of men and other thousands of draft animals in the woods, requiring huge quantities of food and other supplies,
and with equipment and machinery scattered all over Northern Maine, all of which had to be accounted for, the woods clerks and the timekeepers who reported to them were very necessary to the operations, and paper work was extremely important, for which reason we will devote considerably more space to this part of the organization. First, let us say that there was a big difference between the man in the mills, blue collar or white collar, who expected continually increasing reward for his efforts, in money and improved working conditions as a matter of right, and the man in the woods, clerk, woodsman or whatever, who pretty much accepted things as they were, and the way they were was spelled out by the management. Consider, in comparison to what we have written of mill conditions, the unbelievable rules posted in the Bangor office in the very early days, when the woods clerical people frequently came there to make their reports. These were taken from the March, 1965 issue of the "Pittston Farm Weekly", a newsletter put out on his own time by Felix Fernald of that place between 1963 and 1966 and affectionately known as "Fernald's Journal". This publication contained much spontaneous humor and many tall tales, along with current news, but it also quoted from early bulletins and letters, over signatures. The writer has verified a large number of these, and while he has not seen the original of these particular rules, the wording is not inconsistent with Fred Gilbert's way of using barbed wit to make a point, and we have no reason to doubt its authenticity:

"RULES FOR EMPLOYEES

1. Office employees must fill lamps, clean chimneys and trim wicks. Wash windows once a week.

2. Each clerk will bring in a bucket of water and a scuttle
of coal for the day's business.

3. Men employees will be given an evening off each week for courting purposes.

4. After thirteen hours of labor in the office, the employee should spend the remaining time reading the Bible.

5. Each employee should lay aside, from each payday, a goodly sum of his earnings for his benefits during his declining years, so that he will not become a burden on society.

6. Any employee who smokes Spanish cigars, uses liquor in any form, or frequents pool and public halls, or gets shaved in a barber shop, will give good reason to suspect his worth, intentions, integrity and honesty.

Signed: F.A. Gilbert"

Within a year or two after the Bangor office had been established, the arrangement of having all the camp clerks report to the Manager became unworkable, and a Chief Woods Clerk, William Thompson, was appointed. He held this position until 1911, when he was succeeded by Pat Whalen, a former woods clerk, a man who took his job very seriously. A printed, leather-bound pocket booklet of Instructions for Clerks and Timekeepers, revised from time to time, was almost surely, from the phraseology, compiled by Pat Whalen. The copy we have was probably issued about 1914, although it is undated. It gave these people rather complete information as to their duties, with examples. These instructions are a little too involved to discuss, as they got into such details as how to properly use the "GN" stamp hammer on tool handles, but the booklet was most interest-
ing, and for our purposes entertaining, in other respects.

It began with a pep talk entitled "Foreword", of which we quote parts:

"...The Clerical Force is one of the most important factors of the Spruce Wood Department, because it is the starting point of the System. As the success of a woods operation, from an accounting standpoint, depends on the Clerk, so also does the efficiency of the System depend on the condition of the reports the Clerk renders.

In order to increase the efficiency, we must have uniformity in the method of making reports, a point brought about by strict adherence to this Rule Book; we must have harmonious co-operation....we must have INDIVIDUAL INITIA-TIVE, which not only aids the System, but aids the individual as well, for it is the pathway to promotion.

The Clerk who has the desire to succeed, if he has INITIATIVE, will succeed. He will not find fault with the System, with new Forms, with his fellow-workers. He possesses that attribute which includes all the qualities required to place him above the others..... No Clerk will prove a success in any position who does not use his brains. He must show some INITIATIVE, some ORIGINALITY. He will doubtless make mistakes, but there is nothing wrong in this; the wrong comes in making the same mistake twice.... Advancement is not made from point of service alone. The one who sits and waits for promotion will never get it. He must PRODUCE. It is not so much WHAT he does that counts, but HOW he does it, and he will be rewarded accordingly...."
Just how the application of individual initiative and originality was to be reconciled with the stricture of adherence to the Rule Book is not quite clear, but that's what the man said.

Scattered through the last part of the booklet were a number of admonitions, mostly concerning personal conduct, like:

"The discussing of Company affairs and superiors, by Clerks and Timekeepers, with other than those having proper authority to broach such matters, will not be tolerated. It is a deplorable fact that there have been a few of our employees who are altogether too prone in this respect..."

"The unlawful slaughter of deer or other wild game by employees is in direct violation to the policy of this Company. Any employee of this Company found guilty of violating the game laws of the State, must expect to bear the consequences."

"The use of liquors by Clerks and Time-keepers while on duty is not permitted. The frequenting of places where liquors are sold, will be considered sufficient cause for dismissal..."

"Gambling by Clerks and Time-keepers is strictly forbidden, and must not, under any circumstances, be indulged in. Any case of violation of this rule....will be summarily dealt with."

"Typewriters have been furnished at some of the larger places, for the purpose of making up special statements and must not be used for any other purpose unless the Clerk is competent to operate the machine. They must be kept free from exposure when not in use."
While some very fine men came out of the woods clerical force, not many of them could be such examples of efficiency, integrity and clean living as Pat Whalen seemed to expect. He appears to have been unwilling to deal with individual situations, however, and when someone got out of line, everyone got a circular letter like so:

"CIRCULAR LETTER (Undated - the Spruce Wood Department was more than a little careless about dates)
ALL CLERKS: In relation to Form 40, Monthly Reports... Economy in the use of our Report Blanks must begin at once in the case of some of our clerks whom we learn are using them to figure on...."

"CIRCULAR LETTER (Undated)
ALL CLERKS: We are not satisfied with the slipshod methods some of our clerks are using in charging and crediting back Horses and Equipment, that we loan or sell to outside parties. You are supposed to be capable of finding out where Horses, Etc. go, when they leave your operation. It is poor policy to stand back and complain that you did not know who to ask...."

"ALL CLERKS: May 3, 1913
It is time that every clerk should know that he ought to be looking around his storehouse and camps to see that such goods as fresh beef, corned beef, hams, shoulders,
fresh fish, etc. are not spoiling, and when he finds they may, take care of them or send them to some other operation where they can be used. . . . See also that when a box of soap is opened for use that the bars are taken out of the wrappers and stacked up on the bottom side of the empty box in such a way that the air will get through them, as the dryer it is the longer it will last...."

"ALL TIMEKEEPERS: June 4th, 1913

Your duties not only comprise the handling of your books and reports, but many other kinds of work, varying according to the job you happen to be on. Anyone who has to be coaxed to take care of and mend Grain Bags, look after and protect from ruin Supplies and Equipment, clean up their office and make at least two trips among the crew daily is not going to stay with us long...."

"CIRCULAR LETTER Feb. 15th, 1914

ALL TIMEKEEPERS: Despite our previous warning it is deplorably true that many of our timekeepers have neglected to look after supplies and equipment in a way that shows they have the interest of the company at heart. In a good many places that we know of equipment is scattered around and lost under the snow.
Supplies get wet and frozen in the dingle; some of them are covered up with other goods and lost track of; and good grain bags are laying around everywhere with no more attention paid to them than to the chips near the wood pile.

We want every timekeeper to cultivate a memory for the following: that although keeping time and wangan accounts is an important duty and should be attended to properly and primarily there is another branch of routine work, namely the checking, recording, accounting and care of every conceivable article of supplies and equipment that he must either attend to or get out, so we can put someone in who will. The usual April excuses will not be listened to hereafter, no matter how well put.

Yours very truly,
Great Northern Paper Co.
By P.F. Whalen

Clerks please note."

There are many others, but this is more than enough. However, it seems to us that it would be too bad not to record some of these little nuggets dug up out of the past, not only for their unconscious humor, but for what they tell us about those days. Although this barrage was directed at camp and storehouse people, there were clerks on the farms and on the river drives, and no doubt they came under
the same kind of fire. The clerk was the fountainhead of information about the production and supporting operations, and that his standing in the scheme of things, along with much else, changed little over all the years of which we write is brought out in a poem about his duties, written in the early 1950's by George Bessey, a clerk at the Pittston Farm; four single-spaced typed pages long; terrible verse, but one of the funniest things we have ever read, which ends:

"Yes, everyone spurns him, the upriver clerk;
He's lazy, he's dirty, a drunk and jerk.
But everyone says he's an awful good Joe,
"Cause they just can't deny it, he's the man in the know."

In spite of, or perhaps because of Pat Whalen's constant needling, he seems to have developed a good organization. Early in 1915, the American Credit Company was engaged to make a study of the woods clerking operations, their investigation taking them to the Kineo Shop, the Seboomook and Pittston Farms, the Flm Stream and Boydtown operations and the North Branch drive. Their report, made on March 15th, was submitted with a letter reading in part:

"We were very much pleased to observe the almost perfect organization which has been perfected in regard to the operations in the woods and the wealth of information obtainable from the clerks at the camps, etc.

The suggestions we offer, in this report, are not adverse criticisms regarding the organization, but are submitted with a view toward a greater efficiency and labor saving."
We have also the following letter, which may or may not have had some bearing on the efficiency of the organization:

"Greenville Jct., Maine
August 21, 1919"

Mr. Nelson O. Smith,
Lily Bay, Maine

The question of clerks and timekeepers taking their wives into the woods has several times been brought to my attention.

It might be well to state that I am not in favor of it, and think it unwise for the best interests of all concerned.

SUPT. WOODS CLERKS"

The kind of attention that Pat Whalen gave to detail resulted in the job being too much for one man, and in 1918 the Superintendent of each of each of the geographical areas in which operations were being carried on was allowed to hire and supervise his own clerks and timekeepers, Pat Whalen remaining in charge of only the farm and storehouse people. This did not work. In 1919, he was put in charge of a woods operation; a Superintendent of Farms and Storehouses, George Tupper, was appointed, and the Woods Clerical Department was split, the farm and storehouse clerks being put under George Tupper, and the woods clerical people under Leon G. White who was given the title of Superintendent of Woods Clerks and Timekeepers. In the next few years, the position of Superintendent of Farms and Storehouses was held in rapid succession by H.H. Stilley and Frederick Rippe, who left in 1924, at which time all the clerks and timekeepers were put back under one man, Leon G. White, who handled things in quite a different manner than had Pat Whalen.
The writer did not know Pat Whalen, but he knows Leon White, a very fine man, who depended upon personal contact with his men rather than on the circular letter technique. People have told of meeting him, all alone, far up in the woods, on his way from one operation to another. He has given us a number of the logs which he kept on his visits to one place or another, out of which we have condensed one, picked at random, to indicate what had to be done to cover just one of the areas. On January 12, 1926, for instance, in the dead of winter, he went from Bangor to Grindstone on the Fast Branch by train, and stayed at the operation there over night. On the morning of January 13th, he walked from Grindstone to the Rice Farm, some eight or nine miles, and from there to the Millinocket storehouse in the afternoon, then took the train back to Grindstone, staying there again over night. On January 14th, he went by train to Davidson and back to Grindstone again. On January 15th he travelled by train from Grindstone to Ashland, and in the afternoon walked about eight miles to the "10-Mile" camp, and stayed there over night. On January 16th he walked to what was called the "25-Mile" camp; this would have been 12 or 15 miles; and stayed over night. On January 17th he walked to a dam construction job at the outlet of McNally Pond, another 15 miles or so, and stayed over night. On January 18th, he walked to a log hauler operation on Fourth Musquacook Lake, about another 15 miles. On the 19th, he started to walk from there to Churchill Lake, about 12 miles away, in a rainstorm, but caught a ride on "the hind end of a tractor train". He stayed at Churchill Lake overnight, and on the 20th "tried the lake and found the crust would hold me", so started on foot for the head of Eagle Lake,
some 12 miles distant. From there he went by the railroad (the Eagle Lake & West Branch, which we will tell about later) to Umbazookskus Lake, staying at one of the camps on Charlie Glaster's operation. The next day, January 21st, he walked some nine miles to Chesuncook Village, and on the 22d took the "stage", a sled drawn by a four-horse team, down the tote road to Grant Farm; the "jitney", a small truck with a sort of panel body built onto it, from there to Greenville, and the evening train back to Bangor.

Ten years later, the writer walked from 6 to 12 miles over tote roads to get into several large operations, so little had direct access to them improved in that time, although the main road system had been considerably extended.

By 1938, probably on account of the Wage-Hours laws, more supervision was needed, and the job was split up again, with two Chief Woods Clerks, Leon White having charge of certain areas and Hugh Morrell, who died about 1947 and was followed by Maurice Anderson, the rest. Leon White transferred to the Purchasing Department in 1950, this department also having outgrown one man, and was succeeded by George Hall. Later still, with better communications and transportation the job could again be handled by one man, and George Hall became Supervisor of Clerks.

For the first few years, woodsmen of the type we have described elsewhere were available, but it shortly became necessary to recruit, and in 1907 the Company made an arrangement with Harrison T. (Harry) Burr, who had opened an employment office at 76 Washington Street in Bangor the year before, to supply woods labor, and his business became almost entirely Great Northern.
Harry Burr's clients seem to have been a little slippery, some of them signing up when they were drunk, and changing their minds later. A letter dated June 15, 1914, from Pat Whalen to all clerks reads in part:

"Under a new arrangement which H.T. Burr has made with this office, he is permitted to take a receipt for each crew that he turns over to us at the rail or steam-boat station. This, of course, means that the clerks of these points must be around when the crews arrive and look them over and count them up. It is up to this clerk, then, to notify the clerk of the operation the men are intended for, that a crew is being started on the Tote Road and for them to watch out for the crew and report back in case any are missing. The clerk at any intermediate point will also count the crew as it goes by their operation and will be prepared to assist the clerk at the final destination point in locating the missing ones...."

They did not always stay on the operation after they got there, either, but we will say more about this later.

At some unknown date before 1918, this office was moved to 84 Exchange Street and then to 68 Exchange Street. Connections were also made with the Golden and Wurf agencies in Boston, both engaged largely in furnishing woods labor. In 1918, the Burr operation, the two we have mentioned in Boston, and Largay's in Bangor, were taken over by the Employment Service of the U.S. Department of Labor, and were operated by it for a short time by the Eastern Lumbermen's Association, one of the quickie organizations formed at the behest of the Government during World
War I to promote the welfare of those engaged in lumbering and pulpwood production, and especially to recruit labor, which Great Northern had perforce to join. However, these employment offices were turned loose shortly after the Armistice, and the Company promptly acquired the Burr outfit, hiring Harry Burr as Superintendent. Branch offices were opened in Greenville and Houlton, and arrangements were made with the Golden and Finn agencies in Boston, Largay's in Bangor and others in Portland, New York, Philadelphia and elsewhere, to meet the demand for woods labor, with the consumption of pulpwood increasing and the old woodsmen disappearing. An account published in the "Northern" of December 1925, says that some 40,000 hirings had been handled by the Bangor office alone during the previous ten years, and this would have been in addition to the hirings at other points and directly on the various operations.

Some time between 1925 and 1927, in an unusual move, the Company established, in place of its own employment office, the "Bangor Free Labor Agency". The quarters at 68 Exchange Street were refurbished in 1927 and extended into the adjoining building to provide a waiting room for 50 men, complete with washrooms, reading matter, writing desks, free stationery and brass cuspidors. Harry Burr wrote of it in the December 1927 "Northern":

"The rest rooms and the employment services are supported and conducted by the Great Northern Paper Company. They are free to the public. Here employers of labor may find help without charge, and working men may secure positions free."
A branch, with similar facilities, was opened at 88 Middle Street, Portland, and was known as the "Portland Free Labor Agency". We believe that these operations were casualties of the Fred Gilbert resignation in 1929, and the Portland branch, to the best of our knowledge, was not reopened. The one at Bangor was, but as a Great Northern employment office, but this may not have been until after the depression. It was at 100 Exchange Street, under Leo Thibodeau, in 1951, but was closed for good in 1962, and what remained of its functions were carried on from the main Bangor office until that too was closed.

It would appear from the foregoing that the Bangor office organization had pretty well jelled by the time of World War I, and that except for the transfer of the Accounting Department to Millinocket and the establishment of the Purchased Wood Department, it was just about in that form, with augmented personnel, in 1951.

We have been told by a number of the old-timers that Garret Schenck was not in favor of the Company cutting its own wood in the early years, preferring to buy from contractors, and the statement has been made that the cut was contracted to a few men, who ran large operations, until about 1911, when the large contracts gave way to operations conducted by the Company, and that this situation prevailed until about 1938, when contractors came back into favor. It does not seem to have been that simple.

Except for the first few, as far as we can make out, there have always been both Company and contract operations, but such information as we have is subject to interpretation, and our inter-
pretation may not be correct, as we will explain later. However, in a very general way, it appears that there was a large preponderance of contract operations until 1911, a period running heavily to Company operations between 1911 and about 1922, another swing to contractors, some with very large jobs, between 1922 and 1932, a return to Company operations during the depression years and up to the late 1930's, and then another trend toward a mixture of Company and contract jobs, with a difference.

The old-time contractors had been independent, although many of them were probably financed to some extent by the Company through advances. There was some kind of bonus arrangement with them, starting in 1913 - 1914, but we do not know how it worked. The last figures we have on it are for 1926 - 1927, when only one received a bonus. After the depression, they were more dependent upon the Company for funds, and were under closer supervision. The Social Security and Wage-Hour laws passed in the latter part of the decade of the 1930's posed some problems with the contractor system, but the price controls and other regulations of World War II, and the difficulties with Canadian labor at that time, along with the establishment of the Federal Income Tax withholding program in 1942 really made difficulties, as, after considerable legal wrangling, it was determined that the Company was exercising sufficient control over its supposedly independent contractors to make it liable for their compliance with the labor and tax laws, which many of them were administering improperly, or ignoring altogether. To clean up this mess, William A. Whitcomb issued orders on April 2, 1943 "to accept the employees of all contractors operating on Great Northern Paper Company lands or under Great Northern Paper Company permits
as direct employees of the Great Northern Paper Company, thereby incurring liability for Social Security Taxes, Unemployment Taxes, Victory Taxes and Workmen's Compensation Insurance....". The contractors were put on the Company payroll at nominal salaries which became part of the cost of the job, and their contracts were written on a so-called profit sharing basis. To keep track of things, Company clerks were put in the contractors' camps. This made the contractors' employees Great Northern employees, and it became possible to enforce compliance. On June 13, 1944, Rod Farnham wrote to Leslie Kewer, at the request of Sheldon Wardwell:

"You will recall that originally Great Northern's independent contractors were such in fact, but that as time went on Great Northern gave assistance to the contractors and took over so much supervision of the work being done that the independent relationship ceased to exist, either in whole or in part, and it was for this reason and to clarify the situation that about a year ago we put them all on the same basis; that is, we have now no independent contractors and employ only our own men."

This sounds as if everything was working smoothly under the new rules, but it was not. There were contractors who did not want to be Company employees; there were contracts with people not working on Company land or Company permits who were in an ambiguous position, and as time went on, all kinds of reasons began to be found as to why some operator should be considered as being entirely independent and there were questions about the status of contract truckers, all of which begat a lot of internal
and legal argument and a lot of wrangling with Government agencies, which were even more complicated than some of those described in other parts of our story. In a general way, though, operations in 1951 were technically all Company operations. We believe, however, that shortly after this, we think while the Korean war controls were still on, the so-called Contract Logging Services arrangement was worked out, restoring the independent contractor, who, while he received advances of money from the Company, is not under direct supervision, hires his own labor, employs his own clerical people, and furnishes his own equipment. About the only connection the Company has with these contractors, aside from any financial arrangement, is that it inspects the operations, and its scalers measure the wood where it has purchased the stumpage, or where the operation is on an undivided ownership, which amounts to the same thing. The profit-sharing contract with Company foremen, however, was also continued with certain people until about 1969, when these men became full-time Company Superintendents, and their operations Company operations. As this is written in 1974, therefore, operated wood is again being produced just about as it was in the early days; by the Company itself, by independent contractors, and by purchase. Purchased wood, an important part of the supply; up to 30 percent or so; has of course always been bought from independent producers, often financed by the Company by advances on wood in various stages of preparation and delivery, but otherwise not under any Company control, many of them selling to more than one consumer.

While in the early years most of the wood supply was cut by independent contractors, there were Company operations also, but
we have found no reliable information on general up-river supervision. The whole thing is most confusing. The men in charge of jobs conducted by the Company were Superintendents, but some long-time contractors, who were said to "work for the Company", but were never to our knowledge Company employees, were also called Superintendents in some records. The early account of the Bangor office, taken from The Northern, says that Frank Thatcher was Assistant Manager until 1915, but it appears that he also had a contract and was a Superintendent of Company operations before that year. The well-known A.V. (Al) MacNeill was Great Northern's Superintendent on the North Branch drive for several years starting in 1901, but during the winters he worked as a walking boss for one of the contractors. He was Superintendent of the West Branch drive for fifteen years, but during this time he was also an independent contractor. Later, about 1918, he became the Spruce Wood Department's General Superintendent, which position he held until some time in the early 1930's, when it was abolished. Charlie Glaster was a Company woods clerk, then an independent contractor, then Superintendent in the Millinocket area. We have found little to indicate that there were so-called Area Superintendents in the earlier years, but we know that there was at least one, Max Hilton, who had charge of all the operations on the Kennebec by the 1920's, and later of those on both the Kennebec and the North Branch. There was a Superintendent at each of the large farms, but there was also a Superintendent of Farms and Storehouses, a Mechanical Superintendent, and others in charge of Toting, Motor Vehicles and other activities, some of these positions being established before 1920, some quite a lot later. Company Superintendents became independent contractors; independent contractors became Company Superintendents, and who was
who when is often just a guess. Obviously we are not going to be able to very definite about the Spruce Wood Department's up-river organization over the years.

To give meaning to the development of what we have called the Spruce Wood Department's plant, we should know where the wood came from, and as the major part of this development took place in the period before 1920, as far as the West Branch and the Kennebec were concerned, we will do our best to locate the areas where operations were conducted up to that time, from such information as is available. This will perhaps be of little interest to many, but it seems necessary.

Garret Schenck's predilection for contract wood in the early years was probably at least partly due to the Company's financial condition at that time. It was not in position to spend the money to set up to run large operations of its own, and as we have said, up to about 1911 the bulk of the wood for the mills on the Penobscot was cut by contractors. These men were independent operators, who had their own equipment, their own oxen and horses, and a following of labor. They furnished their own supplies, employed their own clerks and kept their own records. If they had large operations, they usually hired sub-contractors, or "jobbers", and the jobbers in turn might hire sub-jobbers. The contract included hauling -- that is, getting the wood to driveable water, and perhaps more often than not driving it to some point. We are not sure why some operations were conducted by the Company itself during this period, but it may have been from necessity. Reference to the table in the chapter on the Penobscot "as it was" shows that in 1899 about 134,000,000 feet of logs were driven into the booms.
above Bangor, and in 1909 nearly the same amount. By that time some 160,000 cords, or another 80,000,000 feet or so, was being cut on the West Branch for Great Northern alone, and while adding the two figures is over-simplifying, it indicates a total cut which was back to near the record levels of the 1870's. The Canadian contractors did not begin to come in for a few years, and perhaps the local men were not prepared to handle all this increased volume. This is just guesswork, of course. Although after 1909 the cut of sawlogs declined, which should have made more contractors available, it is easier to see why the Company chose to get into more operating of its own. It was beginning to make earnings and there was more money to work with; mass purchasing and a coordinated distribution system for supplies and equipment were more efficient; better control of what was done on the operations was desirable; elimination of contractor profit reduced cost, in theory, anyway, and besides, as we have said, Great Northern was always a great do-it-yourselfer, at least after the arrival of William A. Whitcomb, who perhaps had something to do with it. Later on, however, the policy in regard to use of contractors was pretty much determined by circumstances; the amount of wood to be cut; the locations where cutting was to be done; the availability of responsible contractors with a labor following, and how hungry they were for a job, how far they could finance themselves, and so on. Incidentally, the association of some of the long-term contractors with the Company was very close. They were almost part of the family -- some of them were, in fact. Later on, we will go into a few of the more interesting operations.
We will say here again what we have said in other words earlier, that in reading this chapter of our story it should be kept in mind that we are dealing with a very large area in which a great many people did a great many things over a great many years, under conditions that changed, sometimes slowly, sometimes quickly; and that while there is probably no part of the Company's activities about which there is so much information, there is also no part of them about which this information has so little continuity, or is so hard to relate to time or to other events, and we have simply had to ignore a lot of it, make our own guesses as to its meaning, or depend upon memory. We will therefore be less accurate than in other places -- which is not to say that everything we have written is all that accurate, so much of the old information requiring interpretation with little to go on but imagination. So if you become confused, join the club!

It is the general impression that the first wood for the Millinocket mill was cut in the South Branch area, and an operation was started there, perhaps on Prentiss, which was owned by the Company, in October, 1899. This operation is said to have been under the supervision of Charles Mullen, with Bert Burr in charge. Supplies and equipment were brought from Greenville to Jackman over the Canadian Pacific, and from there over a tote road to the job. We even have the names of a dozen or so of the men who were on this operation, and the cost of it -- about $15,000 -- but not the amount of wood cut. Charles Mullen was of course in overall charge of wood procurement for the Company in this first year, and this may be why this job was "under his supervision", but it may also be that he had a contract, another example of the
dual role of some of the early personalities connected with the Spruce Wood Department. We know that he contracted to cut wood for the Company for a number of years immediately after this, but he had then severed his official connection with the organization. Anyway, while this may have been the first job to get going, we have a record that indicates that in the 1899-1900 season there were no less than eleven cutting operations for Millinocket, all the way along the river from the North and South Branches to Ripogenus, producing a total of 42,000 peeled cords -- not peeled wood, but scale on a peeled cord basis -- which perhaps by coincidence is just about the amount that we have estimated to have been in the first log pile made at Millinocket in 1900. It is curious, however, that this record does not show either Mullen or Burr on the South Branch in 1899-1900, just one of the frustrating kinds of things that we run into in Spruce Wood Department records. In this same season, there were three operations on the Kennebec for Madison.

Starting with this, although it involves some detail, we will follow the increasing scope of the woods operations, and where they were located, as this will help to explain the problem of logistics, the growth of the Company's system for supplying the operations, as well as we can trace it, and the reason for other developments that we have mentioned or will mention. We will do this by three-year periods, to condense a little. As the operations were scattered all the way along the West Branch and at various places on waters tributary to the Kennebec, we cannot say that they were in such and such a general area, but will have to be more specific. On the other hand, the locations cannot be pin-
pointed, and we can give them only as they appear in the record available to us. Some of the locations which have names are in numbered townships, also listed. In these cases there were operations both at the place named and at one or more other places on the same town. We will just start off without more ado, operations for the Penobscot mills first.

<table>
<thead>
<tr>
<th>SEASON</th>
<th>PEELED CORDS OPERATED (RIVER)</th>
<th>LOCATION OF OPERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1899-1900</td>
<td>41,965</td>
<td>North Branch, South Branch, Elm Stream</td>
</tr>
<tr>
<td>1902-1903</td>
<td>77,946</td>
<td></td>
</tr>
<tr>
<td>1903-1904</td>
<td>102,300</td>
<td></td>
</tr>
<tr>
<td>1904-1905</td>
<td>83,105</td>
<td></td>
</tr>
</tbody>
</table>

There were only seven contractors in 1899-1900, of whom three had more than one operation. Up through the 1903-1904 season, most of them were the old-time lumbermen, probably cutting small stuff for pulp along with sawlogs; men like the famous John Ross, Charley McLeod; Jim McNulty, (Fred Gilbert's old partner);
Ike Terrill, A.B. Smith, Con Murphy, Jim Smart, John Kelley; one of the five Ranneys, probably George; Charley Gilbert, Fred's brother; Gray, Spencer, Sawyer, McPherson, Rice, and some others. Some small operations appear to have been carried on in the first year or two by Millinocket business men like Weymouth and Kimball around Millinocket Lake (T1 R.9), Quakish Lake, South Twin and Hurd Pond (T2 R.10). Charles Mullen's name does not appear in the list we have, although we know he was operating, the indication being that he was in partnership with McNulty. The largest operations were McLeod's on the North Branch, running between 12,000 and 20,000 cords per season.

1905-1906  78,080  North Branch, Prentiss, Ragged Lake,
1906-1907  97,374  Russell Stream, Pittston, Burbank,

It will be noted that there were no operations on the South Branch in this period. New operators began to appear in the 1903-1904 season, and by the time of the 1907-1908 cut there was a new group of contractors, with only two of the above old names being listed, although this was not their last season. The names of some of the newer men -- new only in the sense that they appear in the record for the first time -- Cathcart, Newton, Burr, Estes, Gero
and Morrison in particular, were around for quite a few years, along with Charley Gilbert, Smart, Ranney and a few of the other old lumbermen. The T.A. R.7 operations in 1907-1908 were right around the new mill at Burnt Land Rips, and the larger cut reflected the needs of this plant. It will be noted that elsewhere the operations were moving north away from the main river, up into Ranges 4 and 5 on both sides of Chesuncook Lake.

McLeod, McNulty and one or two others, in their earliest operations, used labor entirely from the province of Quebec, and Great Northern itself used some Quebec labor in some of the few operations it conducted in the early years, but we do not find what we suppose, going entirely by the names, were French-Canadian contractors, who brought their own labor with them, until the season of 1903-1904, when there were two, Belanger and Roberge, on the North Branch. In the 1907-1908 season there appear to have been at least five -- Roberge, Morin, Rancourt, Mercier and Pageau, all on the North Branch. By the season of 1907-1908 the number of operations had grown to thirty-six, and the number of contractors to twenty-nine. Thereafter, these numbers declined, and operations were larger.

<table>
<thead>
<tr>
<th>SEASON</th>
<th>OPERATED</th>
<th>PURCHASED</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1908-1909</td>
<td>162-344</td>
<td></td>
<td>162,344</td>
</tr>
<tr>
<td>1909-1910</td>
<td>119,877</td>
<td>44,552</td>
<td>154,429</td>
</tr>
<tr>
<td>T.1 R.8, T.1 R.10, T.1 R.12, T.2 R.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1910-1911</td>
<td>134,396</td>
<td>3,269</td>
<td>142,665</td>
</tr>
</tbody>
</table>
In the 1909-1910 season, operations on the North Branch, which had been very heavy from the beginning, began to be reduced, and it will be noted that in general the cutting had shifted somewhat to the south. William Hilton told the writer that no great amount of wood was shipped to the mills by rail until after the Fish River Railroad, the western branch of the Bangor & Aroostook, from Oakfield to Fort Kent, was built in 1903, and the 1909-1910 season records the first railroad wood for the Penobscot mills, some 44,000 cords, which we have included just to have a record of the total cut, although of course none of it came from the places we have listed. This was perhaps a reason for the pull-back from operations in the more northerly towns, and a substantial reduction in operations on the river. We have no information as to why there was this sudden large amount of railroad wood, nor exactly where it came from, although it was almost surely from Aroostook County, was of course in four-foot lengths, and was no doubt purchased, as no operations are recorded in connection with it. Facilities at the mills were inadequate to handle large amounts of car wood at this time however; much of it was probably held over, and the 1910-1911 season shows only about 8,000 cords of rail wood.

| Year    | North Branch | South Branch | Ragged Lake | Caribou Lake | Penobscot | Brook | Boydtown | Cuxabexis | Film Stream | Farrar Brook | West Hopkins | Seboomook | Pittston | Hammond | Soldiertown | T.A. R.7 | T.1.R.10 | T.1 R.12 | T.2 R.9 |
|---------|--------------|--------------|-------------|--------------|-----------|-------|----------|-----------|-------------|--------------|--------------|-----------|----------|---------|----------|----------|---------|----------|---------|---------|
| 1911-1912 | 84,043       | 78,417       | 162,460     |              |           |       |          |           |             |              |              |           |          |         |          |         |         |         |         |
| 1912-1913 | 99,404       | 37,887       | 137,291     |              |           |       |          |           |             |              |              |           |          |         |          |         |         |         |         |
| 1913-1914 | 119,136      | 24,769       | 143,905     |              |           |       |          |           |             |              |              |           |          |         |          |         |         |         |         |
Large amounts of railroad wood were purchased in the first two years of this period, and operations on the West Branch declined accordingly. It will be recalled that in 1913 the stackers at the Millinocket Mill were extended and conveyors were rearranged to handle more wood from cars. By the 1913-1914 season, however, rail wood was reduced, and the cut on the West Branch picked up and moved more to the north again. We have not looked for an explanation for these gyrations. The operations conducted by Gilbert and Burr continued to be substantial, but in this season the Quebec contingent on the North Branch disappeared, temporarily.

It is the general impression that the supply of pulpwood for the Penobscot mills, and for Madison, for that matter, was all in the form of logs until 1917, but this is not the case, as we have seen that short rail wood was being cut in the 1909-1910 season. The "Pittston Farm Weekly" of February 6, 1964 contains the statement:

"The first 4-foot wood cut by the Great Northern Paper Company was cut by Charley Gilbert during the winter of 1912 and 1913 on Township 1 Range 10 in the vicinity of Norcross."

This does not seem to be correct, either. The late Lloyd Houghton told the writer that he was on the Mt. Abram operation in
1908-1909 -- this was a Company job -- and that short wood was cut at that time and driven down the Carrabassett for the Madison mill. We have also noted that in the original Millinocket mill construction a conveyor and saw had been put in for four-foot wood, and we have copy of a contract made with James F. Kimball of Medway in December, 1902, for four-foot pulpwood. This seems to confirm that logs for pulp were being cut along with saw logs, as it reads in part:

"Kimball is operating for spruce in the vicinity of the Millinocket mill. The Company agrees to purchase of Kimball all spruce logs seven inches at the top and twenty-four feet long, and all spruce wood four feet in length, the whole not to exceed three million feet....

Kimball agrees to deliver said logs and said wood in the mill yard of the Company. The Company agrees to pay Kimball....the following prices: Four dollars and seventy-five cents ($4.75) per cord for the four foot wood; Ten dollars and seventy-five cents ($10.75) per thousand feet for logs.....

It is agreed that a pile of four foot wood 8 feet long, 4 feet wide, 4 feet 4 inches high, as closely piled as possible shall constitute a cord under this agreement."

In October, 1911, Everett Amey wrote to Wentworth Peckham, vaguely outlining schemes for check-scaling four foot wood, which was being cut at that time, noting the differences between scaling stump and yarded wood. This letter was primarily concerned with inspection for waste in tops and butts, but it points out the fact that at that time there were several different standards for a cord.
The Kimball contract was for a "long cord", 8 ft. long and 4 feet 4 inches high, and we quote from Everett Amey's letter:

"In scaling the wood you will get from the scaler or foreman the size of a cord in the operation. This varies with the locality. On the Kennebec the Company scales a cord 8' long x 4' deep x 4'4" high. On the Town 1 Range 10 operation a cord has to be 5' high. I imagine that the 5' figure will hold on Farrar Town but you had better inquire.... When you scale a pile of wood for your figures, don't let anyone know what you make it, as the scaler's figures may not agree with yours, and if the men hear your figures they would be liable to tell the scaler that you made a pile such and such an amount, thus creating friction."

It will be noted that this letter mentions 4-foot operations on T.1 R.10 a year before the Gilbert operation of 1912-1913.

In the 1913-1914 season Fred Gilbert decided to run test operations to determine the relative cost of cutting logs vs. four-foot wood. Seventeen thousand cords of short wood were cut by Charley Gilbert from seven camps on T.1 R.10 and T.2 R.11, landed on Pemadumcook, Passamagamoc and Debsconneag; and a like amount, 8,700,000 f.b.m. of logs, was cut on a Company operation under W.J. Curran, also with seven camps, on T.3 R.10, T.4 R.10, and T.5 R.11, landed on Sourdnahunk Lake and Sourdnahunk Stream. The detailed figures of cost do not convert the log scale into cords, but using the rule of thumb of two cords to a thousand feet, the short wood cost about $5.00 a cord landed, and the logs $6.43, an
advantage of $1.43 in favor of the short wood, which would of course also been easier to drive and cheaper to handle at the mill. There were a few other small four-foot jobs in this season also, further up-river. It seems fair to assume from all this that some four-foot wood was being delivered to the mills from local operations and by rail from the beginning; that the Company was cutting and driving some short wood as early as 1908, and that there was four-foot wood in some amount in the West Branch drive at least as early as 1912.

1914-1915 156,720 19,198 175,918 Hammond, Doletown, Soldiertown,
1915-1916 187,231 60,879 248,110 Alder Brook, Burbank, Pittston,
1916-1917 181,293 21,610 202,903 Seboomook, Boydtown, Indian #3,

Except for some locations which we will mention later, the West Branch operating area, all along both sides of the river, and now more extensively north again into Ranges 5 and 6, was pretty well established by the 1916-1917 season. There were several different operations on many of these towns, most running for a number
of years, as of course had almost always been the case. The increasing cut reflects the jump in paper production from the installation of Nos. 9 and 10 machines at Millinocket and the speeding up of other machines at both the Penobscot mills. Many contractors had come and gone since 1899. It would not be possible, within the scope of this story, to keep track of them. Some of the early men; Bert Burr, A.B. Smith, Ike Terrill, Charley Gilbert and Jim Smart, for instance, were still active in this period, but the names of most of the others who had cut in the intervening years were gone from the list. The number of operations had increased somewhat with the larger cuts, and there were some relatively newer contractors like Sutherland & Hodgkins. Of the older men, Burr and Gilbert consistently had large jobs -- 20,000 cords or so, and some of the old-timers claim that the latter received preferential treatment in the way of better contract terms than others, which if true is interesting, in light of the later developments we have noted, but it is hearsay.

While we have defined the West Branch operating area sufficiently by this time, for the purpose we have in mind, and it can be followed by anyone with a map showing the townships, we will carry the tabulation three more years, because some of the things we will discuss in connection with the development of the Company's supply and transport system were done in this period, and because it marks the opening of operations on what were then called the "Railroad Lands" along the Bangor & Aroostook Railroad in Aroostook County. For this latter reason, we will use a different format.
<table>
<thead>
<tr>
<th>Felled Cords</th>
<th>1917-1918</th>
<th>1918-1919</th>
<th>1919-1920</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operated River Wood</td>
<td>260,744</td>
<td>244,011</td>
<td>167,366</td>
</tr>
<tr>
<td>Operated Railroad Wood</td>
<td>8,882</td>
<td>3,234</td>
<td>22,324</td>
</tr>
<tr>
<td>Purchased Railroad Wood</td>
<td>25,380</td>
<td>10,374</td>
<td>8,828</td>
</tr>
<tr>
<td>TOTAL</td>
<td>295,008</td>
<td>257,619</td>
<td>198,518</td>
</tr>
</tbody>
</table>

**LOCATIONS**


Of the new operations on the Railroad Lands, Smyrna, B, C and D R.2 and Dyer Brook, none were significant except the last, conducted in the 1919-1920 season. French-Canadian contractors; Roberge, Belanger, Morin, Paquet and Derappe were back in the area near the Quebec border in the seasons of 1917-1918 and 1918-1919, but not in the next season, in which the West Branch cut was reduced. Individual contract operations got very much larger during this last three-year period. Charley Gilbert getting up to over 50,000 cords in each of two seasons; and there were a number of new men, notably Glaster, Brann, and Edgerly, with large operations, in the vicinity of 30,000 cords each year, starting in 1917-1918.

The record on the places from which wood was harvested in these first twenty years is clear, but while there are plenty of names, we cannot be sure which represent Company and which con-
tract operations. Even in later times, contemporary information found in The Northern magazine and other places is impossible to relate to a Company job or a contract, so closely were they bound together in the scheme of things. The record of which we speak runs from the season of 1899-1900 -- that is, from the start of cutting in the fall of the first year to the end of hauling in the spring of the next -- through 1934-1935. In this, we find some operations identified with a name; "Terrill - T.3, R.14" for example; others show only a place name and township; like "Cuxabexis - T.4, R.11-12". Only one of the hundreds of jobs is specifically identified as being "G.N.P. Co.". However, in the absence of any guideline, we have made the general assumption that the name of a person signified that he had a contract, for the purposes of this discussion, and with this caveat, we are reasonably sure that the names we have used as those of contractors, and that the conclusion we have reached in regard to the cycles of Company and contractor dominated production is somewhere in the ballpark. We have reason to doubt some of the other information in this record, but it was not made up out of thin air; it is the only thing of its kind available, and we have no choice but to use it as judiciously as possible.

Full-scale cutting of four-foot wood began on the West Branch in the season of 1917-1918. While it is generally agreed that 1917 saw the last drive of long-log pulpwood, there are indications that the end was not that abrupt. In the fall of 1917, specific instructions, signed by William A. Whitcomb, Bryan Seelye and R.H. Robertson were issued on the conversion of long log scale into cords. Logs were to be scaled "for board measure 1000 ft." on the
landings. We believe that what was variously known as the Maine, Bangor or Holland rule was used. One thousand f.b.m. was to be equivalent to 2-1/4 cords rough, or, with 15 percent allowance for bark, 1.9125 peeled cords of 128 cu. ft. On the river, four-foot wood was to be scaled when landed, a rough cord being 138-2/3 cu. ft.; a pile 8 ft. long and 4 ft. 4 in. high; which was delivered to the mills on the basis of a rough cord so measured being equal to .9208 peeled cords of 128 cu. ft. Rail wood was bought peeled, in long cords (138-2/3 cu. ft. to the cord). This was scaled at the mill and converted, the long cord becoming 1.0833 peeled cords of 128 cu. ft. The date of this bulletin would indicate that pulpwood as logs was still being cut at least in the season of 1917-1918 in some amount, so that some would have been driven in 1918, and perhaps a little later, but not much.

Before we go further, perhaps we should look at where the wood for the Madison mill came from in this first twenty years, and we will do this as briefly as possible.

On the premise that if the record we have shows only a location and not a name the operation was conducted by the Company, all the wood for the Madison mill, except that which was purchased, was from Company operations through the season of 1914-1915. On a number of towns, there were operations every season for many years starting in the fall of 1899 -- on Spaulding for nine years, on Holeb for twelve, and on Pierce Pond for seven. Beginning in the fall of 1900, there were cuts on Forsythe every year but one for fifteen years. On Fast Moxie, cutting started in 1902, and was continued for seven years, and on Lowelltown there were operations for eight years in a row. These operations were all on the Kennebec
or Moose Rivers. In 1904-1905 there was an operation on Spencer Bay, and in 1904-1905 and the following season there was cutting on Burbank. In 1905-1906, cutting started on Crockertown on the Carabassett and continued for six years, spreading over into Jerusalem in 1908-1909, and onto Mt. Abram in that season and the next. Beginning in 1911-1912, Alder Stream and Tomhegan were cut for four years, and there was an operation for Madison on Seboomook in the 1912-1913 season. In 1914-1915 only 2,348 cords of river wood were cut from two small operations, one on Forsythe and one on Little W.

This activity on the Kennebec, incidentally, as we learn from "Dead River Company, 1907-1972, by Curtis M. Hutchins and Russell H. Peters (Knowlton & McLeary Co., Farmington, 1973) led directly to the formation of the Dead River Company, another Maine institution. In 1904, Great Northern had begun to buy coal from William C. Atwater Company, a New York wholesaler, of which Charles P. Hutchins of Boston was Treasurer, a minority stockholder and New England Sales Representative. The Company, in those early years, was always short of cash, as we have seen, and was paying some of its bills, including those for coal, with notes, but it had to have wood. Garrett Schenck had his eye on some land in the town of Jerusalem, but not being in position to buy it, suggested to Charles Hutchins that he and William Atwater do so, and sell the stumpage to the Company. The result was the formation in 1908 of the Carrabassett Timberland Co., which purchased the northern and southeastern part of Jerusalem, from which Great Northern cut the wood. This deal must have been immediately profitable, as in 1909 they bought the southwest 1/4 of the same Spruce Wood - 46
town, and when Garret Schenck pointed out another desirable piece of land they formed the Dead River Timberland Co., in 1909 to buy Alder Stream Township (T2 R.5) under a similar stumpage purchase agreement with Great Northern. This also worked out well, and Dead River went on from there, moving out of Great Northern territory. Curtis Hutchins, Chairman of the Board of Dead River Company, who we have mentioned several times, was Charles P. Hutchins' son, and the Sugarloaf Mountain ski resort sits on the original Carrabassett purchase.

The amount of wood cut each year up to 1913 ran in general between 18,000 and 23,000 cords, although only 12,000 cords were harvested in 1902-1903, and 1908-1909 operations went up to 55,000 cords. During the four seasons starting in the fall of 1913, it looks as if a policy of cutting every other year was followed. About 30,000 cords were cut in 1913-1914, followed by only 2,348 cords the next year; another big cut of about 55,000 cords in 1915-1916 and only 3,838 cords in 1916-1917. The first railroad wood for the Madison mill, 2,887 cords, was cut in the 1913-1914 season. The next year there was nearly 5,000 cords of it. In 1915-1916 almost 20,000 cords of car wood was purchased, on top of the big cut on the river, bringing the total for that season to about 75,000 cords, as a result of which only a few hundred cords were bought and the cut on the river was very small in the next season. In the big year of 1915-1916 the name of a contractor -- Rancourt, who had been operating on the North Branch -- appears, with a small operation on Holeb, and the little cut of the following year was made by two contractors. In the three-year period from 1917-1918 to 1919-1920, river wood was obtained from Spruce Wood - 47
Company operations on Little W., Tomhegan, Alder Stream and Forsythe. The pattern of the big production in one year and small production the next was continued, about 18,000 cords being cut in 1917-1918; only 3,800 in 1918-1919, and around 15,000 cords in 1919-1920, but over half the supply was purchased railroad wood; about 43,000 cords in these three seasons. The whole supply for the Madison mill each year amounted to little more than a couple of the fair-sized operations on the West Branch, and we will not discuss the Kennebec situation any further at this time.

While the Company's timberland holdings had increased from the original 250,000 acres to a little over 1,000,000 acres by 1920, by no means had all of its wood been cut from its own lands. This was partly by plan, but in any event much of the ownership was undivided, so that to cut on it the stumpage of the other interest or interests had to be purchased. There were also tracts owned by others within the area where operations were being carried on from which stumpage could be bought to enlarge the scope of operations so that they could be carried on over longer periods without jumping from one place to another. As a result, more was cut on permits than from Great Northern land. Of the wood delivered in 1900, over 56 percent was from purchased stumpage, and purchased stumpage supplied between 35 and 50 percent of the total cut of operated wood through 1908. In one year, 1909, for some reason, nearly all the wood deliveries were from Company land, but from that point through the 1916-1917 season a little less than 30 percent, quite consistently, was from Great Northern holdings. In the last three years of the period under consideration, receipts of wood cut from Company land averaged about 45 percent of the total. The percentages are for the wood for all the mills, and
we emphasize that they are for wood delivered, not wood cut. Also, this information is from a statement "Pulpwood Delivered to all mills from Company and Permitted Lands", prepared in the 1930's, and we would assume that it did not include purchased wood, little if any of which would have been cut from Company land, so that the actual percentage of total supply taken from Great Northern holdings was probably somewhat less. All of this is not very important. Buying stumpage is as old as lumbering, and will likely go on as long as trees grow, but it does serve to make the point that the Company bought timberland at least as much for protection for the future as for immediate supply.

It might be of interest to note that the prices paid for stumpage rose steadily from the very early days, and we have some information on this. The figures are the average for the year, on the Penobscot watershed, for spruce and fir. Incidentally, it has been said that only spruce was taken for pulpwood "in the old days", and this is correct, but as best we can determine, the old days lasted only a few years, and fir began to be cut along with the spruce in some places perhaps as early as 1903 or 1904. We have some information on average stumpage prices; and for the purposes of the following tabulation, we will use only figures to show the trend, and will bring them up to the time this is written. They are very interesting.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>SPRUCE &amp; FIR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PER ROUGH CORD</td>
</tr>
<tr>
<td>1901</td>
<td>$ 1.076</td>
</tr>
<tr>
<td>1903</td>
<td>1.440</td>
</tr>
<tr>
<td>1906</td>
<td>1.682</td>
</tr>
<tr>
<td>1909</td>
<td>2.070</td>
</tr>
<tr>
<td>1912</td>
<td>2.115</td>
</tr>
</tbody>
</table>

Converted from F.B.M. measurement to a cord basis.
We have no figures for the 1930's but from memory, which this time we are quite sure is correct, the Company bought stumpage at figures as low as $1.50 a rough cord at the bottom of the depression. There are some figures for the next twenty years, as they come rather slowly back.

<table>
<thead>
<tr>
<th>Year</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td>4.16</td>
</tr>
<tr>
<td>1931</td>
<td></td>
</tr>
<tr>
<td>1932</td>
<td></td>
</tr>
<tr>
<td>1933</td>
<td></td>
</tr>
<tr>
<td>1934</td>
<td></td>
</tr>
<tr>
<td>1935</td>
<td></td>
</tr>
<tr>
<td>1936</td>
<td></td>
</tr>
<tr>
<td>1937</td>
<td></td>
</tr>
<tr>
<td>1938</td>
<td></td>
</tr>
<tr>
<td>1939</td>
<td></td>
</tr>
<tr>
<td>1940</td>
<td></td>
</tr>
<tr>
<td>1941</td>
<td>2.25</td>
</tr>
<tr>
<td>1942</td>
<td>2.50</td>
</tr>
<tr>
<td>1943</td>
<td>2.50 - 4.00</td>
</tr>
<tr>
<td>1944</td>
<td></td>
</tr>
<tr>
<td>1945</td>
<td>4.00</td>
</tr>
<tr>
<td>1946</td>
<td></td>
</tr>
<tr>
<td>1947</td>
<td>5.00 - 6.00</td>
</tr>
<tr>
<td>1948</td>
<td></td>
</tr>
<tr>
<td>1949</td>
<td></td>
</tr>
<tr>
<td>1950</td>
<td></td>
</tr>
<tr>
<td>1951</td>
<td></td>
</tr>
<tr>
<td>1952</td>
<td></td>
</tr>
<tr>
<td>1953</td>
<td></td>
</tr>
<tr>
<td>1954</td>
<td></td>
</tr>
<tr>
<td>1955</td>
<td></td>
</tr>
<tr>
<td>1956</td>
<td></td>
</tr>
<tr>
<td>1957</td>
<td></td>
</tr>
<tr>
<td>1958</td>
<td></td>
</tr>
<tr>
<td>1959</td>
<td></td>
</tr>
<tr>
<td>1960</td>
<td></td>
</tr>
<tr>
<td>1961</td>
<td></td>
</tr>
<tr>
<td>1962</td>
<td></td>
</tr>
<tr>
<td>1963</td>
<td></td>
</tr>
<tr>
<td>1964</td>
<td></td>
</tr>
<tr>
<td>1965</td>
<td></td>
</tr>
<tr>
<td>1966</td>
<td></td>
</tr>
<tr>
<td>1967</td>
<td></td>
</tr>
<tr>
<td>1968</td>
<td></td>
</tr>
<tr>
<td>1969</td>
<td>6.00 - 7.00</td>
</tr>
<tr>
<td>1970</td>
<td></td>
</tr>
<tr>
<td>1971</td>
<td></td>
</tr>
<tr>
<td>1972</td>
<td>6.50 - 8.00</td>
</tr>
<tr>
<td>1973</td>
<td></td>
</tr>
<tr>
<td>1974</td>
<td>8.00 - 10.00</td>
</tr>
</tbody>
</table>

There were at least two recessions in the next decade, and stumpage price remained at the 1954 level until some time after 1964, when it took off, along with everything else.

The Company sold stumpage from its lands too, for the same reasons that it bought from others, but we have as usual wandered away from the path on which we started, so let us get back on the track.
The developments to facilitate the harvesting of wood on the West Branch, which we will examine as best we can, were almost entirely for the purpose of supplying the operations with men and material, primarily the latter, and for the maintenance of equipment. All the country we have indicated as being the scene of its early operations had of course been cut by the lumbermen, acting more or less independently of each other, for some seventy years, during which time their methods of getting their supplies and equipment into the woods had changed very little. While many of them operated in one area for a long time, they did move from one place to another. They had "opened up" the country with tote roads, but except for driving dams, they had made little investment in anything of permanence. The Great Northern Paper Company intended to be on the West Branch for a very long time, and it was going to do things somewhat differently.

In order to understand the desirability of an improved system of service and supply, we should know something about what had to go into an operation, and this is where we have to fall back on some half-educated guesswork.

At an earlier point in our story, we said that in many respects woods operations of 1917 were little different from those of the time when Maine became a State. We used the year 1917 because the shift from logs to four-foot pulpwood became general around that time, and that was a sort of landmark, but we are going to stick our editorial neck out further, and say that there was really not much difference in the essentials of rough wood winter operations until the late 1930's. This is like saying that there is no basic difference between the automobiles of the 1920's and
those of the 1970's because both have four wheels, a gasoline engine up front, a transmission, a differential and brakes, and that is exactly what we mean. Sharp tools, powered only by strong arms felled the trees and made them into logs or bolts in the 1930's even as they did in the 1820's; final access to the camps was still by tote road; the crews in general remained in the camps through the cutting and hauling season, which started some time in the fall and ended around the middle of March; most camp buildings were still constructed of logs cut on the spot; they were heated by wood stoves and lighted by kerosene lamps, which were only improvements on the open wood fires of the 1820's; the oxen of those early years had mostly been replaced by horses by 1899, but horses were still draft animals, and despite the advent of trucks for toting and tractors for moving wood long distances, there were plenty of horse-hauled operations; wood still had to be transported to the main roads by horses -- there were probably more of them in the woods in 1939 than there had been forty years before; and snow was still a necessity for hauling. It is not our intention, however, to make comparisons with the early days of the 19th century. Our point is that for over one hundred years the way things were done changed slowly in the Maine woods, and the changes were largely in detail, so that while a West Branch operation in 1939 was not just like one in the early 1900's, there were a great many similarities. It had to have, as far as horse-hauling operations were concerned, about the same kinds of supplies in the same quantities, and in the absence of other information we can, for our purposes, make some assumptions on the basis of the figures of the 1930's.
Let us then consider a rough wood operation of the year we have reached -- 1920 -- producing about 18,000 cords of four-foot wood, all yarded, from three camps, each of about the same size, and horse-hauling it an average of between one and two miles to water with two-horse teams. On this particular job cutting lasted eleven weeks, starting in October; although we should say that many such operations began as early as September; and hauling took about seven weeks after there was sufficient snow to make roads. We will apply figures from the 1930's empirically to this operation.

The production of a three-man crew yarding with one horse -- we will explain this operation later -- averaged about thirty cords a week, so that about 165 men and 55 horses would have been employed during this part of the job. At this particular time a five man crew with two horses might have been used, but this would not affect the numbers materially. A two-horse team, with a teamster and a helper hauled an average of 70 cords a week, which figures out to about 74 horses and the same number of men during the hauling season. In neither case do the numbers include the overhead -- supervision, cooks and cookees, clerks, feeders and so on, which we will go into at another point in our story -- extra loaders, swampers and miscellaneous labor which might add another 50 men or so; horses "standing in" or horses toting.

It is a little difficult to get at the exact weight of supplies and equipment required for this operation -- we are concerned with weight rather than with the actual items, although we will list some of these. However, as we said, we can make some reasonable guesses.
A horse consumed about 30 lbs. of hay and 17 lbs. of grain (oats) per day, but as it is impossible to arrive at actual horse days, we will fall back upon another figure indicating that food for horses during the yarding and hauling operation amounted to about 13 tons per 1000 cords, which would be 234 tons. Food supplies for the crew -- meat (beef, salt pork, fresh pork and ham); fish, salt and fresh; potatoes, dry beans, molasses, butter, vegetables (fresh cabbage and carrots; canned peas and string beans); flour, lard, sugar, eggs, canned milk, pie fillings (raisins and canned apples), along with miscellaneous other table food and cookroom requirements, amounted to about 6-1/2 tons per 1000 cords yarded and hauled, or another 117 tons. The weight of equipment is harder to arrive at. An operation had to be largely self-supporting, and this category included hundreds of items; tents, blacksmith shop equipment, stoves and cookroom equipment, which included tableware; steel bunks and bedding, lamps and lanterns, tools of all kinds, snow shovels (about 250 of them for this operation, as snow was being cleared away from around the trees and the piles had to be shovelled out); chain, cant-dogs, equipment for taking care of the horses; harness and sleds -- only a small part of the list, which included things all the way from doughnut cutters, bean pots and alarm clocks to grindstones, anvils and horse catheters. All this would run to some 125 tons. There were expendable materials and supplies -- saw blades, axes, bolts, nuts and nails, lamp chimneys and wicks, road hay, horseshoes and nails, tar paper, stove pipe, kerosene and the like, from flypaper to soap, perhaps another 40 tons. Then there was the wangan -- laxatives, liniment, razor blades, candy; buttons, needles and
thread, underwear, shirts, pants, coats, mittens, gloves, socks and hats; pipes, tobacco, cigarettes and snuff; shoes and suspenders and a lot more, even handkerchiefs, pocket knives and watches -- about 4 tons of it. This adds up to 520 tons. These particular camps might have had board roofs and floors, so there could easily have been another 80 tons or so of lumber, so let us say a total of 600 tons for this one operation, all of which had to be got into the woods one way or another. A few years before the date we have chosen, it would have been somewhat less, as little if any lumber would have been used, and there would have been no "boughten" bunks or bedding, but otherwise, even going back to 1899, when this would have been a long log operation, the difference in the number of men and horses, and in the weight of material and supplies would have been slight. A few years later, when tractors came into use along with the horses, it would have been considerably more, as not only were there special tractor supplies, and tractor fuel, but much more use was made of lumber. However, we are not now concerned with this later period.

All this stuff did not of course all go in at one time.
Assuming this to be a new operation, a few men would have been sent in to build the camps ahead of time, with tents to live in and a sufficient number of horses to haul the necessary supplies and materials, and to yard logs for the buildings. Serious toting would have begun as soon as the buildings were up and before the main crew arrived. After the operation started, toting was continuous, and if the operation were to run for more than one year, it was quite usual to leave the sleds and much other equipment, and to bring in and store non-perishable supplies in anticipation of the
next year's work, so that in the second and succeeding years the total weight to be hauled would be somewhat less.

Let us now suppose that this theoretical operation was one actually carried out on Alder Brook (T.3 R.3) on the South Branch, away back in the early days of the Company, to see how it was supplied, and we have this basic information as part of an article on the Canada Falls dam in the January, 1927 issue of The Northern:

"About 1904, when the Great Northern Paper Company opened operations on Alder Brook, John Hodgkins, who was in charge, had to bring all his supplies and equipment through Jackman by way of Sandy Bay. It was a three-day trip from Jackman to this camp, two-thirds of which was over a rough tote road. After they left Sandy Bay, wagons were out of the question; only jumper sleds could be used, and 300 pounds was a load for a two-horse team."

We believe that this operation was actually in the season of 1902-1903. When Great Northern went into the Maine woods, the Canadian Pacific Railway's line ran across the state from New Brunswick through Vanceboro, Mattawamkeag, Greenville and Jackman and on into Quebec. The Bangor & Aroostook from Old Town through Lagrange, Dover-Foxcroft and Shirley connected with it at Greenville Junction. It is likely that hay and oats were bought in Canada, as they were for a long time afterward, and came into Jackman from the west. Other supplies came up from the Bangor area to Greenville Junction by the Bangor & Aroostook, and were delivered at Jackman via the C.P.R. The brief quote refers to the fall toting. The road up the Kennebec to The Forks and Jackman continued on into Quebec, and the haul would have been by wagon
about ten miles up this highway into Sandy Bay and then, with the load transferred to jumper sleds, by the tote road across Bald Mountain and Alder Brook townships, another fifteen miles or so. A "jumper" or tote sled, incidentally, was a box ten or eleven feet long, four feet wide and sixteen or eighteen inches deep, on two sled runners, usually unshod or with renewable hardwood shoes, which could be used either on snow or on dry or frozen ground. Half-frozen slush or mud was a hazard to the horses' legs, and no toting was done while these conditions prevailed, if it could be avoided. In describing equipment, we always have the problem of identifying the period during which it was employed. Indeed it is sometimes almost impossible, because nothing changed abruptly everywhere at once, but we can say that the jumper sled was used from the beginning of the Company's operations, and, modified to be dragged by a tractor, sometimes with a trailer, or "tag sled" to carry heavier loads, until at least the late 1940's, when most camps could be reached by truck. Tote wagons like the Canada tote wagon which we will mention a little further on, could not be drawn successfully by tractors, but were in use until at least the early part of that decade.

Now let us move our 1902-1903 operation to the North Branch, say on T.4, R.18, ten or twelve miles north of the Pittston Farm. Getting supplies to this location was quite another matter. Railroad in this case would have been at Greenville Junction, and everything that went in during the fall would have gone up the lake from there by boat and scow to Northwest Carry (Seboomook Farm) -- there were a number of steamboats on Moosehead at that time -- then by tote wagon to the location of the Pittston Farm and on up to the site. There was no tote road on the west side of Moose-
head in the Company's early years, and during the winter, when the lake was frozen, it is our understanding that the base was, for operations west of the lake, shifted to Jackman, and supplies went in from Sandy Bay over the tote road across Bald Mountain and Hammond, up by Canada Falls to the Pittston Farm, and thence up the North Branch, nearly fifty miles by road, at a guess. The Jackman Lumber Company had a narrow-gauge railroad running up into Bald Mountain, but we have not been able to find that this was ever used to supply Company operations. Horse fodder, however, might have been hauled into this operation from Quebec down the valleys of Hurricane and Dole Brooks, and we are told that a little later supplies for operations further up the North Branch were shipped over into Canada in bond, moved northward over the Quebec Central, and were then hauled back across the border.

Looking back at the list of the early cuttings, we find that there were operations all along the West Branch around Chesuncook Lake to the east of Moosehead, which presented a different problem. Supplies for these, as best we can gather, were boated from Greenville to Lily Bay, where Hollingsworth & Whitney had a wharf and storehouse, part of which Great Northern rented soon after it began operations. There was a tote road from Greenville to Lily Bay, but we believe that in the winter a shorter route was across the ice of the lake. From Lily Bay there was a tote road to the Grant Farm, where it divided into three main arteries, each with a network of side roads. One of these ran westward to Northeast Carry and Seboomook, passing just south of Lobster Lake; one ran northward between Caribou and Ragged Lakes, on the West side of Chesuncook, to Chesuncook Village, and one went northeastward on
the east side of Chesuncook Lake to the Chesuncook Dam, by the west end of Harrington Lake, and joined up with the old Sourdnahunk tote road in T.4 R.10. It will be noted that in the first years the Company had operations along all these branches. In addition, Caribou and Chesuncook Lakes provided water transportation or an ice surface by which the townships along their shores could be reached, and it had operations there too. Alternate transportation to these was by a tote road from Northeast Carry down the right bank of the West Branch to Chesuncook Village, and even operations up around Chamberlain Lake were reached by either route. There was another much-used way from Bangor to the Grant Farm in the old logging days and indeed into the early part of this century -- up the Pleasant River valley through Milo, Brownville and Katahdin Iron Works, swinging westward around Third Kokadjo Pond, along the north shore of Second Kokadjo, and northeastward to the farm, but we do not believe this was used by the Company. The early cuttings further down-river, for instance around Debsconeag and Millinocket Lake, were supplied from Millinocket by the Sourdnahunk tote road, or up the Lower Lakes by boat from Norcross.

This is only a general and perhaps not very accurate statement of the conditions, arrived at from the best interpretation we can make of incomplete tote road locations shown on old maps, and other scraps of information. However, it serves to indicate that we are not magnifying the difficulties of transportation into the camps.

The old toter, whether he worked on contract for himself, or
on day wages for someone else, was not just a horse jockey. He was the link with the outside world; a very important man. He was the mail man, carried the news, and brought in little things that a man might want that he could not get from the wangan. He brought out the ill, the wounded, and sometimes the dead. The ill, incidentally, were on occasion doubtful, as evidenced by the following:

"Seboomook, Me.
July 1, 1913

Mr. P.E. Whalen
Bangor, Me.

Dear Sir:

This man Henry Cormier that was sent out from Elm Stream sick said that he was hurt by the dump cart running over him but that is not so he has been collecting several different kinds of bark and herbs and steaping them for medicine that is all that made him sick he could not have been very sick the teamster said that as soon as he was out of sight of the camp that he was up on the seat and rod there until he got out to the Seboomook Road then he got back and laid down in the back of the wagon again

Yours truly,
Geo. H. Ware"

We know that when Great Northern began operations, supplies were being hauled in winter, by horses, all the way from Greenville to the head of Moosehead Lake, some forty miles, over "bushed roads" on the ice -- trails marked by brush stuck in the snow so that one team followed another, building up a hard-
packed surface that would withstand a reasonable amount of thawing. We quote from one of a series of articles headed "In Days of Yore", written by an unknown under the name "The Old Moosehead Guide" and published in an unknown newspaper between 1931 and 1933.

"These trips were often made under trying conditions, and called for hardihood on the part of the teamsters, who braved the bluster of winter storms and sub-zero temperatures. And it was not an infrequent occurrence for them to blunder off the trail and sluice their load, or get lost on the lake's expanse, or drive into a wrinkle to lose both their horses and loads, and, sometimes, their own lives."

A "wrinkle" was a ridge of broken ice and snow pushed up sometimes as high as ten feet, which could collapse unexpectedly. Spring-holes and rotten ice as the weather began to warm up, were other hazards. The Old Moosehead Guide speaks of there being as many as twenty teams on one of these roads at one time, but off the lake the toter was often on his own, and again we quote:

"Day in and day out he made his trip from camp to supply base along a lonely tote road, through miles and miles of flanked woods, along frozen lakes and streams, through drifted snow and blizzards, his horses blowing steam from their nostrils, the only sound the creak of the harness, the whine of the wind and the jangle of his bells."

We know that just before the Company came into existence, supplies for an operation conducted by George Ranney, later a
contractor for Great Northern, were hauled up the ice of Moosehead to the Ross Farm, and thence up Russell Stream, past Third Elm Pond and over to the Baker Branch of the St. John River, from which logs cut on the St. John cant were being hauled to the Big Bog. We also know that forty years later, when trucks and tractors were being used for long distance toting, the fall supplies for an operation on Gulliver Brook, within a few miles of this same place, were hauled by truck from Greenville Junction to the Carry Pond Storehouse (Seboomook Farm), a distance of 52 miles; were loaded on scows and towed three or four miles across Seboomook Lake to the terminal of the Seboomook Lake & St. John Railroad, which we will tell about later; were taken three miles up the railroad in small lots by a Ford truck equipped with flanged wheels, and were transferred to tote wagons and hauled by horses another three miles into the operation -- a total of some 62 miles, and this was said to be a hard tote. By that time the toter was a different breed. As the Old Moosehead Guide wrote, in not very good verse:

"Down memory's lane
Of logging in Maine,
Before the influx
Of gas motor trucks,
The old toter's name
And logging camp fame
Spread along the road
Where he hauled his load
From town and back again,
From base to wanigan.
He was famous then;
Now he's among the forgotten men."
To make our discussion meaningful, we should know how much load could be moved by a tote team. We know that under the usual tote road conditions, the average load for a Canada tote wagon, a vehicle with four wheels, the front ones smaller than the rear, and a body some 12 feet long and 42 inches wide, with side stakes or a slatted box about 30 inches high, drawn by a four-horse team and used for summer and fall toting, was about 1500 lbs. Four horses could haul a much larger load, as much as four or five tons, on sleds over snow or ice, but this would depend on the nature of the road. The maximum haul for a tote team was around twenty miles in one day in any case. Even a single pair of horses could move some nine tons of pulpwood (four cords) on a well-prepared hauling road, and later on very large loads were hauled in toting operations over good surfaces. However, we are not discussing hauling roads, which we will describe later, but tote roads in the early days of the 20th century. This information, using the word loosely, cannot be so far off as to confuse our point that moving 500 tons or so into an operation in those times was like filling a bathtub with a teaspoon, and took a lot of men and a lot of horses. This brings to mind two other points; first that accommodations for men and horses had to be available at intervals along the way -- we know that there were shanties every ten miles or so along the Pleasant River tote road, and this must have been true of the other old roads as well -- and second that there was another big problem of transportation in these early days in that when the horses were brought out of the woods in the spring they had to be shipped out to Bangor and pastured in that area.

We have done what we can, in perhaps too many words, to establish the reasons why the Company felt that a more efficient sys
tem -- better roads, with more civilized stopping-places, better facilities for handling water-borne shipments, and administrative centers, with storehouses, barns and pastures nearer to the choppings were necessary for the up-river operations, and we will now examine, as best we may, what things were done to arrive at this. They were not all done at once, nor in the above order.

Geography, and to some degree people ante-dating Great Northern had already pretty much established the locations of the strategic centers for operations on the Upper West Branch; Greenville Junction, on two railroads at the foot of Moosehead Lake; the Pittston Farm, at the junction of the North and South Branches; the early facilities at Northwest Carry and Northeast Carry at the head of Moosehead, both a jump and a spit from Penobscot waters; the Grant Farm at the foot of Ragged Lake, the take-off for tote roads up both sides of Chesuncook. Lily Bay, a little less than half-way up the west side of Moosehead, became important, and we include it in the list, although it did not have any particular place in the very early operations. A line drawn through these points, beginning and ending at Greenville Junction, would form a huge upside-down triangle around Moosehead Lake. Other locations were important in the scheme of things, as we will see, but these were the big ones.

Since all of these places were developed over a period of years, and some activities were shifted from one to another, it would be most confusing to attempt to show the relationship between this one or that. Anyway, we do not have the necessary information. The best we have been able to get out of the Woodlands Department is an old leather-bound loose-leaf book, some four
inches thick, gold-lettered "Structures-Great Northern Paper Company". All Spruce Wood structures, right down to chicken coops and clothes-yard lattices, were numbered, the numbers in this book running to over 1,000, although there were not that many buildings at any one time. The numbers have only a vague relationship to date of construction. This book is beautifully cross-indexed, and is filled with special forms for descriptions, repairs made and valuations, but is exasperatingly incomplete. There is no date that would indicate when it was compiled, although we are quite sure from the content that it was in the late 1920's. It is with little doubt the updated result of the following Gilbertese:

January 8, 1913

Everett F. Amey
160 Exchange St.
Bangor

In connection with the description of our farm building and storehouse equipments. When you are prepared would like for you to make detailed statement of every building, giving its dimensions, material it is built of and all necessary information that will lead up to an estimate of its value from the ground to as far into the sky as it goes. This also covers reservoirs, cellars and water systems.

Yours truly,

Great Northern Paper Co.

By F.A. Gilbert

To complicate matters, we have two beautiful large corduroy-and leather bound albums, salvaged from the old Boston Office, con-
taining hundreds of 8 x 10 glossies of Spruce Wood buildings, one to a page, each page printed with a number, name and location, but you guessed it, no dates at all. We are quite sure, again, however, that these pictures were taken in the very late 1920's or very early 1930's, as we remember the albums arriving in Boston in response to a request from William A. Whitcomb for information on Spruce Wood properties, after Fred Gilbert's resignation, and his irritation at what he considered their extravagance. They too have been robbed of a number of photos that might have been useful. Some material, however, can also be sifted out of the Northern magazine and other sources, and we will put together what we can find in an effort to come up with a certain amount of information. Since there is no way to arrive at any general chronology, we will look at each place independently.

One might suppose that the first thing to have been done would have been to establish storehouses at Greenville Junction and Jackman. We find nothing to indicate that this was done. Indeed, the earliest ones seem to have been away back in the boondocks. We vaguely recall being told that one was rented for a time from the Jackman Lumber Company, but this may not be true. At Greenville Junction the Company purchased at some unknown date what was called the Coburn Storehouse, a large, unpainted board and batten building with a tar paper roof, on the shore of the lake, served by a side-track. This may have been an early purchase, but that is strictly conjecture. Since we know that other developments at this place came later, let us leave it and go up-river to the large depots on or near Penobscot waters and their satellite facilities.
Some time before the bloodless Aroostook War of 1839, arising out of the border dispute between Maine and Canada, the Legislature authorized the cutting of a number of roads through the wilderness to what it considered to be the boundary, for the passage of troops. One of these roads was cleared from Northwest Carry past Canada Falls and up Penobscot Brook to Portage Lake, crossing the South Branch at what became later known as the Pittston Farm. Some accounts say that this was done as early as 1830. It is our understanding that there was no lumbering on the West Branch above the head of Chesuncook Lake until after 1850, but some time after that year, and before 1879, a man named Knight cleared about ten acres on the south side of the South Branch where it joins the North Branch, on or near this road, which was never used for any military purpose, but had become known as the "Old Canada Tote Road", and put up a log cabin on the low land right on the river bank, to accommodate woodsmen and river drivers. This place became known simply as "Knights's". Later it was run by F.W. Cunningham, and then by Paul Goodblood, a well-known character of that time. Pittston Township, on which this building stood, was owned by the Holyoke family, and Knight and the others were probably squatters, as in 1900, Charles McLeod, operating in that area and on the North Branch, leased the building from the Holyokes, cleared more land, and put up five or six more log structures -- camps, hay storage and a hovel, and a board barn with a hewed frame for storing farm machinery. This outfit was taken over by Charles Jackson, another of the old lumbermen, who had been there for two years in 1906, when Great Northern bought Pittston Township and everything on it from Caleb and Franklin Holyoke, along with the land at Burnt Land Rips and other property which we mentioned in connection with the construction of the East Millinocket mill. By that time, about 100 acres had been cleared for growing hay and vegetables, and a rough
winter tote road had been cut through to Rockwood by a lumberman by the name of Butterfield, one of the old-timers not mentioned earlier, who had a contract with the Company.

Great Northern immediately set up headquarters there for the cutting on the North and South Branches, with a Superintendent in charge of what was called the "Pittston Operation". As we have noted, the only access to the place at this time was by tote road; the one from Rockwood being usable only in winter. That from Seboomook, fourteen miles away, was a miserable thing, but it could be negotiated by a tote wagon hauling 1500 or 1800 lbs. in a one-way trip per day. The bridge across the South Branch, leading to the operations, was temporary affair that washed out each spring; there was stable room for 16 horses; 200 bushels of potatoes, 25 bushels of root vegetables and 12 tons of hay were a big crop for the little farm; and it took three days for a man to get there from Bangor.

The Company did not begin to improve the Pittston Farm until 1908, the new buildings being located on higher ground just a little further up the South Branch. Charley McLeod's old outfit was left intact, and was used for some years, one of the buildings serving as the Company office. We will list the new construction by date, and to avoid repetition, we will say that except where we note otherwise, all the buildings were of solid frame construction on good concrete or masonry foundations, with clapboarded walls and gable roofs covered with interlocking asbestos shingles, and were all painted white. We are omitting the odd inches in the floor plan dimensions, which do not include porches and verandahs and a small ell or two. We are not sure that we have all the construction,
but the records which we find are probably close enough for our purpose, and are as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Building</th>
<th>Dimensions</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1908</td>
<td>Upper Stable</td>
<td>40 ft. x 61 ft.</td>
<td>Capacity 24 horses, 4 cows and 50 tons of loose hay. Portable pig pens in basement.</td>
</tr>
<tr>
<td></td>
<td>Blacksmith Shop</td>
<td>25 Ft. x 25 Ft.</td>
<td>with an ell about half as large. Capacity 4 horses at one time.</td>
</tr>
<tr>
<td></td>
<td>Wagon Shed</td>
<td>18 ft. x 99 ft.</td>
<td>Open front, shed roof. Capacity 12 wagons or equivalent.</td>
</tr>
<tr>
<td>1910</td>
<td>Storehouse</td>
<td>20 ft. x 120 ft.</td>
<td>with loft. Capacity 6,000 bushels of grain and 250 tons of miscellaneous supplies. This building had grain bins, wangan storage rooms and hoists and trolleys for handling materials</td>
</tr>
<tr>
<td></td>
<td>&quot;Old&quot; Boarding House</td>
<td>22 ft. x 74 ft.</td>
<td>two story; steam heated; fireplace, kitchen, rooms for 17 guests and a dormitory -- &quot;ram pasture&quot; in the vernacular -- for 30 men. Storage for 100 cords of firewood in the basement.</td>
</tr>
<tr>
<td></td>
<td>Ice House</td>
<td>20 ft. x 24 ft.</td>
<td>Capacity 132 tons of ice. Two built-in refrigerators which would hold two sides of beef and 200 lbs. of dairy supplies.</td>
</tr>
<tr>
<td></td>
<td>Middle Barn</td>
<td>46 ft. x 105 ft.</td>
<td>with loft. This was a type of building designed by Spruce Wood - 69</td>
</tr>
</tbody>
</table>
Hardy Ferguson, and used in many locations. Gambrel roof (the records call these "mansard" roofs, but they were not). Capacity 50 horses and 225 tons of baled hay. Pig pens in basement.

Surface well, 20 feet deep; a well-house 10 ft. x 10 ft. near or over it, containing three pumps, each of 600 gallon per hour capacity, the main pump driven by a "hot air" engine, a very interesting device which we will not try to describe, but which was used only for pumping water; one of the others by a windmill, and the third hand operated; a 9,000 gallon cypress tank on a 30-foot steel tower, housed in, and a system of piping serving all the buildings. Some few years later, we believe in 1914, a gasoline engine driven light plant was installed in the well-house, which burned in 1947, and oil got into the well. An 85 foot well was then drilled near the "new" boarding house, and a pressure system was put in to replace the elevated tank. This well filled up with sand, and in 1953 another, 185 feet deep, was drilled.
In this year, construction of the first Company road, from Seboomook to the Pittston Farm, was begun, the old Canada Tote Road being widened, stumps pulled and rocks blasted. The job was finished in 1911 by 300 men. An attempt was made on this job to use an oil-burning steam-powered tractor, or traction engine, but it was not a success. While this was a dirt road, as was common in those days, it was a tremendous improvement on the tote road. It was ditched and a gravel surface was put on it within the next few years, however, and to the best of our knowledge, all subsequent roads built by the Company were graveled.

In 1909, a right-of-way for a new road, 23 miles long, had been cut from Rockwood to the Pittston Farm, following in general the route of the Butterfield tote road. We have some conflicting dates, but work on actual construction seems to have begun in 1911, and was finished by 1915, a steel bridge across Moose River, taking the place of a floating bridge which went out with the ice every spring, being part of the job. The Moose River bridge, incidentally, was replaced by a concrete structure in 1961-1962. In 1914, a telephone line, on 698 cedar poles, was run from Pittston to Rockwood, to connect with the Moosehead Telephone & Telegraph Company. This was in service for some forty years, but the section from Rockwood to 20-mile was discontinued and torn down in the 1950's.

1911 - Office - 20 ft. x 24 ft., two stories. It would appear that this building, which had four bedrooms on the second floor, had been constructed before this time, and was moved to a new location in this year. During the next two or three
years a basement was put under it, and store fixtures for wangan were put in. A first aid room was established there about 1935, and in 1951 a 16 ft. x 20 ft. extension was added.

**Lower Barn** - 46 ft. x 117 ft., Ferguson design, gambrel roof. Capacity 50 horses and 275 tons of baled hay. Pig pens in basement. These Ferguson barns, incidentally, cost about $10,000 at this time.

**Hen House** - 12 ft. x 42 ft., shed roof. Capacity 125 hens.

**Potato House** - 34 ft. x 58 ft. Dug into side hill. Gambrel roof formed a loft for storage of farm machinery. Capacity 6,750 bushels of vegetables.

1912 - "New" Boarding House - 32 ft. x 64 ft., two story. Steam heat, laundry, kitchen, dining room for fifty men; nine rooms for 9 to 18 men and a dormitory for 40 more. Storage for 80 cords of firewood in the basement.

1913 - Cannery - 20 ft. x 36 ft., with a small boiler room attached. Metal roof. Contained an 8 h.p. vertical boiler, two pressure cookers and the other equipment required.

With the development of the Pittston Farm, distribution of supplies to the South Branch area began to be from that place, and
between 1912 and 1914 about three miles of improved road was built to the Canada Falls dam. There were a couple of boat houses and two rough tar paper bunk houses there, but we have no dates on these.

The raising of the Seboomook Dam in 1913 changed the face of nature around the original part of the Pittston Farm, and the old log buildings on the low ground were demolished, perhaps at that time. Somewhere along the way a boat house had been built -- again we have no date -- and in 1916, after trucks had begun to be used for toting, a steel garage, 28 ft. x 56 ft., with bays for four five-ton trucks; half of a building that had been at Lily Bay, was moved to Pittston. A slaughter house was mentioned in connection with the description of the water works, but we have found no information about it.

This was the way it was until the late 1930's, when mechanical equipment and other factors began to change things. Here men stayed going to and coming from the woods operations and the drive, and here they were paid off. Here horses were stabled and cared for, and here at one time enough produce was grown to supply all the operations in the area. With truck transportation and the advent of the bulldozed woods road its importance gradually declined; farming was discontinued, and its functions changed, but it remained the center of activity. A steel bridge was built across the South Branch in 1921, and while we may be mistaken, it is our impression that this was replaced by a heavier one, we would guess in the 1930's. In 1934, another steel garage was put up to house snowplows, trucks and tractors. This burned during the winter of 1954-1955, and a new
steel Butler building was immediately provided to replace it. At this time the electric generating plant was moved into this facility from wherever it had been after the well-house fire, and all outside wiring was replaced. In 1948, a small building had been moved up from what had been the prisoner of war camp at Seboomook, and another had been brought from North Anson. These were made into cottages, mostly for the use of Company people from Bangor spending some time in the area.

As far as we know, the Pittston Farm was used continuously from some time in the late 1800's to the recession of 1957-1958, when it was closed down for a few years, re-opening in 1960, at which time a truck and tractor repair operation was set up, manned by men assigned from the Greenville shop which we will write of later. It was managed for a long time by a succession of Company Superintendents, but in the later years the boarding houses were leased to outside parties to operate, while other activities were carried on as usual. However, with the end of river driving in 1971, its usefulness was at an end, and it was shut down. It is still owned by the Company; the buildings are still there, and are maintained, and it is used once in a while for some special purpose, but as this is written it is a ghost place, a memorial to the way things used to be.

We have gone into some little detail on the Pittston Farm, using it as sort of an example. We will treat most of the other locations differently, not only to cut the narrative down to size, although it will be long enough in any event, but because in some cases we do not have the same kind of information.
Let us now come back down the west side of Moosehead Lake to a place called Birch Point, just on the line between the Rockwood Strip and the township of Taunton & Raynham, where until 1900, give or take a year, according to our information, there was nothing but woods and rocks. At about that time, a few people settled in that area, which could be reached only by boat, and created the little village of Rockwood, and another little settlement around the mouth of the Moose River. In 1906, the old Somerset Railroad, which was taken over by the Maine Central in 1907, was extended from Bingham, crossed the C.P.R. at Somerset Junction, and went through Rockwood to the shore of the lake at Birch Point. The terminus of this line was named Kineo Station. The purpose was probably to extend rail service for woods operations from the area served by the Somerset Railroad to a point considerably further north than Greenville Junction, and perhaps to provide service to the big summer resort across the lake at Kineo proper, which may account for the name given to the station. We have no evidence that Great Northern had encouraged the building of this line, but whether it did or not, it immediately began to establish a new base of operations at Kineo Station. This place is called both Rockwood and Kineo in the records, and the west side of the lake became known as the Kineo Side, although the real Kineo was on the east side. However, the Company had no installation at the latter place that we know of, and for our purposes, "Kineo" is Kineo Station, and Rockwood and Kineo the same place.

In 1907, Great Northern built here a substantial wharf, of crib construction, loaded with rock and filled with gravel, faced with sawed timber. As the lake was shallow at this point, a con-
sizable fill had to be made to get this out into deep water. Partly on the wharf and partly on this fill was a two-story steel storehouse, 48 ft. x 79 ft., on a wooden frame, with a tar and gravel roof. This building could hold 25,500 bushels of oats and 20 tons of baled hay, and had wangan and harness storage rooms and a coal bin. The next year, one of the big Ferguson stables, 46 ft. x 105 ft., with stalls for 50 horses and storage for 260 tons of baled hay, and an open shed to hold 8 wagons were erected nearby, and at the same time a frame bunkhouse, 20 feet square, for 14 men, and a cottage for the Superintendent, a small 1½ story house, were built. In 1909, an office, with sleeping quarters for three men, and a frame harness shop, 24 ft., x 28 ft., large enough for five men to work at one time, and provided with harness-making equipment, were added. The length of this last building, incidentally, was extended to 42 feet some time before 1926. Between 1910 and 1912, a one-story brick machine shop, 47 ft. x 147 feet, designed by Hardy Ferguson, was built near the wharf. It was provided with an 80 h.p. steam boiler and a 60 h.p. steam engine to drive the machinery, which was mostly for woodworking--building sleds and the like. Some 44,000 axe handles, for instance, were made here between 1916 and 1918. This building also housed a large, well-equipped blacksmith shop, and the crew ran to about 20 men. It originally had a steel stack, but this was replaced by a round brick chimney in 1926.

A water system was installed in 1911. This had an 11,000 gallon cypress tank on a steel tower 25 feet high, sheathed with wood; a small concrete block pump house with two pumps, one driven by a Fairbanks-Morse oil engine and another by a steam engine taking steam from the shop boiler. Water was taken from the lake, and
was piped to the various buildings, but it was not potable, and drinking water had to be carried from a spring.

There was a lot of new work in 1912. A large two-story boarding house, 32 ft. x 63 ft., steam heated, with 10 rooms for 10 to 20 men and a ram pasture for 38 more, a kitchen and a dining room for 50 men -- a well-built structure with steel floor beams on a masonry foundation -- was constructed in this year, along with a 109-ton ice house with a cold room; a lumber shed to hold 240,000 feet of lumber; an open storage shed for 100 sets of sleds and 20 tons of miscellaneous materials, with a paint shop enclosed at one end, and a small cottage, covered with roll roofing, with living quarters, a drug room and equipment for a veterinarian. Oil of several kinds became important about this time, and the other work of 1912 had mostly to do with the storage and handling of this commodity. The information we have to work with is a bit confusing, but another wharf was built out from the shore, more or less at right angles to the first, and on this, as far as we can make out, were a 7,500 gallon gasoline tank, and a similar one for kerosene. A little up the grade from the wharf, two 3,200 gallon "crude oil" tanks were partly sunk in the ground. This "crude" oil was of course not crude as we now know it, but diesel fuel, used in marine and stationary "oil" or "kerosene" engines with ignition systems, quite common at that time. The fuel used in the diesel marine and tractor engines which came along later continued to be called "crude oil", at least up into the 1940's. All the tanks were in open wooden shelters; all were filled by gravity from tank cars, and all were piped to the lower floor or "basement" of the storehouse on the wharf, where drums were filled for shipment up-river, the crude oil flowing by gravity, gasoline and kerosene being pumped from a small steel pump-house on the railroad right-of-way.

Spruce Wood - 77
There seems to have been no more construction until 1914, when a hen-house, probably for 50 hens, designed by the University of Maine Extension Service and later doubled in size, and a small cottage for the permanent clerk, were built. In 1915 a second wagon shed, for 7 wagons, and a portable sectional steel garage, for four five-ton trucks, were erected. The following year, a central light and heating plant was installed in a new 16 ft. x 20 ft. concrete block building, but we have no description of the equipment, and in 1917 a second open lumber shed and three more small dwelling houses were built, and a drug room, a small separate building, was provided for the veterinarian, with space for drug storage and the required sinks, mixing barrels and so on, which were moved from the temporary quarters built earlier. A 16 ft. x 32 ft. boat house had been provided somewhere along the way.

All these buildings, except as noted, were of good frame construction, all but one painted white, as at Pittston, and were all along the shore of the lake, or on the hillside just above the wharf and shop. There may have been some minor changes later, but nothing of much importance, and this, as best we can describe it, was the Kineo plant. We might say that it was a most difficult place in which to build; almost entirely ledge, so that all foundations, trenches for water pipes and so on, had to be blasted out of the solid rock.

The Company owned some other property in the area -- the Sunshine Inn, a little boarding house on Moose River in Rockwood, with two small barns nearby, and a sawmill, a boarding house and a stable, with a hay shed, a blacksmith shop and an office building

Spruce Wood - 78
in Taunton & Raynham. These are shown in the records as "A.R." buildings, which would indicate that they were acquired in some manner and for some reason from the American Realty Company, the International Paper Company's forest management arm in Maine. They were all closed and in disrepair in the 1920's, and as far as we know were never used for anything by Great Northern.

Incidentally, Rockwood had its own post office, but the address for the area north of that, at least during the summer and fall months was "Ogontz" -- a strange label for any place in that part of the country, and one which has always intrigued us. It was the name of a sporting camp in Big W, on the west shore of the North Bay of Moosehead Lake, a mile or so south of the Seboomook Farm.

There was no road at all from Greenville to Rockwood until the 1930's -- we will come to that later -- and practically everything came up to Kineo by rail. We are told that there was very little water freight. We are a little uncertain of our facts about the toting from Kineo. All we can do is put down what we do know, and let the reader puzzle over the details and the inconsistencies, as we have done.

We have not been able to determine when trucks began to haul to the up-river area out of this place, but it would not seem that it could have been much before 1914, when the road from Rockwood to Pittston and the one from there to Seboomook were good enough for truck traffic. We suppose that during the summer and fall, at least until that year, most supplies went up by boat to the head of the lake and were distributed from there by tote team. After
1914, it is our impression that water traffic, except for heavy materials and equipment declined, and most of the toting, at least to the North and South Branch operations, was by truck to Pittston and Seboomook, the trucks gradually working further north as roads were improved, with horses hauling from these roads into most of the camps until the late 1930's. As to winter toting, we would suppose that the dangerous haul up the ice of the lake was mostly discontinued after the Kineo depot was established, and that the roads -- at first the old Butterfield tote road and then the new "turnpike" -- were used. However, the early trucks, with their low power, solid-rubber tires and poor brakes were no match for winter roads, and in general neither trucks nor tractors were very reliable until into the 1920's. There were passenger cars on the Company's turnpike roads, of course, as soon as they were built, and there were always adventurous souls who were willing to try anything to get their wheels deeper into the woods. On March 24, 1922, one Ralph Bartlett drove a brand-new Buick from Greenville to the old Chesuncook Dam and thence across the ice of the lake to Chesuncook village. This was the first automobile ever to be seen in that place. A.B. ("Uncle Anse") Smith was one of the passengers. He was then 80 years old. We said that the Village could be reached only by tote road or by water, but after all, ice is only hard water! Incidentally, we heard tales in the 1920's of people having to build fires around their cars after they had been sitting out at some depot for a day or two in the winter. Also in the 1920's the Company had a number of "snowmobiles"; light half-tracks with runners instead of front wheels, which could negotiate almost any road, but these were used for carrying passengers and the mail,
and perhaps for very light toting. As best we can determine, then, the heavy winter toting from Kineo was done until some time in the middle of that decade with four-horse teams, which brings us to "10-Mile", "20-Mile" and so on.

We have said that the distance a team could travel in a day was twenty miles. This might have been a straight haul in the old days, but apparently the Company did it differently, and we have three accounts of how it was. "Ten-Mile" was in Tomhegan Township, ten miles more or less from Kineo on the road to the Pittston Farm. "Twenty-Mile" was in Pittston Township, a few miles from the farm. According to an article in the April, 1927 "Northern", the teamster left Kineo early in the morning with his load, had lunch at 10-Mile, then went on to 20-Mile, stayed there over night, and brought an empty sled back to Kineo the next day. Another account, from the March, 1925, issue, says that one teamster left Kineo with a load, and another left 20-Mile light, at about the same time in the morning, meeting at 10-Mile, where they had lunch, the man from Kineo then bringing the empty sled with its team back to that place, the other taking the loaded sled on to 20-Mile. The third, from a group of old-timers, is more colorful. As the writer's notes of this conversation read:

"Teamsters would stay at 10-Mile all night, because they had trouble with liquor at Rockwood. One team would leave 10-Mile at morning light, go to Rockwood and pick up a load and go back to 10-Mile. The next fellow would leave 20-Mile and come down, arriving at 10-Mile at night and hook right on to that load and go forward (to 20-Mile). Did not unload, just changed teams and teamsters. That way each man was in his own bed at night. They did not let them
stay in Kineo if they could help it. This same way between 10, 20, 30 and 40-Mile."

Any or all of these procedures could have been followed, but we are confused about 20-Mile. The Rockwood-Pittston and Seboomook-Pittston roads converged at the "Pittston Y", about a mile and a half from the farm. 20-Mile was on Beaver Brook, about another mile and a half south of this point, and teams traveling between Seboomook and Kineo had to go up to the Y to get from one road to the other and down to 20-Mile. In 1921, a short piece of highway, the "Seboomook Cut-off", was built from 20-Mile northeastward along Beaver Brook to join the two roads, eliminating this dog-leg, but our problem is that we can find nothing to indicate that there was ever any shelter for man or beast at 20-Mile. The records we have show only a log storehouse with a pole floor, built in 1914, and a concrete garage of some much later date, and nobody seems to remember any bunkhouse. However, there are too many mentions of the teamsters staying there to ignore, and we have to assume that either there were some kind of facilities for them, or that they really stayed and took care of their horses at Pittston Farm, leaving their sleds or wagons at 20-Mile. Our story of the Spruce Wood Department is full of this kind of uncertainty.

We have no difficulty with 10-Mile, officially the "Kineo-Pittston 10-Mile Swing". A Cook-Bunkhouse, a 1-1/2 story frame building on mud sills, with accommodations for 40 men; a wagon shed 20 ft. x 50 ft., with four open bays for wagons and one closed bay for hay storage, and two identical hovels, "North" and "South", each 30 ft. x 36 ft., with a 15 ft. x 16 ft. dingle for hay storage, capable of housing a total of 32 horses and about six tons of baled
hay, were built in 1913. The next year a steel storehouse, 24 ft. x 75 ft., capacity 100 tons of miscellaneous supplies, was built, and a well 167 feet deep was drilled and equipped with a hand pump in a little wellhouse brought up from Kineo. At some time a 16 ft. x 25 ft. frame hen house, for about 50 hens, was constructed, and an old box car was moved from Kineo and set on mud sills; purpose unknown. All these structures except the hovels were neat, white-painted buildings. The hovels were built with pole frames, covered with roll roofing over spaced boards, but they were trimmed, and the trim was white-painted. In 1917, a cellar was dug around the well casing, a foundation was built, and the Cook-Bunkhouse, remodelled and lengthened about 20 feet to accommodate another ten men, was moved onto it, a steam heating plant was installed, and it became known as the Boarding House. A gasoline engine driven pump was installed on the well, which was now in the new basement, and a small electric light plant was put in there also. At this same time the wagon shed was converted into an office, one end being made into a garage. This was a busy place during the days of totting out of Kineo with horses. Twenty-four teams on the road at once were usual, and as many as sixty are mentioned in one account -- and they all stopped here.

In the earlier years, supplies going to the North and South Branch operations were distributed from the Pittston Farm over tote roads. We believe that Jackman ceased to be of much importance as a base after the Company moved into the Pittston Operation. However, in 1917, a start was made on what was later called the Boundary Road, from the Pittston Farm northwesterly up Lane Brook at the outlet of Dole Pond, a distance of 17 miles, and so
came into being the "30-Mile Swing" and the "40-Mile Swing" -- these being rough distances from Kineo. The road to 30-Mile, in the upper part of Hammond, was completed in 1917, and in that year a boarding house for 16 men, a small office, two 16-horse hovels, just alike, each with a hay shed for three tons or so of baled hay, and a 25 ft. x 82 ft. storehouse, were put up at that point. These were all rather rough buildings, built with hewed frames, boarded in and covered with "Tropico" -- roll roofing, that is -- except the storehouse, which was simply boarded vertically and not covered. All were on posts or blocking.

It was 1919 before the next stretch, to Dole Brook, or the 40-Mile, was completed, and here there was a more elaborate installation. There had been previous activity around this place. Back in 1909 the Company had built a 25 ft. x 60 ft. frame storehouse there, and a Cook-Bunkhouse, a neat, clapboarded frame building, 25 ft. square, had been constructed in 1911. At that time the old tote road, in very poor shape, continued on up the valley of Hurricane Brook and into Quebec, connecting up with a road leading to St. Zacharie and on to Morisette Station on the Quebec Central. In 1912 and 1913 some work had been done on this part, known as the Dole Brook-Morisette road -- enough to make it negotiable in dry weather. In 1916, a small steam sawmill which had been located on Penobscot Lake was moved to 40-Mile and operated for about a year, sawing lumber for camp construction -- we might say here that Great Northern operated a number of sawmills, some portable, some like this one, in various places at various times, but to the best of our knowledge little of their production was marketed, most of it being used by the Company -- and in 1917
Charley Gilbert had built a set of camps for an operation a few miles south of Dole Brook, at what became called "37-Mile". His storehouse there was acquired by the Company, and was used for a few years. However, the facility known either as 40-Mile or Dole Brook was not built until 1919. In that year, a two-story boarding house, 30 ft. x 60 ft., on a masonry foundation, with 12 sleeping rooms and a ram pasture for 40 to 50 men, a laundry and showers, was erected; a well was drilled, a well-house was built, in which a gasoline engine driven pump and a small light plant were installed, and two 16-horse hovels, with dingles for hay storage, along with a 24 ft. x 100 ft. storehouse, were constructed. A note on the record of the old Cook-Bunkhouse says that it was torn down, and perhaps this was done at this time. In 1921, the Pittston Cut-off was built, a short piece of road bypassing the farm so that teams and trucks using the Boundary road did not have to go through the farm yard. In 1922, a combined ice house and wood shed, 20 ft. x 44 ft., and a hen house for 50 hens were added, and perhaps about the same time a 30 ft. x 50 ft. garage and a small oil storage house were put up. Oil came in bulk, not in cans, in those days. The hovels -- these horse hotels were barns or stables at the farms, but hovels elsewhere -- were rather rough buildings, covered with roll roofing. All the other buildings were of good frame construction, clapboarded and painted white, except for the garage, which was shingled all over, with white trim. 40-Mile even boasted a tall white flagpole, with a gold ball on top, but come to think of it, nearly all the Spruce Wood installations of any consequence had flagpoles. There was what was almost a small farm operation at 40-Mile, larger than the gardens common to many
of the old stopping places.

The Boundary Road, from 40-Mile to the Quebec line, was built in bits and pieces, and was not finished until 1925. However, there was considerable use of it before that year, and in 1923 the Company built what was called the Boundary Cottage, in T.5, R.20, close to the border. At this time wood was being hauled over the border from Quebec, and this place was for the use of Company personnel in connecting with this operation. It was also used part-time by U.S. Customs and Immigration people, but in 1919 another small frame building was erected nearby and was leased to the Government as a Custom House.

Let us now go eastward from the Pittston Farm to the Seboomook Farm at Northwest Carry. Here, according to The Northern, some time in the 1800's a man named Marsh Lane bought land on the shore of Moosehead Lake and built a log house, which in a few years passed to an Alec Lessard, who sold the property to Joseph Morris, of Greenville. Joseph Morris put up a hotel; a substantial frame building gaudily painted yellow and red, and sold it to one Billy Young, who ran it for a few years, when it was bought by Martin Colbath. At that time, whenever it was, a small wharf and storehouse had been constructed to handle shipments coming up by water from Greenville, as the place was of course a way-station for lumbermen and "sports". If it did not already bear the name, Martin Colbath called it the "Northwest Inn". It was within a stone's throw of the old Bradstreet sluice which we have described elsewhere, and was there when the Company bought Seboomook Township in 1899. We suppose there were other buildings in the area, like the Seboomook House which we have mentioned, and a few more, but
they have no particular place in our story. The Seboomook House, incidentally, burned in 1945, along with the Company's office, while the prisoner of war camp, which had nothing to do with the fire, was there.

The original Northwest Inn, a two-story frame building 28 ft. x 56 ft., was shortly overrun by Great Northern people. Martin Colbath enlarged the wharf and storehouse and rented them to the Company; remodelled the Inn; added two wings, each about 22 ft. x 30 ft., and put up another two-story building, the Annex, 24 ft. x 60 ft., all probably before 1915, although we have no dates; and the Inn continued to board Company personnel until 1918.

The first Great Northern building on what became the Seboomook Farm was a Cook-Bunkhouse, a one and one-half story frame structure 26 ft. x 52 ft., on a dry wall. This was built in 1909, right next to the Colbath's garden. In 1910, another frame building, 20 ft. x 24 ft., with an ell, which had been built on the Ross Farm the year before, was moved to Seboomook and made into an office. This building contained sleeping quarters for the Superintendant, the clerk, and one other man, and housed the wangan. It was torn down in 1924. In 1910 also, two of the big Ferguson 50-horse barns -- "Upper" and "Lower", each 46 ft. x 117 ft., with storage for 275 tons of hay and portable pig pens in the basements, were built.

What was originally a rather peculiar building was erected in 1912. We are unable to describe it exactly. It was 32 ft. wide and 202 ft. long, with full-width doors at each end, had a dirt floor, and as nearly as we can make out, a loft overhead for

Spruce Wood - 37
storing machine parts. The description says "No posts within the building, which was supported on one side by long slanting braces and tie wires." This does not ring any bells. It was intended to house the steam tractor mentioned in connection with the construction of the road to the Pittston Farm, and the equipment for use with it. Garret Schenck, in a report to the Directors, called this machine a "traction engine". We have found no information about it, except that it was big. The steam traction engine of a few years before was a huge thing with a horizontal boiler and vast iron rear wheels with broad surfaces, and it may have been one of those, or it may have been some form of the Lombard steam log hauler which we will go into later. Anyway, the strut and wire arrangement did not hold up, and in two steps in 1913 and 1915 a foundation was put under this building, and the loft was rebuilt with a trussed roof, making a conventional structure, renamed the Equipment Storehouse. About this time a larger bunkhouse, of which we have no description, was built, but this burned within a few years, and was not immediately replaced. In 1913, a 30 ft. x 58 ft. potato house, to hold 6,000 bushels of vegetables, the loft arranged for machinery storage, and an 18 ft. x 98 ft. wagon shed, with space for 8 wagons, a harness room for 50 sets of harness and loft for storage of other horse furniture was constructed. A blacksmith shop, 24 ft. x 28 ft., one and one-half story, with sleeping quarters for 8 to 12 men and room to work on 6 horses at one time (this we believe was later moved to Seboomook Dam for the use of the gate tender), a small wellhouse over the "dug" well, housing a hand pump, and an ice house, 21 ft. x 28 ft., of 90 tons capacity, with two refrigerators, trolleys and hoists, were added in 1914. Also about this time a slaughter house was
built, but this burned in 1916. The Seboomook Farm seems to have been a place prone to fires.

We might say that we understand that in 1914 the Boyd & Harvey Company built a narrow-gauge railroad, about on the line of the old Bradstreet sluice, from Carry Pond on the Penobscot side to near the outlet of Carry Brook, which runs into Moosehead Lake. This was naturally called the Carry Pond & Carry Brook Railroad, and was operated for four years, one engine hauling logs and cedar ties to a sluice from Carry Brook into Moosehead. We believe it was taken over by, or was operated for the U.S. Railroad Administration from 1916 to 1918, when it was dismantled. The Company, as far as we know, had nothing to do with this. It is just part of the story of Seboomook.

In 1915, a cow barn, 18 ft. x 31 ft., for four cows and four or five calves, with feed storage space; a 16 ft. x 30 ft. open shed for 30 cords of firewood and a hog house, 24 ft. x 80 ft., for 84 pigs, with concrete floor and feed troughs, feed storage, and hog scalding room with an 8 h.p. boiler and a 100-gallon jacketed kettle were built, along with a temporary hog shelter, a low shed, boarded and covered with roofing, to hold another 40 to 60 pigs, were built. In 1916, a new slaughter house, a frame building with steel siding and roof, containing a 15 h.p. steam boiler, a 4 h.p. engine, lard kettles, ham smokers, and so on, to process 20 hogs at one time, was constructed, and the other half of the old Lily Bay garage, a steel structure 28 ft. x 56 ft., holding four trucks, was moved to Seboomook. In this year also, the old Cook-Bunkhouse was moved to a new location, was remodelled, a steam heating plant
was put in, and a 26 ft. x 46 ft. two story wing, containing a new office, a dining room and sleeping quarters for 50 to 60 men was added. An electric light plant must have been installed about this time also, although we have not found the record.

About 1918, a hen house, a 10-ton dynamite house, a steel oil pump house with a partly-buried 10,000 gallon tank for gasoline or diesel fuel, probably the former, and a 12 ft. x 30 ft. boat house were built. We have no date on the water system that supplemented the original surface well. An artesian well, which the record says was 864 feet deep, had been drilled before 1916. A 13 ft. x 17 ft. pump house and a 30,000 gallon concrete underground reservoir had been built, and an engine-driven pump had been installed by at least the early 1920's, but at the unknown date around that time at which our record runs out, the distribution piping system had not been completed. However, a small frame garage had been put up for the Superintendent's car. Seboomook was sort of the social center for the area; dancing was universal recreation at the time, and about 1919, this is a guess, as we have no date, a "pavilion"; an open floor, 40 ft. x 100 ft., with a 20 ft. x 30 ft. extension for an orchestra and spectators, the whole surrounded by clapboarded sides maybe five feet high; and covered by a huge tent, was built. This structure, which adjoined a baseball field, was destroyed by fire in 1932.

The Colbath wharf and storehouse and some surrounding land were purchased by the Company in 1920, and were remodelled and enlarged in 1922, in connection with the construction of the Seboomook Lake & St. John Railroad, which we will describe later, making them "the finest on the lake". The Northwest Inn and the Annex, along with a store, another substantial frame building, which had
built by Martin Colbath, were bought from the Colbath Estate in 1929. These burned in 1948 as we have noted elsewhere. We should say that the Northwest Inn, the store, the wharf and a few of the early Great Northern buildings were in Big W, the north line of which ran just north of the shore of the lake, and the Company owned no waterfront at the Seboomook Farm until it purchased the wharf. The bulk of the farm, however, was on Seboomook Township, a little west of the original Colbath property.

There are probably some things that we have missed, but we do not believe that there was any construction of importance at the Seboomook Farm after the 1920's, and we hope that we have been able to convey some idea of the magnitude of this beautiful place, with its well-kept grounds and its buildings gleaming white against the background of the great expanse of North Bay, as it was at the height of its activity.

The Seboomook Dam road, only a few miles long, from the farm to the south end of the dam, but a difficult piece of construction on account of the large amount of rock cut, was built in 1912 in preparation for the dam rebuilding job which we have described elsewhere. Some grades were improved, and part of it was relocated, in 1925. A board and batten one and one-half story Cook-Bunkhouse was built at the dam in that year, and there was a sawmill nearby, but our impression is that these were used primarily in connection with the construction. In 1912 also, what was called the Loon Stream road was started from the north end of the dam northerly for a distance of 19 miles, the greater part of the work being done in 1914 and 1915, and in 1916 a storehouse, boarded in and
covered with roofing paper was built where it ended at Loon Stream. This road was extended another nine miles, to the head of Caucomgomoc Lake, in 1923, and became known as the Caucomgomoc Road. The Company had conducted operations around Caucomgomoc for a number of years starting in 1915, and there were a Cook-Bunkhouse and an office, both built of logs, where the road ended. Two metal-shingled garages and a gasoline storage tank and pump house were provided to accommodate the motor vehicle equipment used for toting after the road was completed. At the dam at the other end of the lake were a boat house, a storehouse and a hovel, an office, a blacksmith shop, a cook house and a bunk house.

The Company did not, as far as we know, have any operation at Northeast Carry, although it acquired property there, and this location was important to transportation in the early years. There is some vague history about this place, the gateway to the country between Moosehead and Chesuncook Lakes, and as far northeastward as Eagle Lake on the Allagash. About ten years before the Revolution, the Province of Massachusetts had had what was called the Quebec Road cut from Northeast Carry to Madawaska, as an aid to exploration. This received quite a lot of use for a while, but had fallen into disuse and was grown in by 1837. This was the site of the "ox railroad" of the middle 1800's, which ran in a straight line from Moosehead northeasterly about three miles to the West Branch. The operator, a Mr. Hinckley, had a camp at the West Branch end, which accommodated travelers. There was a wharf on the Moosehead end until the railroad burned in 1862 or thereabouts, but it probably burned also at that time, as it was not there in 1866, at which time there was no habitation on the Moose-
head side. The ox railroad was replaced by a tote road parallel to the old right-of-way, this connecting up with the tote road that followed the south bank of the West Branch from Seboomook to Chesuncook Village. Information is somewhat conflicting, but the Old Moosehead Guide says that some time before 1890 land was cleared at the lake end of this road by Charles Morris, who built a log house there, and that about the same time one Charles Luce put up a boarding house -- the Penobscot House -- at the river end. A little settlement sprang up there, with a store and a post office. The latter, established in 1889, served Chesuncook Village, some forty miles down river, the mail being carried by whoever happened to be going by, until the Village got its own post office in 1900 and a regular route was set up. By that time, it would appear that there were small settlements, each with a store and a hotel, at either end of the Carry, and the wharf on Moosehead had probably been rebuilt. It was still the jumping-off place for materials and supplies going into the area we have noted. Most of the parts for the Eagle Lake tramway built by O.A. Harkness and described earlier, were brought from Greenville to Northeast Carry by water in the summer and fall of 1901, some material which had not been moved before freeze-up being hauled up the lake on the ice. From the Carry, everything was horse-hauled to the site on sleds or skids over the tote roads and the ice of lakes and ponds on the way, a stupendous task, considering the distance and the weight of the heavy equipment like the boilers and engine. The 6,000 feet of cable, which weighed 14 tons and was in one piece on two spools, had to be cut in two at the Halfway House on the road between the Carry and the Village, as it was just too heavy to handle. It would seem likely, then, that Great Northern made use of this
route in the early days, but after the development at the Seboomook Farm was started it became less important.

We have been unable to determine exactly what the ownership situation was. The Company bought Burbank Township in 1915, but this purchase did not include the property around the Carry. However, in that year about four miles of road were built toward it, following the tote road along the river from the Seboomook Dam. No more was done on this until 1922, when it was extended another two miles. In the fall of 1924 the Company "acquired the property at Northeast Carry" -- the record shows purchase of about 900 acres at that time -- and the last three miles of road was built, swinging away from the river and connecting with the old Carry tote road, which by that time had been dirt surfaced, just south of the Penobscot Farm on the West Branch side, which A.G. Hempstead says in "The Penobscot Boom" was the old Morris place. This does not agree with our information on the location of the original Morris clearing, but no matter. The Penobscot Farm had been acquired in the 1924 purchase. At that time, the only buildings on it seem to have been a neat, white-painted barn and a woodshed. There was a boarding house, a one and one-half story structure with a barn, well-kept, at some point, and at the lake end of the Carry there were a store -- a rather run-down frame building -- three good-sized storehouses, a barn and a long wharf. This last, and at least one of the storehouses near it, were immediately demolished when the Company bought the property. Some of the remaining buildings were sold in 1929, and a year or two later there were only a few standing at either end of the Carry. As far as we know, the place was of no particular importance to
the Company after that, except for pasturing horses. The road, however, remained as access to the Lobster Lake region and the West Branch below the Seboomook Dam. The Ross Farm, on the east shore of the lake just south of the Carry, which had also been used for pasturing horses, was bought by the Company some years later -- we have no date.

By 1921, trucks and tractors on the roads and in the woods were a fact of life, and facilities for taking care of them were not adequate. In that year, therefore, construction of a new plant was started at Greenville Junction, in Little Squaw Township. The main feature was the machine shop, a flat-roofed, poured-concrete building, with a half-basement, designed by Parker Crowell, of Bangor, 102 feet wide and 218 feet long, with concrete floors, the main floor covered with wood block flooring. This level was divided into areas for specific uses -- an office; a blacksmith shop; a repair area; an assembly floor for trucks and tractors, taking up about half the width and length of the building and served by a ten-ton crane, the other half at this point being for wood-working and sled building; a machine shop for metal-working; a parts and tool storage room; a paint shop big enough for three trucks and one tractor, and a washroom and locker room, with toilets and showers. The basement contained the power plant -- a steam boiler, a steam engine driving a generator -- all the tools were powered by motors -- and a tire press for the solid rubber tires used at that time. The basement was served by an elevator, and a drilled well provided water. Construction was finished by the summer of 1922.
This was the Greenville Shop, but what grew up around it was the Little Squaw operation. In addition to the old Coburn storehouse, there were three big open-front equipment sheds, two perhaps 20 ft. x 120 ft., for storage of wagons and sleds; a smaller one, maybe 18 ft. x 84 ft. for miscellaneous materials that could not be stored in the basement of the shop; a large lumber shed; a barrel shed for storage of oil drums; three 10,000 gallon tanks for truck and tractor fuel storage, with a pump house, and a large general storehouse, which we do not believe was built until quite a few years later. We have no dates and no dimensions for anything but the shop. All the buildings except the last were of good frame construction, and all except the barrel shed, which was covered with metal shingles, were white-painted. The Company also owned a few dwelling-houses in Little Squaw and in Greenville. The shop employed about thirty men, and there were perhaps as many more at the storehouse and on miscellaneous jobs.

We should mention, in passing, the Chesuncook Half-way House -- an old bunkhouse, a hovel and a frame boarding house, built by "Big Joe" Smith in the 1880's on the tote road between Northeast Carry and Chesuncook Village. This was bought by the Company in 1909, and was used by river drivers and "trippers" until some time after the road from Lily Bay to Ripogenus, which we have described, was completed in 1914, when it was abandoned. A stable for 8 horses and 12 cows, with hay storage, was built there in 1917, but it burned shortly. The boarding house was still standing in 1932, but that is the last we know of it.

We now turn to the eastern or Grant Farm side of Moosehead, starting at Lily Bay. From The Northern of July, 1926, we find
that a farm and boarding house -- the Lily Bay House -- were established there some time before 1876 by Oliver and John Eveleth. The buildings on the place were originally a small frame house with an office and four rooms on the first floor; two bedrooms and a ram pasture or "bull pen", another name for it, upstairs, and it catered mostly to the woodsmen and river drivers going and coming. It was operated for the Eveleths by Charles Mansell, and then by his two sons. Also some time before the above date it was bought by M.G. Shaw & Sons, who in that year enlarged the house considerably, employed a manager, and established a stage line from Greenville to Roach River (Kokadjo), operating over the tote road, the only route from Greenville. In 1904, they sold the Lily Bay House to Hollingsworth & Whitney, who used it as headquarters for their operations, but also continued to run it as a transient boarding house. They also built a wharf and storehouse nearby. It is our understanding that at some early point in Great Northern's operations, it leased part of the storehouse from Hollingsworth & Whitney, with the right to use the wharf.

We do not know the date of the first Company storehouse, which blew up and burned in 1914. The one that replaced it immediately was built on the old H. & W. wharf, which was widened. The new storehouse was 40 ft. wide and 208 ft. long, with a heavy frame, boarded in and covered with tar paper, which, from photographs, must have been replaced at some time with roll roofing, very neatly applied. As we have noted in another place, it was provided with a conveyor running right down the middle. Power for this came from two Fairbanks-Morse oil engines in a separate engine house. A new ballasted pier, 40 ft. square, was built in the lake,
about 20 feet out from the storehouse, to which it was connected by a bridge, the conveyor running out onto this under a roofed shelter, and out the other end under a similar one, the extremes of the conveyor being adjustable up and down to allow of loading and unloading at different levels. There were also a "tractor engine shed" and a steel garage, 28 ft. x 112 ft. at this location some time before 1916. We have no information on the former, but the latter, as we have noted in other places, was cut in two in that year, half being moved to Pittston and half to Seboomook. Great Northern never owned the Lily Bay House, but leased it from H. & W. in 1917, and put in a Company manager. At this time the road from Greenville to Lily Bay was still not much more than a tote road, and nearly all freight traffic was by water, at least during the open season. There was quite a farm at this place too, but we do not know what, if any, the facilities on it may have been.

This brings us to the Grant Farm, the real center of Company activity on the east side of Moosehead. The Old Moosehead Guide says that it was in 1840 that Thomas Grant cleared land there and put up a log house. This date is probably right, as a number of settlers moved into the area around Moosehead at that time. Anyway, it was before 1841. As was usual with such places, it became a way-station for woodsmen, river drivers and toters going to and from operations as far up as Chamberlain Lake. Tom Grant was one of the "explorers" mentioned earlier in our story, searching out stands of pine for the lumbermen, and was killed in a fall from the top of a tree. The property then came into the possession of a Miles Patterson, who in 1878 sold it to John Morrison and F.H. Hunting, or Morrison & Hunting, who, it appears, were then...
operating the stage line established a few years earlier. By that
time the original log camp had been replaced by a hewed frame
structure covered with "splits" -- some called them "splints",
as we did earlier -- which they continued to operate as a boarding
house. In 1892, a large new frame house, a barn and a blacksmith
shop were put up by Frank Morrison, the son of John Morrison, and
the old buildings were torn down.

A large part of T.2 R.13, and with it the Grant Farm, was
bought by the Great Northern Paper Company from Frank Morrison in
1901, and for some years it was used just as it stood. A post
office, called "Morrison", was established there in 1904. The
name was changed to "Grant Farm" in 1906, but in 1910 the post
office here was discontinued and moved to Kokadjo. The Company
began to enlarge the place for its purposes in 1909 with the
construction of a storehouse, a clapboarded frame building with
gable ends, 24 ft. x 100 ft., containing grain bins, wangan rooms,
equipment racks and heavy hardware storage. This building, which
cost $3,000, could hold 4,500 bushels of grain, 400 barrels of
flour, and other food supplies to match. Some improvements were
also made to the existing barn, which had a heavy hewed frame
and was in good shape. This building, 50 ft. x 100 ft., with an
18 ft. wide shed attachment the whole length of it, could hold 63
horses, 10 cows and 100 tons of loose hay; and, as at the other
farms, pig pens were put in the masonry basement.

The real work did not start until 1910, when the existing
farmhouse was nearly doubled in length, making it 32 ft. x 84 ft.,
dormer windows were put into the attic space, and a steam heating
plant was added. This made a boarding house with 17 bedrooms, a
dormitory for 60 to 90 men, with kitchen, bath and laundry. A
small frame building, 12 ft. x 26 ft., of unknown date, was moved
to a location near the barn and made into a harness shop; a 24 ft.
x 30 ft. blacksmith shop for 6 horses at one time was built, along
with a 16 ft. x 38 ft. guest cottage with steam heat, a fireplace,
two bedrooms and bath; a frame wagon shed 22 ft. x 95 ft., with
five open and three closed bays, one used for a time as a slaughter
house; a small ice house, and a new Ferguson gambrel-roofed barn,
46 ft. x 105 ft., with a harness storage room in the loft, capacity
50 horses and 225 tons of baled hay. In 1911, a hen house for
250 hens was provided, and in 1912 a 34 ft. x 69 ft. potato house,
with a loft for machinery storage and room for 6,000 bushels of
vegetables, was built on the site of an old structure of the same
nature. This, incidentally, burned in 1926, and was immediately
rebuilt from the original plans.

There was no more construction until 1915, when a new two-
story office and store, 24 ft. x 38 ft., with a 12 ft. x 14 ft.
ell for the paymaster, was provided. This building also had
steam heat and washrooms, and could sleep 10 men. A 225 ft. deep
well was drilled and fitted up with a Fairbanks-Morse gasoline
ingine; an underground concrete reservoir was constructed, and a
system of distribution pipe was installed. A slaughter house,
32 ft. x 48 ft., sheathed with steel inside, with a trussed roof,
overhead trolleys, a 15 h.p. boiler, a 4 h.p. steam engine,
scalding tub, lard kettles and all the other necessary appurten-
ances, was built. The 1910 ice house was torn down, and a new
combined ice house and wood shed, the former containing two refrig-
erated rooms, one for meat the other for dairy products and eggs, with 7-1/2 tons of ice storage; the latter open in front and holding 100 cords of fire wood, was erected. A sectional steel garage, to hold 5 cars, with a repair shop in one end, was put up. This had steam heat and a 30-volt D.C. lighting system, the heat and light plant being in a small adjoining concrete block building. A small old building which had originally been a hen house, then a bunk house, was moved to the outskirts of the farm to provide storage for 12 to 16 tons of dynamite; an open equipment shed, 24 ft. x 60 ft., boarded and covered with roofing, was constructed, and an 8,000 gallon gasoline tank, arranged to be filled from drums toted up to the farm, was provided.

With these things done, the plant at the Grant Farm, as far as our information goes, at least, was about completed. Another open equipment shed, just like the first, was added in 1920, and a small cow barn for five animals was built in 1922. A light plant must have been put in at some time, as all the buildings were wired, but we have not found record of it. As at Pittston, all the buildings, except as noted, were of good frame construction on masonry foundations, and with a few exceptions like the steel garage, the open equipment sheds and the cottage, which had stained shingles, everything was painted white.

We should perhaps at this point take note of the Chesuncook Farm and Chesuncook Village at the head of the lake, although these were separated from everything else, and could be reached only by water or by the tote road. As we write this in 1974, there is still no other way to get there. Although we admit to rather casual research, we have found surprisingly little information
about this place, which was material to operations in the area, and of the greatest importance in river driving.

According to Alfred G. Hempstead in "The Penobscot Boom" someone unknown had cleared some land there as early as 1838, but there was no habitation until 1849, about the time lumbering operations began in that area. We quote from the segment of F.S. Davenport's series "Some Pioneers of Moosehead, Chesuncook and Millinocket", in The Northern of August, 1922.

"In 1849 the land was so far cleared that two or more Smiths (including Ansel Smith) came here and built the original log shanty...a spacious low building, 80 feet long, with very large apartments, had large stone chimneys and was roofed with spruce bark....One end was the regulation loggers' camp for the boarders...The cellar was a separate building like an ice house; a potato and vegetable hole. There was a large framed barn, uprights and beams hewed by hand...the boards sawed by a whipsaw at a saw-pit close by. There was a large vegetable garden...a hog house, a milk house, a blacksmith shop, all built of logs...The blacksmith shop...had often a half ton of bar iron in one batteau load from the North Fast Carry. Much work was done at this shop in making, ironing and repairing sleds and in shoeing oxen and horses."

Again referring to "The Penobscot Boom", we find that John H. Eveleth of Greenville acquired the place about ten years later, and in 1863 he and his partners, L.H. and L.S. Folsom, built the two and one-half story frame hotel known as the Chesuncook House.
By this time other people had begun to settle there, and by 1900 the Village was large enough to have its own post office.

We suppose that the first Company buildings in that area were owned by the subsidiary West Branch Driving & Reservoir Dam Company, and there is no record of them. We have never been able to straighten out what was carried on whose books. Although technically the W.B.D. & R.D. Co. ran the drive, the boats were all marked "G.N.P. Co.", and to confuse things, there was a transfer of property, like the storehouse on the wharf at the Chesuncook Dam, from the W.B.D. & R.D. Co. to Great Northern in 1916. The Company must have had some property at or near Chesuncook Village from an early date, but the earliest record we have found is of a boom house, built in 1911. This was replaced by one brought up from the Chesuncook Dam, and in 1923 it was moved, rebuilt into a church by the Company, and presented to the village.

The Chesuncook Farm, as best we can determine, was mostly a purchase from Jule Pease in 1912. It had on it a 40-horse stable, a smaller stable, a cookhouse, a two-story storehouse and a blacksmith shop, all clapboarded frame buildings. The small stable and the blacksmith shop were moved to Gero Island, where horses were taken for pasturing, in 1917, after the level of the lake had been raised. The Village cemetery, incidentally, was on a point of low land on the lake shore, and this was moved by the Company for the same reason in 1916. Great Northern also owned a couple of houses, no date, and according to our information, it also bought the old hotel at some time, and leased it to an outside operator. It is still in existence as this is written, but the
Chesuncook Farm and any other property the Company may have had at this place was, we believe, turned over to the State in the 1974 Public Lots deal.

The development of the road system on the east side of Moosehead was piecemeal, as it was on the Kineo side -- and we have not quite finished with that yet. As we have noted, there was a road of a kind, little better than the old tote road, from Greenville to Lily Bay when the Company bought the Grant Farm. It started picking at the road from Lily Bay northward in 1910, and was up to Kokadjo, after a fashion, when the Ripogenus Dam job was started in 1914, and the "turnpike" which we have described, all the way from Lily Bay to the Grant Farm, and from there to the damsite, with a side road in to the old Chesuncook Dam, was built as two separate contract jobs. The terrific grade on the north slope of Sias Hill in T.l, R.13, a little south of the Grant Farm -- some records call this place "Cyrus" hill, but this is not correct -- was cut down some in 1920 by the redoubtable Jim Sargent, who was involved in one way or another with almost every piece of Great Northern road construction, but we find a note in 1925 that "only a few cars...can make the hill in high". We might say that there was quite a little installation at Sias Hill. Two log hovels and a log bunkhouse were built there in 1913. These had been demolished by the 1920's, but a peeled log Cook-Bunkhouse of the same vintage remained, along with a newer four-bay, two story garage, clapboarded and white-painted, the upper floor presumably living quarters, a 36 ft. x 123 ft. equipment shed, part open, part hovel and part blacksmith shop; a gasoline tank and oil house and a well and pumphouse, on none of which we have any dates.
We are not sure what may have been at the old Chesuncook Dam before the Company's West Branch Driving & Reservoir Dam Company took over from the old Penobscot Log Driving Company, but we know that there was a wharf, a storehouse, a boom house, and probably a stable. A new storehouse was built by the Company in 1912, but we do not know what happened after that, and we have no dates for the buildings, that were there in the 1920's. There was then a second big storehouse on the wharf, which would have been built when the level of the lake was raised by the new Ripogenus Dam in 1916, and the other buildings were probably constructed at that time, as a boom house -- on the river the same thing as a cook-bunkhouse -- built in 1905, was moved to Chesuncook Village in that year. There were a coal pocket and an oil storage tank on the same waterfront as the wharf. On the high ground between the wharf and the south end of the old dam there were a good-sized two-story frame boarding house, steam heated and with its own electric lighting plant; an ice house; a small barn; a gasoline storage tank and oil house; a pump house on a drilled well, and a few other small buildings, all painted white, although here somebody's taste ran to some green trim. One of these buildings was being used as a school house in the 1920's and 1930's, the State supplying a teacher. A little way out on the road toward Ripogenus, was a sawmill, which was probably the one that sawed for the dam construction.

It is doubtful whether there was much of anything around Ripogenus before Great Northern came to the West Branch, but after the new dam had been constructed, there were two neat two-story houses, a well and pumphouse, a wood shed and a hen house, and a
little refrigerator plant on the south slope of the hill around which the road ran as it approached the dam; across the road a two-story office building and a bunkhouse or boom house, a small stable and a small garage. Nearer the dam, on the water side, were a much larger stable, built in 1915, that would hold perhaps 30 horses, and a boat house. Again, all of these buildings, except the large stable, which was boarded and covered with roofing, were frame structures, clapboarded, wearing the usual white paint.

The new dam provided a bridge across the West Branch, and in 1916, as the job came to a close, Joe Mullen started to build a road northward from it, but got only as far as Frost Pond, about two miles. This was a dirt road, and was not surfaced until 1919. At that time, a rock cut just north of the dam, barely wide enough to get through, was opened up further. In 1920, a winter tractor road was built by a contractor, following the old tote road, from Frost Pond to Duck Pond, about four miles, and on up to his operations around Soper Brook and Sourdnahunk Stream. In 1921, Jim Sargent ditched and gravelled the first four miles of this, and in the next two years, under the direction of George O'Connell, another eight miles, almost easterly from Duck Pond, meeting the Sourdnahunk tote road at Sourdnahunk Stream, was completed. In The Northern of December, 1922, we find the following:

"Sept. 28, 1922. Mr. George O'Connell, Superintendent of Duck Pond and Sourdnahunk road construction, went over the road in his car as far as Sourdnahunk Stream, crossing the bridge over Sourdnahunk Stream -- the first person to drive an automobile into the Sourdnahunk country.
The same day after work was through for the day, Ralph Drinkwater drove his Ford car as far as it was possible to go up the old Sourdnahunk tote road over Corduroys, rocks, stumps, water and mud holes. The tote road in places was worn down so that the banks on either side were higher than the wheels and the hubs dragged pretty hard in some places, but by the combined efforts of all, including the car, managed to get in sight of Sourdnahunk Lake. Amos Workman, Dynamite Murphy and Bert Wallace were with Drinkwater on the trip. Lots of people thought it was impossible and (some) said foolish, but it was a trip to wonder at, and a Ford will go almost anywhere!"

These men were from one of the road construction camps, and it looks as though they were out to show up the boss.

In the meantime, in 1919 and 1920, the 12 miles of glorified tote road from Greenville to Lily Bay had been built into a real road, and in the words of Normand Smith, one of the Company's best-known inspectors, in The Northern of September, 1925 -- a surprisingly large number of the Spruce Wood Department people expressed themselves in verse --

"When one for business made the trip
In a spring or summer month,
He went to Lily Bay by boat
And stopped to get a lunch;
Then to the Grant Farm on a stage,
Seventeen miles away,
Over the rough old tote road -
The trip took near all day

Since the Northern built the turnpikes,
We use the stage no more;
We go further now in one day
Than we did then in four.
They plow the snow with tractors
And keep the turnpike clear,
And use their trucks and autos
At all times in the year."

There may have been some minor improvements to the Sourdnapunke tote road during the next few years, but other than that, to the best of the writer's recollection, what we have described was the Company's main road system in this area until after World War II. Several starts were made at each end of the tote road from the Grant Farm to Northeast Carry, but improvements were never completed. Another road, built in the 1920's, was for a specific operation, and was abandoned. The upper parts of the Boundary and Caucomgomoc roads fell into disuse during the depression of the 1930's, the latter being restored within a relatively few years. The former, which became and remained impassable for a long time, has lately been put back into use. The section from Greenville to Lily Bay has become a public way, but all the rest that we have told of is at this time still maintained as part of the Company's complex of private roads.

The places we have described as being the bases for Great Northern's operations on the South Branch, the North Branch, the
upper West Branch and the upper St. John River were essentially fully developed by about 1920, when they were as we have pictured them. There were some later additions at the Pittston Farm, which we have recorded, and there may have been some at other points, that we have not caught up with, but if so, they are not material to our story. Their original character was determined by dependence upon transportation by water and by horse-drawn vehicles, and was modified by the arrival of the truck and the tractor. While it would be of historical interest, we cannot with assurance pin-point the time when many of them ceased to serve their purpose. They all became less important as places for large numbers of men to stay, and in other ways, after the late 1930's, but it is our recollection that many of them, apart from the Kineo operation, were active to some degree until after World War II. The Pittston Farm, the Grant Farm, the facilities at the old Chesuncook Dam, the Greenville Shop complex and perhaps a few other places were active until the skidder practically put the horse out of business in the late 1960's, and for a few years more, until river driving was legislated into history and came to an end in 1971. They went with it, physically or figuratively.

The Kineo operation was the first important victim of the age of motor vehicles. In 1931, the State finished the highway from Jackman to Rockwood, and in 1934 it was built down to Greenville. On July 1st of that year the first trucks rolled away from the Greenville Junction storehouse, headed up-river, and Kineo was redundant. Within a few years the usable machinery there had been moved to Little Squaw, and everything else had been sold, or had
been torn down and the land sold. We have explained what happened at the Pittston Farm. The operation at Greenville Junction was moved to Millinocket, and the property has been sold. At the Seboomook Farm there is nothing but a tourist campground, and while a few buildings still stand, there is, as this is written, no Company activity at any of the places we have told about, except for an office at the Grant Farm and one for a road guard at Sias Hill.

We said back a way that the operations on the lower West Branch were handled out of Millinocket, and the Spruce Wood Department had two installations in that vicinity -- three in the early days. The first was the Rice Farm, which was built on the piece of land on the left bank of the West Branch three miles or so below Millinocket, bought from James Rice in connection with the construction of the East Millinocket mill, and which at time of purchase was on the road between Millinocket and Burnt Land Rips. As we said in another place, it was originally intended for log driving purposes, as the P.L.D. had the drive below Shad Pond, and Great Northern logs would have had to be sorted out at this place. However, while it was so used, it also quickly developed into a substantial farm operation. A one and one-half story storehouse for 50 tons of miscellaneous supplies; what was later called the "Old" stable, a shingled hovel for 28 horses, and the "Middle" stable, for 15 horses, 6 cows and storage for 30 tons of loose hay, were located there in 1907, these probably being the buildings moved up from the Powers Farm in the middle of the Dolby flowage. In 1909, a harness shop, a 75-ton ice house and a boarding house -- a one and one-half story frame building with central heat, five bedrooms and a ram pasture for 18 men were built. A new 50-horse Ferguson barn, with storage
for 250 tons of baled hay, and a water system -- a drilled well with both windmill and hand pumps and a 9,000 gallon cypress storage tank on a 30-foot steel tower -- were added in 1910, and in 1912 and 1913 a hen house for 75 hens, an open shed to hold 10 wagons, and a steel boat house for a 28 foot motor boat were constructed. All the buildings were, as usual, painted white. At one time there were a couple of small neat mill-canvas-covered shelters also white-painted, for the river driving crew. We believe that the Rice Farm was operated up through the World War II years; we have found it impossible to pin down the dates when some of these places became inactive. The boarding house and a few other buildings remain, but the property has been leased to others for more than twenty years as this is written.

A storehouse for 75 tons of supplies was built at Millinocket, just across the tracks from where the Bangor & Aroostook station was originally located, in 1909, along with a small building used later as a bunkhouse for a couple of feeders. In 1913, another frame storehouse, 24 ft. x 75 ft., boarded and covered with galvanized iron, with bins for 4,000 bushels of grain and space for 85 tons of food supplies and equipment; an office in one end; another 50-horse Ferguson barn, differing from all the others in that the entire loft was floored over instead of being open down the middle, which allowed storage of 300 tons of baled hay; and an open shed for 10 wagons, were built, and fuel storage tanks that could be filled from cars on the siding were provided, and in 1918 a dynamite storage house was built. There have been many changes in this place, particularly in the last few years, since the closing of the Greenville Shop, but the last time we looked, the 1913 barn and
storehouse were still there, and although they now contain only oil, grease and machine parts, this alone, of all the places we have described, is still an active operation. In the early years, there were a storehouse, a bunkhouse and an office at Foster's Field, up the Sourdnahunk tote road above Spencer's Carry, which served the purposes of a swing like the 10-Mile, but this had been closed down by the early 1920's. Then there was the White House, a boarding house at the mouth of Nahmakonta Stream, connected by a good road to Third Debsconeag Lake. We first heard of it in the 1920's, and it had been there for some time then. Possibly it had something to do with Charley Gilbert's big operations around Debsconeag, but we do not think it was built in that connection, and we have not found it in the Company's records. We just do not know anything about it except that it was there.

Access to the Kennebec area was relatively easy, and there were really no installations over there comparable to those for the West Branch operations. The nearest thing was the Holeb Farm, on the C.P.R., which came with land bought in that town in 1899, and was operated as a depot and hay farm for many years. At this place, when it was purchased, there were a storehouse which would hold about 50 tons of supplies, a two-story frame office building with two ells, the upper floor a storehouse; a one and one-half story blacksmith shop, also with a storage loft, and three small stables that would hold maybe 40 horses. There was also a boarding house, which burned and was rebuilt about 1919, the only new construction of which we have record. The original buildings were all framed, with board and batten walls, but the new boarding house was roofing-covered. The Holeb Farm was active in the late 1920's.
but probably not much longer. There was an old 40-man boarding
house and a stable at Soule's Mill at Kingfield, bought in 1909
and also in use at least into the 1920's, and there were the
Burns Farm at Madison and the Briggs and Fletcher Farms at Anson,
each with a house and barn, bought from other parties and used
mostly for pasturing horses; there was the Blair Farm at Greenville, where Fred Gilbert kept some of his driving horses, and
there was a little farm on Alder Stream, from which place we have
an amusing little letter, hand-written on ruled note paper with a
rubber stamp letterhead:

"ALDER STREAM

July 21st 1917

As i dont know who to write abought the poison for the
potatoes at Alder Stream i am writeing you

We have got abought 5 acres in here and have got
no poison yet and the bugs are getting mighty thick
and no body comes in here that knows enything about
the farming. Will you please see that i have some
poison at once and oblige

F.S. Watson"

All this is far from a full tally of the installations
involved in the service of supply. There were storehouses at
places like Cheney Pond, Crawford Pond, Cuxabexis, Dagget Pond,
Duck Pond, Farrar Brook, Grant Brook, Hurricane Pond, Jo Mary,
Nahmakanta, Norris Brook, Penobscot Lake, Russell Stream, Soper
Brook, Sournahunk Lake, Wood Stream, Bigelow and Carrabassett --
this is not the whole list -- mostly dating from the 1909-1912
period, before the big places we have described were developed.
These had pretty much served their purpose before the end of the
1920's, but they were all coexistent for some years with the larger
facilities. They are all gone. There were also several much more

Spruce Wood - 113
substantial developments in connection with certain large operations, torn down or abandoned when these were completed. We will tell what we can about some of these, and about developments in Aroostook County, later in our story.

It will be noted that all the big up-river installations had potato houses, really root cellars, and the places that were called farms were, in addition to their other functions, just that. Up until about 1920, production figures available are for potatoes, beets, carrots, cabbage, turnips, hay and oats only, and these were the big items, but other things were grown. Just for example, in 1926, a year picked at random, the Grant Farm, the Pittston Farm, the Lily Bay Farm, the Rice Farm, the Seboomook Farm and the 40-Mile garden produced 957 lbs. of beans, 4,358 lbs. of beets, 8,634 lbs. of cabbage, 4,745 lbs. of carrots, 1,120 ears of corn, 903 lbs. of squash and 557,992 lbs. of potatoes, in addition to lesser amounts of beet greens, cauliflower, celery, cucumbers, endives, lettuce, onions, parsley, parsnips, pumpkins, peas, rhubarb, radishes, spinach, swiss chard and tomatoes. Some of this stuff was obviously for the boarding houses, not for the camps. In this same year, the same places grew about 15,000 lbs. of oats and 995,000 lbs. of hay. In addition, another 324,000 lbs. of hay, for a total of 1,319,000 lbs. was grown at Kineo, the Blair Farm, the Chesuncook Farm, the 10-Mile, and in Aroostook. The Chesuncook Farm grew mixed crops until 1922, but after that it raised only hay, and in going through the figures, it appears that no very large crop of oats was grown anywhere. Lily Bay seems always to have run more to hay and potatoes than to other produce.
As best we can remember, farming operations were not continuous at all places, but we know that they were conducted, at least to some extent, up through the World War II years, as there was a hassle late in 1946 over payment of Social Security taxes on the wages of boarding house employees, and we have draft of a letter on the subject, prepared by Tom Allen, which reads in part:

"The Great Northern Paper Company owns and operates a number of farms, on which it raises crops such as hay, oats, potatoes, beans; and pasture(s) and care(s) for horses held in reserve for woods operations and also raise(s) and care(s) for certain live stock such as cattle and hogs."

However, again to the best of our recollection, the raising of crops, except hay, had been pretty much phased out by 1951. According to William Hilton, it was never really profitable.

We must not neglect the telephone system which connected, in one way or another, all the places we have mentioned, and provided communication with the woods camps from an early date. We do not know as much about it as we would like, but can give some sketchy information.

It is said that the first telephones on the West Branch were installed by Fred Gilbert, who ran a line from Canada Falls to the Pittston Farm in 1892, in connection with his logging operations in that area. In 1897, according to the Old Moosehead Guide, a group of Greenville people formed what was known as the Kineo & Northeast Carry Telephone Company, primarily to serve the hotels around Moosehead Lake. This company ran a line connecting the Kineo House, on the east side of the lake, with the Ross Farm,
the Winnegarnock House at Northeast Carry, and Chesuncook Village. In 1899, the owners of sporting camps at the little settlements that were being built at Rockwood and around the mouth of Moose River installed a cable across the lake to connect up with this system. The New England Telephone & Telegraph Company extended its service to Greenville in 1901, and in that year the Moosehead Telephone & Telegraph Company was organized, the Company buying some of its stock. This company absorbed the Kineo & Northeast Carry, and extended service to Jackman and beyond; to Rockwood, Seboomook and the Pittston Farm on the west side of the lake, and to Lily Bay, the Grant Farm and Kokadjo on the east side. In the same year Great Northern built its first piece of telephone line, from Chesuncook Dam to Millinocket. We have found no means of following the development of the Company's system in detail, but in the next few years additional lines were strung on both sides of Moosehead, and communication was established with all the larger operations, up as far as Sourdnahunk on the east and the North Branch on the west.

It is our understanding that these early lines were of the grounded type, using a single iron wire, strung on trees or whatever, but these were gradually replaced, first with two-wire circuits on poles and then, as the system grew, with multiple trunk lines on cross-arms, these main lines running from the Pittston Farm and the Grant Farm out some distance along the roads we have described, with either ground or two-wire connections, depending upon the circumstances, into various operations and along the river, where the telephone became a great help during the driving season. It is said that in the early years one lineman, with some
help from the timekeepers in the areas near the camps, took care of over one hundred miles of wire.

The system was placed under the Division of Forest Engineering, according to information from The Northern, in 1911, but actually probably in 1913, as there was no D.F.F. as such until that year, and a second lineman was put on, one working out of the Pittston Farm and the other out of the Grant Farm. At this time, as far as we can gather, there were no switchboards or operators, the lines running from one place to another, with switches at intermediate points so that if one wanted to talk with some operation he called the first place on the line, and the clerk or the cook there switched the call to the next point, and so on.

Up until 1918, there was no link between the two sides of the lake except through the Moosehead Telephone & Telegraph Company, but in that year a Superintendent of Telephone Maintenance was appointed, and a line was run from the Grant Farm to Five Islands, in Burbank, to make a connection. Starting in 1921, the whole system was overhauled and improved, the maintenance crew was enlarged and became an important unit in the organization; the iron wire on the trunk lines was replaced with copper, and pole lines were extended up to Sourdnahunk, Caucomgomoc and some of the other more distant points still served by the old ground circuits. We have no information as to when switchboards and operators were established at the Grant Farm and the Pittston Farm, but we would guess that it was at this time. Anyway, the West Branch system was completed by the middle 1920's, at which time, again according to The Northern, there were some 200 miles of pole line along the turnpikes and about
500 miles of ground line in use. New woods lines were of course continually being constructed as operations were relocated, and old ones were removed, or were sometimes left in place for possible future use. While there were some changes later, the greater part of the Company's telephone system was maintained as the principal means of communication with woods-connected activities until after a radio system was developed, starting in 1952. We do not know how the Northern Maine Telephone & Telegraph Company which we have mentioned fitted into this picture. It is just a name from the records. We have made no effort to follow any Company telephone system there may have been in Aroostook County. Now let us turn to an entirely different subject.

We have had a great deal to say about the woods horse. It was a fragile piece of machinery that had to be fed, watered, groomed, shod, rested and sheltered; it was subject to disease and injury, and until just a few years ago, it was indispensible. Great Northern always favored horses, even when oxen were still popular, although as we have noted elsewhere, it bought some of the latter as late as 1910, and some of its contractors used them for some years after that. The Company tried some mules, too, at some unknown early time, but they were not satisfactory.

There were all kinds of horses. They had character. Some were gentle and some were mean. Some were sluggish and some were nervous. Some were willing and some were lazy. Almost all of them could be used for hauling, but some were not good at yarding -- dragging logs chained by a "choker" to a short whiffletree; from the stump to a yard, where they were accumulated for hauling in the old long log days, or where in later times they were sawed up and piled

Spruce Wood - 118
as short wood. A good yarding horse learned to stop when the log caught on some obstruction, maybe leaning into the collar a few times first, but a poor one thrashed about and sometimes injured itself under the same conditions. The experienced ones, after going over a twitch trail a few times, often could be trusted to take the stick out alone, and we have seen a number who were smart enough to lay it right on the skid without direction. Contractors mostly had their own horses, but we are told that some of them, particularly those brought in by the Quebec men, were too small to be really effective, although they were mostly experienced and accustomed to the climate, this last often a problem with animals brought in from other parts of the country. The Company liked mature horses, 7 or 8 years old -- over 10 years of age they were considered to be unsuited to hard work -- weighing 1600 to 1700 pounds. Some operators preferred short-legged beasts that could start heavy loads; some preferred longer-limbed types, which, according to them, could get about more easily in snow. However, there was room for both, as all were not used in actual woods work, being employed in toting, road construction and all kinds of things; even on the drive.

Books were set up on them. Records were kept on their original cost -- $200 to $300 for the years on which we have the information; 1912 to 1928; their average food consumption; the cost of boarding them, and what happened to them. They were depreciated like any other piece of equipment, and care was taken to get reimbursement when they were let out to others, as illustrated by the following:
January 31st, 1913

Mr. P.F. Whalen
Bangor Office
Dear Sir:

We are transferring horses back and forth from the mills of the Company. We recently sent a pair of gray horses and a driving horse to Madison and recently sent three horses to Fast Millinocket Mill. They also have some horses they have kept. They returned an old horse to the Rice Farm....and he was sent to Bangor to be sold. He boarded some time at the Rice Farm. There will be a bill of expense on him down there and Commission for selling. Would like for you to follow this thing and see that we get proper credits out of the same of the horse for his board, freight and expenses; also, see that the horses at Madison are charged, and all horses that we have at the mills at Millinocket or Fast Millinocket at the present time want to be billed up to the mills.

Yours truly,
Great Northern Paper Company
By: F.A. Gilbert

The number of horses owned by the Company at different times varied greatly, for many reasons. The size of the cut, the number of contract operations, hauling distances, peeled wood operations, which spread out the season, and as time went on, the development of mechanical equipment, all had an effect. We know that in 1917 and 1918, the earliest years for which figures are available, it had about 1,200, and it probably had about that number back to 1910
or thereabouts. This was the reason for the big stables in so many places, as horses had to be conditioned after their winter's work. As we have noted, they were brought out to Bangor before the farm system was developed, the Strout Farm at Hudson being one place where they were pastured, but in 1920, we find that 800 of them were "springing out" at Millinocket, the Rice Farm, Kineo, the 10-Mile, the Pittston Farm, the Seboomook Farm, Soule's Mill, Lily Bay, the Grant Farm, Ripogenus, Gero Island at the head of Chesuncook Lake and Monticello in Aroostook County. Somewhere back in the early years, as an experiment, 38 horses were simply turned loose to fend for themselves in places where there was good pasture along the North and South Branches, and when rounded up in the fall were found to be in good shape. This custom was continued for a long time, 175 being scattered around this way at one point in the 1920's. From 1919 through 1922, when trucks had taken over much of the toting, the average was about 800. Tractor hauling became well established in the 1920's; there were a lot of large contract operations, and the number dropped to a low of 214 in 1925, when it began to increase, and in 1928 there were 600. From that time on we have no figures. As best we can recall, for the next ten years or so there were not more than four or five hundred, but at some point heavy purchases were made, mostly western horses, and we know that the total went back to over 1,300. We do not remember exactly when this was, and nobody else seems to know either, but by rationalization, it would have been in 1939 or 1940, when motor vehicle equipment began to be hard to get. After the war, the numbers decreased again, probably into the middle hundreds.
As the trucks took over hauling, as we will explain later, horses began to disappear, and by 1951 the Company had none on the West Branch. In Aroostook County, where there was more yarding, there were perhaps a hundred Company horses in that year, but we believe that even these were gone a few years later, being replaced by animals hired from horse labor contractors, which were used to some extent until the late 1960's, when they were almost entirely eliminated by the skidder, with which Great Northern began to experiment in 1959 or 1960. The horse is no great factor in the woods now, but strange to say, as we write this the number of them in small operations is increasing, and the hay-burner may be around until equipment more suitable to little operations than the mechanical behemoths now in use is developed. So much for the horse, who probably put more collective sweat into the building of the Great Northern Paper Company than all the human beings who ever worked for it.

At this point, we should say that the best intelligence we have on many of the little details that add meaning to any narrative is from the years between the World Wars, and fortunately for our story, this period was in many ways the most interesting in the history of the Company's woods activities. This was the time that the older people still around look back at with nostalgia, and the time when the morale in the organization was at its height. Of necessity, therefore, and to some degree by choice, we will lean heavily upon information about this era, using it in some cases to assist us in backing up into what it was like in the years before, and treating the later years, when everything seemed to become almost routine, more casually.
We now come to the time when we should tell what we can about the development of the use of motor vehicles, which is really not much. Information is disappointingly scarce, and while there are probably a few sources which we have not tapped, we have, very frankly, become discouraged with the results of past research on the subject. We will begin with the tractors.

The place to start is probably with the old Lombard Steam Log Hauler, although it was never called a tractor, and which perhaps not many people realize was the grandfather of the bulldozer, the military tank, and even of the equipment used to move our huge space exploration rockets into position.

A lot has been written about this first practical track-laying vehicle, designed by Alvin O. Lombard, (1856 - 1937) a native of Springfield, Maine; woodsman, sawmill operator, millwright, self-taught mechanical genius, inventor of the Lombard water wheel governor, a number of pieces of wood room equipment and a lot of other things, and connected in some way with the Waterville Iron Works, of Waterville, Maine, where most of his machines were built. We are indebted to Prescott L. Howard, of Biddeford, Maine, with whom the writer corresponded at some length on the subject many years ago, and who was the author of an article "The Era of the Lombard Log Hauler" published in the Spring and Summer 1962 edition of Forest History Magazine; to L.A. Rogers and C.W. Scribner, Curators of the Patten, Maine Lumbermen's Museum, who published a story entitled "The Log Haulers" in August, 1967 issue of The Northern Logger, and to Philip T. Coolidge ("History of the Maine Woods" -- Furbush-Roberts, Bangor, 1963), all of whom drew on other sources, for most of our information.
The principle of the track-layer was not new. It had been conceived in England as early as 1770, and half a dozen people had turned up with the idea over the years, one even obtaining a patent on it in 1859, long expired when Alvin Lombard constructed his first machine. He did not even have the original thought that there ought to be a better way to move logs than with horses -- James and Ira Peavey, of Bangor, had built in the 1890's an experimental steam-powered log hauler propelled by a helical screw arrangement that worked pretty well on ice, but was no good in snow and never was used commercially -- and the suggestion that he turn his attention to the matter is attributed to either Johnson Woodbury, of Patten or F.J. Lawrence, of the lumbering firm of Lawrence, Newhall & Page, but he was the man who designed and built the first workable crawler-tread vehicle and the first practical mechanical log-hauler.

To the best of our knowledge, all the Lombard steam-powered log haulers were what we would now call half-tracks, and they all weighed in the vicinity of 20 tons. His prototype, produced in 1899, is said to have had a horizontal boiler, a cab at the rear for the fireman and engineer, and fuel storage; the crawler treads toward the rear of the boiler, and a pair of sled runners in front. It was steered by a team of horses hitched to the front sled -- the first application of power steering, maybe. This lash-up, as far as we know, was driven only around the fields and pastures, and never got into the woods, but it proved that the idea would work. During the next year a more sophisticated machine was built, and we have been told that it was used on a Lawrence Newhall operation in the winter of 1900-1901. This one probably had a vertical boiler and engine; the accounts differ, but we know that the early
models had these features; one such being used on an operation on Alder Stream in 1903; and it had a geared steering mechanism, the steersman sitting on a box over the front runners. It is also said that around this time he tried an electrically driven machine, which took power from an overhead trolley wire. Unsuccessful, of course.

Alvin Lombard patented his machine in the United States and Canada in 1901, formed the Lombard Traction Company, or the Alvin O. Lombard Traction Company, or the Lombard Traction Engine Company -- all three names appear in the accounts -- in which his brother Samuel seems to have been involved, and got into production at the Waterville Iron Works in that year, a small shop also being established at Woodstock, N.B.

We will not go into the evolution of the log hauler except in a perfunctory way. The early vertical boiler soon disappeared; an attempt was made to drive each track from a separate engine, but this was abandoned because the machine jumped up and down when they got into synchronization; and it assumed pretty much the configuration of a locomotive, the crawler treads, with the front sprockets driven by chains from a differential, under the rear of the boiler; the horizontal cylinders, crossheads and cranks ahead of them; sled runners where the bogey wheels and cowcatcher would be; the smokestack in front, and an oversize cab at the back. For a number of years, the steersman sat in the open, over the runners, mercilessly exposed to the elements, the smoke and the cinders, but later on another cab, open in front, was built around his seat. In the late units, a saddle tank design was adopted. There were a lot of difficulties with the early
models, notably because they contained much cast iron that broke in frosty weather, but these were overcome; coal took the place of wood for fuel; acetylene and later electric headlights were added, and it became a very rugged and reliable piece of equipment, albeit expensive to operate. When used to haul a train of sleds, the crew consisted of either three or four men, depending upon the account. If there were four, they were the steersman, an engineer, a fireman and a conductor, who was also the "brakeman", although we understand that there was no way of braking the train except by reversing the engines and by throwing sand under the sleds. These things hauled an average of 14 or 15 sleds, but the number varied from 5 to 18, depending upon road conditions and the courage of the operator. There is an account of a train of 24 sleds of long logs, which, from the scale, 126,000 f.b.m., would be about 250 cords, weighing some 600 tons, but this was unusual.

The Lombard steam log haulers were manufactured for only seventeen years, and there is some question as to whether any were made in the last five, which were mostly devoted to the making of parts for the machines in use. According to our information, a total of only 83 were built, and not all of them were used in Maine. They came into the woods at a time when oxen were still common, and in the early years they were operated over roads built for horse hauling, but they provided the first means of transporting wood long distances over land, and paved the way, by forcing the development of new techniques, for the internal-combustion-engined tractor which caught up with them and eventually put them out of business. At that, these durable monsters did not abruptly become extinct. They were used extensively long into the short wood era.
As they wore out, they were cannibalized for parts, and eventually what remained was left to rust in obscure places.

The Great Northern Paper Company, to the best of our knowledge owned only three. These were acquired with the purchase of the Jackman Lumber Company some time before 1927, and were left in storage. In February of that year a fire destroyed the garage on Great Northern's Cooper Brook operation, along with three Lombard log haulers owned by John Cormier, of Portage, who was hauling there on contract, and two Holt tractors owned by the Company. At that time, the three old Jackman Lumber Company machines were taken out of moth-balls and helped to finish the hauling. They were never used again by the Company, possibly being sold to John Cormier, who had six at one time. Other contractors had quite a few. Edouard Lacroix, it is said, had twenty on his large operations. John Cormier was probably the last man to use one, and believe it or not, that was in 1954, forty years or more after the last of them was built.

That Alvin O. Lombard, right here in Maine, was the originator of the crawler-type tractor, has been accepted as fact for a long time, but this was once a matter of controversy, and for quite a number of years it was thought to be a western development. The several accounts of what happened agree in general, but differ in detail, and dates are hopelessly contradictory. For our brief discussion, we will use all three, just for fun, and make no particular effort to reconcile them.

Benjamin Holt, (or the Benjamin Holt Company), a California farm tractor manufacturer, bought out a competitor, the Best Company, also a California concern, in 1908, and began to produce what he called a "Tread-Mill" crawler tractor in 1906 (or Spruce Wood - 127
1974

1907, or a few years later). This, as we understand it, was a farm machine, with wheels in front for steering, and was driven by an internal-combustion engine. In 1910, Best's son formed the Best Manufacturing Company (or the C.L. Best Gas Traction Company) to make similar equipment, and the two firms got into a lawsuit which it is said cost a million dollars. In 1904 (or 1909) Alvin Lombard built for Homer H. Linn, of Old Town, a machine similar to his log hauler, not for use in the woods, but to haul the equipment for a traveling dog circus. This had wheels instead of sled runners in front, and was powered by a gasoline engine. This was Lombard's first use of an internal-combustion power plant, and it would appear that about this time he charged both Holt and Best with infringement of his patents. The matter was settled in one of three ways: (a) Lombard brought suit against Holt and Best; the matter was long argued in the courts; his claim of being the originator was upheld, the decree being that rights to manufacture must come from him; and this litigation cost more than a million dollars; somebody seeming to have the lawsuits mixed up; (b) Holt and Best paid Lombard $60,000 for the rights, nothing said about a lawsuit; or (c) Alvin Lombard and his brother went to California in 1910 and charged Holt with infringement, which he acknowledged, agreed to pay royalty upon execution of a license agreement, but never signed the agreement and neither he nor his company ever paid Lombard anything. Whatever can be made out of all that, it clearly establishes Alvin Lombard as the originator.

The sequence of events in the nineteen-teens is equally hard to follow. It would seem that in 1906 H.H. Linn had obtained a patent on a "six-wheeled automobile", and at some unknown date
date after Lombard had built the first machine for him, decided
to go into business for himself, and began to manufacture, we
believe in Old Town, a gasoline-engined half-track with inter-
changeable front wheels and runners. We have the impression from
somewhere that he was licensed by Lombard. No very great number
of these machines were made, but we know that the Company had one,
perhaps more at one time or another, and we are told that one was
in use as a log hauler in Aroostook County as late as the winter of

About 1912, Alvin Lombard pretty much phased out the steam
log hauler, and began to produce one driven by a six-cylinder
gasoline engine; an efficient-looking half-track with a long hood,
a cab just behind it, sled runners in front, crawler treads at the
rear, and a flat deck, about one-third the length of the whole unit,
over the treads. We believe that these machines were made until
1936. There were two models, one weighing 7 tons, the other,
with a larger engine, nearly 10 tons. The last one made was
bought by the Company. This was the only one to be equipped with
a diesel engine, and was a very good piece of equipment, but mass-
produced tractors were too much competition, and while the company
remained in existence for quite a number of years after 1936, it
again made only parts. Lombard had shifted entirely to gasoline-
engined machines by 1917, but Holt was making under his own name a
full-crawler diesel, a number of which came into the Maine woods,
and while we cannot be sure, we think that the Holt was made in
California, and some patented improvements had been incorporated in
the design of its suspension, which is perhaps the source of the
misapprehension that the crawler tractor was a western invention.
By the end of World War I, or shortly thereafter, Lombards, Holts, Linns, Bests and several other makes of tractor were available. The Caterpillar tractor came on the market in 1925, when Holt and the Best Manufacturing Company merged, moved to Peoria, Illinois, and began to produce full crawler diesels under that name. Incidentally, the half-track types, whether driven by steam or by internal combustion engines, seem mostly to have been referred to as log haulers when used in the woods, while the full crawlers were called tractors.

As far as the steam log haulers are concerned, there is general agreement that numbers of them were used by the Company's contractors from an early date, but as we have noted they were not employed to any extent in Great Northern's own operations. Therefore, while we have some information on long log hauling with these machines, including an account by O.A. Harkness, the Spruce Wood Department's long-time Mechanical Superintendent, of steam log-hauler operations around Eagle and Chamberlain Lakes from 1907 to 1913 -- a contract job, but not for the Company -- we are not going to go into any description of log hauling with the old steam Lombards, but will take up a little later hauling with gasoline and diesel engine driven units, which from this point on we will call tractors, and which, although they lacked the glamor of the old smoke-belching log hauler, performed the same function in their time.

We know that considerable use was made of tractors for toting, but while we can find no information one way or the other, it is our conclusion that this was not until after World War I.
It will have been noted that bulk gasoline storage had been provided at Kineo in 1912, but it would appear that this was for use in trucks, cars and boats, and the garage built at this place, which was cut in two and moved to the Seboomook and Pittston Farms in 1916 was for trucks. We do not know much about the early use of trucks either, but we will take that matter up later.

The first recorded use of a tractor for hauling wood on a Company operation is in the winter of 1918-1919, the machine being a 7-ton Lombard acquired with the Gilbert Mill property at Dolby, which we have mentioned in another place. This was taken over to the Kennebec, and was used by Joe Sheehan on the Wood Stream operation. In 1919, it was traded in toward the purchase of two new 10-ton Lombards, but these were used for toting, and for plowing the turnpike roads, using Sargent V-plows, although Alvin Lombard had a snow-blower type plow for use with his equipment. In the winter of 1919-1920 a small Monarch tractor was tried out on hauling from an operation on Soper Brook to Harrington Lake, but this trial was unsuccessful, the machine not being up to the job. The winter of 1920-1921 saw the first trial of large-scale hauling of pulpwood with tractors, four 10-ton Lombards and four 10-ton Holts hauling some 10,000 cords out of rough country around Caucomgomoc. This operation was not a huge success. In 1921, Jim Sargent used a couple of Holts on the construction of the road from Ripogenus to Duck Pond. Late in 1922, a Linn with a stake body was bought for toting from Greenville and Lily Bay to the Grant Farm and beyond, hauling, with three tag sleds, a load of 22 tons of supplies at a time, during the winter of 1922-1923. At this same time another Linn was bought to be tried out hauling pulp-
wood on the Cooper Brook operation, and a Lombard, fitted with what looks like about a 5,000-gallon tank, was bought for toting fuel from Greenville to the up-river operations. The first really successful tractor hauling was during the winter of 1922-1923, when 9,000 cords were hauled four miles up-grade from Ed. Enman's operation on the Telos watershed to Cuxabexis waters in 33 working days by four 10-ton Holts with 21 sets of sleds, "without mishap". An account in The Northern of March, 1923 says that there was one load of 60-1/2 cords -- "without doubt the largest load of wood ever hauled in this state by a gasoline engine on land". It is our recollection that the Holts were diesels, but no matter.

The Company liked the locally-produced Lombard, but neither it nor the full-crawler Holt then being made met its requirements for power and versatility. In 1921, it encouraged Alvin Lombard to design something better, and early in 1922 he delivered what was called the "A.O.L.", and later the "Old Twin". This was a full crawler, driven by two four-cylinder gasoline engines side by side under one hood, with one crankcase, but two crankshafts, two clutches and two transmissions, the latter in a common housing, one engine driving each track, steering being accomplished by a throttle mechanism that simultaneously speeded up one engine and slowed down the other. This machine was tried out during the summer of 1922, but while it is said that it was superior in many ways to other equipment then available, it was tricky to steer, and had other faults. However, it was used for four or five years, mostly for plowing, being rebuilt several times in the process, and it gave O.A. Harkness ideas. In 1923, he himself designed another, called the "New Twin" or the "Twin Six", with two six-
cylinder gasoline engines side by side under two separate hoods, each driving one track independently through its own clutch, transmission and rear end. The compensatory throttle arrangement was similar to that of the "Old Twin", but was actuated by a steering wheel. This tractor was built in the Greenville Shop, starting in 1924, the heavy machine work being done by Lombard, but there were long delays in obtaining parts, and it was not until February, 1927 that it was ready for use. It was a good machine, but costly; by the time it was completed a much improved Caterpillar diesel was being mass produced, and it may be recalled that an order for six of these Twin Sixes, which must have been placed later in 1927 was cancelled on orders from William A. Whitcomb. No more of them were ever built, as far as we know. Also to the best of our knowledge, it was never used for anything but toting and snow plowing, at which it was particularly effective.

We might note in passing that the tread plates on the early tractors were flat. We do not state it as a fact, but we have been told that it was O.A. Harkness who invented what was then called the "grouser" tread plate, with lugs on it for increased traction. This, if true, would have been before 1922, as the Old Twin had them. They could not be used on the roads of those days after the spring thaw, and each spring the tracks of the toting vehicles were changed to flat "summer" treads.

We should say just a little here about Orrin A. Harkness (1869 - ), the grand old man who was so active in the development of the mechanical equipment used by the Company in the woods in these earlier years. He was born in Camden, Maine, and all we
know of him before he came to Great Northern in 1916 as Mechanical Superintendent is that he had held a similar position with Fred W. Ayer's Eastern Manufacturing Company from as far back as 1903. He was laid off for lack of work in 1931; was rehired in 1934; was laid off again for a year at the end of 1938; was reinstated in December, 1939, and retired in November, 1950. A rough-hewed type, a great joker and story-teller, he was immensely popular and equally imaginative, and he made a great contribution to the Company. There will be much more about his accomplishments later.

In early 1926, the Company had 21 tractors; four 10-ton and two 7-ton Lombards, ten 10-ton Holts, one 5-ton Linn (we have record of two of these having been bought and do not know what happened to the other one); one 10-ton Best, the Lombard tank tractor and another fitted up as a "jitney" for carrying passengers, and the Old Twin. The New Twin was still under construction. As the account in The Northern from which this information is taken says: "One 10-ton Holt has been loaned to the Winter Open Highway Commission of Bangor and the others are used for plowing, toting and hauling wood where conditions are favorable to it." These last are the key words. The tractors had arrived as a new means of transporting wood, but their use was selective. A little later, when smaller machines became available, they simply replaced the horse in some cases, as we will see, but in the era of tractor train hauling they were used for specific reasons like where large amounts of wood had to be moved; where it had to be hauled from one watershed to another, or where a long haul was preferable to a hard stream drive, and as we have said, the horse

Spruce Wood - 134
remained very much in the picture.

At an earlier point in our story we gave a rather brief description of woods operations in the days of the lumbering industry of the 1800's, and outlined a few of the differences that developed in them as they moved into pulpwood later. We also stated earlier in this chapter that these were in detail rather than in principle. The log hauler about which we have been writing, for instance, only got wood out to drivable water or to the railroad, as the horse had done. In another place, we touched on some of the conditions in operations around the 1920's, and projected some of the changes that took place later. However, at the risk of repetition, and we may even contradict ourselves a bit, we should examine the subject at more length. First, though, we will digress to say that away back in February, 1901, the Board of Directors had voted that the Company make a contract with the Forestry Department (this should have read Bureau of Forestry) of the United States Department of Agriculture "for plans for cutting and supervision of cutting by Government experts." As we said earlier, the voice of conservationism had begun to be raised after the Civil War, without any very constructive response until the 20th century. However, important efforts in the direction of better forestry practices than those which we described, particularly those of George F. Talbot, a Portland lawyer, born in East Machias, resulted in the appointment of a Forest Commissioner by the State of Maine in 1891; his duties apparently being largely the preparing of statistics and the education of the public in the prevention of forest fires; and a number of minor laws affecting lumbering practices were passed, none of which seem to have had much in the way of teeth. However, they provided opportunities for conservation-
minded men actively connected with woods work, the most important of whom was probably Austin Cary, also of Fast Machias; entomologist, biologist, forester, teacher, lecturer, part-time employee of the Maine Forest Commission, Superintendent of Forests for the State of New York, and later a full-time member of the staff of the U.S. Bureau of Forestry.

We do not intend to go into any discussion of the conservation efforts of the time, nor of the two men mentioned -- these subjects have been well covered by David C. Smith in his "Logging in Maine, 1861-1960" -- except to say that Austin Cary, who had very practical ideas about forest management, and whose aim was to get into Government service, had accepted employment in 1898 with the Berlin Mills Company as a forester; as he said "the first American calling himself a forester to do any such thing". According to a paper by Roy R. White (Forest History Magazine, Vol. 5 No. 1, Spring 1961) he had not made much headway with his attempt to introduce conservative lumbering practices during the few years he was with Berlin Mills, but it is the writer’s recollection that he was told that Great Northern’s management was impressed by what he had tried to do there, and by his philosophy that good forest management called for cooperation between Government and the industry and for technical advice to be implemented by the landowners themselves, as a matter of self-interest, and this may have had a bearing on its decision to call in expert assistance. Anyway, work was started in the summer of 1901 and was carried on through the next year. The Company had agreed to pay $5,000 for the job, but it ran over, and the Bureau of Forestry picked up the difference. We have some of the old vouchers, for everything from camping equipment and food supplies to toting, travel expense and shoeing horses. The report, submitted in 1904, represented a
thorough and comprehensive study, which we will not go into in any detail. Most of its recommendations put forth commonsense principles; the marking of trees to be cut; the use of saws instead of axes for felling; cutting low stumps; running tops up to four inches; inspection to enforce compliance, and the like. The essential point was the establishment of minimum diameter limits; 10 inches to 12 inches for spruce, depending upon the geographical area; 8 inches in the swamps; with the provision that under certain conditions these limits could be disregarded and the trees cut "according to individual requirements".

There was some doubt around the industry that Great Northern would adopt the program, but rules were drawn up based on the recommendations, and were put into effect on Company land at once, although to the best of our knowledge trees were not marked, the estimating of diameters being left to the individual woodsman, who was of course checked by the inspector. The program was strictly observed until some time between 1916 and 1918, when the change-over to four-foot wood occurred, coincidental with the operation of salvaging the timber killed by the budworm infestation which began about 1910, and the diameter rule of necessity went out the window, as everything that could be used was taken. This situation prevailed until about 1926. About that time, diameter limit cutting was restored, but for some reason, probably the pressure of competition from the burgeoning Canadian industry, it was reduced to 6 inches, the other management features remaining in force, and as nearly as we can find out, spruce was cut down to that diameter for a number of reasons -- the depression of the 1930's, World War II, and the fact that the budworm kill
was followed by a heavy growth of fir all having a bearing -- until 1954. In that year the diameter limit was raised to 8 inches for spruce, 6 inches for fir. In 1959 there was a radical change, the limit on spruce being raised to 13 inches, fir remaining at 6 inches, and a program of marking trees was adopted, this being the way it is as this is written. Regardless of this juggling of the original program, the Company considered that it always operated its lands on a sustained yield basis, as William Hilton wrote to Sheldon Wardwell on May 27, 1950, in connection with the Celler investigation of that year, and, at least in the writer's time with Great Northern, it was considered that they could be cut in cycles of between 15 and 30 years, except in areas where fire occurred.

In the meantime, there were a number of efforts to legislate controls on wood harvesting practices. Bills introduced or reintroduced in the Maine legislature in 1907, 1909, 1911, 1913, 1915, 1917 and 1919, mostly based on the setting of minimum diameter limits, were defeated in one way or another. In 1921 a rather weak measure was passed. It was amended in 1923 and again in 1929, and was repealed in 1933, as by that time almost all the landowners had established adequate programs of forest management in their own interest, and the fears of the early conservationists that the wood supply would soon be exhausted had been proven groundless. We do not recall that this legislation had any effect one way or the other on the Company's policies.

Writing about the conditions and procedures in woods operations is like trying to paint a sunset, which changes while one looks at it, but we will relate to time as well as we can, making
some reference to what was, and some to what would be. We will use as a base a Company rough wood winter job any time from the late 1920's to the late 1930's during which both horse hauling and tractor hauling and combinations thereof were being carried on. This was a period when substantial changes, were taking place, and others which we will note were coming up, but with the exception of any discussion of mechanical equipment and of some other matters which the dates will identify, what we say would apply to this period and perhaps a little on both ends of it.

While there were many small single-camp operations, cutting anywhere from 1,500 to 6,000 cords in a season at this time, we will discuss a larger one, set up to run for three years or more, producing 30,000 cords or so per year. Such an operation would have from three to five separate camps, one the "depot", or the headquarters, accessible by a tote road from a turnpike, the others located around it, seldom more than five miles distant, and connected with it by other tote roads and by telephone. This arrangement had been common for a long time, both with the Company and with contractors. Charley Gilbert's depot for his operations around Debsconeag, on T.1 R.10, T.2 R.10, and T.2 R.11, which ran for five years starting in 1912-1913, was quite elaborate, with a two-story office, a storehouse, two hovels, a wagon shed, a blacksmith shop, an ice house, a hen house, a boat house and a drilled well with a gasoline engine driven pump, but that was before the days of motor vehicle toting. We have mentioned ice houses in a number of places. There are not many of them now, and we should say that they were usually frame buildings, in which blocks of ice cut from some nearby pond or lake were stored, packed in sawdust.
These were used in a cold room, usually part of the same building, where meat and fish were kept for distribution to the camps. By the time of which we are writing, however, transportation was faster, and it does not seem to us that there were ice houses at many depot camps, although they remained in use at the big farms and storehouses.

Company camp buildings at this time were built of logs, as they always had been, but about 1920 peeled logs began to be used, and were in most cases stockaded, or stood on end, rather than being cribbed horizontally as in the earlier years, and they had board roofs, laid on pole rafters and covered with tar paper, screened windows, board floors, were banked with earth for warmth, were provided with roof ventilators, and were in general much neater in construction than formerly. There were variations, of course. Roofs were sometimes double, for instance, with a second boarding over a layer of sawdust insulation, and the writer has been in a camp that had a sod roof laid on poles, but this was unusual. They were built close to water, if possible on the stream or pond out of which the wood was to be driven. There was no particular standard, but a typical camp for a large operation would be built for 80 to 90 men and an indeterminate number of horses, depending upon the methods being used. They consisted of a number of buildings -- a bunkhouse and cookshack, sometimes combined in one structure, more often separated; an office with sleeping quarters for the foreman, the timekeeper, the scaler and a few more people, and space for the wangan; a filer's shack; and in the woods a "shack" was not necessarily a dilapidated building; a hovel, much like the bunkhouse, but with a pole floor adzed flat, and a hay shed, usually
a pole framed building, simply boarded in. The depot camp would have, in addition to these buildings, a blacksmith shop, often including a place to put a tractor, but as we remember, a storehouse was not usual. The depot office would be for the Superintendent, the clerk or clerks, and other overhead, with sleeping quarters for these people and visiting firemen, and of course the wangan. No two sets of camps were exactly alike, but in general they were set on level ground if possible, and were often arranged around or along a cleared space that provided for the woodpile and storage of hauling equipment.

At this time, some of the larger outfits were equipped with portable electric generator sets, but light was mostly from kerosene or gasoline lamps and lanterns. In the men's camp, the old wide bunks around the walls were disappearing, to be replaced by steel bunks with springs and mattresses, the favored style being two-man double deckers, which might be arranged shotgun fashion around the outside walls, leaving the middle of the floor open, or against a partition down the middle of the camp, leaving the sides clear. Heat came from a wood stove at each end. The deacon seat along the foot of the bunks remained a feature, but it was no longer a split log, and there were often additional chairs and even tables, where space allowed.

Benches with wash basins were just outside the door in warm weather, and just inside when it was cold, with roller towels hung nearby. By the 1940's these were replaced with wash sinks, one at each end of the camp, and each man had his own towel, but hot water for washing and shaving still came from kettles on the stoves, and cold water from barrels near the sinks. A barrel of
drinking water was kept filled from whatever source was available. There were no showers until at least the middle 1940's, as best we can remember, and sanitary facilities consisted of a five or six hoiler, located away from the bunkhouse, with a smaller separate job for the overhead. State standards had been established for woods camps in the 1930's, and these were being met, in general. There was camp inspection, and even an accident prevention program, although at this point it was mostly of the "Hey, you stupid bastard, do you want to get yourself killed?" variety, and while this effort was continued over the years, it was not until 1950 that the Company really bore down on it and began to get results.

The cookhouse, or combined kitchen and dining room, was usually a separate building, close to the bunkhouse, and of about the same size. It was heated by the wood-burning cookstoves. The kitchen might be at one end or at one side, sometimes open into the rest of the room, sometimes partly partitioned off, with a sort of counter across the opening. The dingle was generally in two sections, either built on to or partitioned off from the kitchen, not an open shed connecting the cookroom and the bunkhouse as in the older days. One section was unheated, for storage of meat and other supplies that could not be damaged by freezing -- there was as yet no refrigeration in the camps themselves, and it was not too long before that sides of beef had been well plastered with black pepper and suspended from the branch of a tree, or hung over the water of a brook in a little cheesecloth house. The other section, for canned goods and perishables, was heated. The cook and the cookees bunked in a third room, heated by still another stove. The dining room was provided with long oilcloth-covered tables, each seating about 20 men on backless benches. Food was served family style by the cookees,
the men carrying their own plates, cups and eating utensils back to the kitchen. The rule of silence was still strictly observed. Men came in for lunch if working nearby, otherwise it was carried out to them by the cookees, in boxes and pails, which even at this time were slung on shoulder yokes, or more often by means of a single-runnered sled with a box on it and plow handles by which to push it, and the cookees were out in time to get a little fire started to warm things up. There was only one lunch in the woods at this time.

The food supplied to the camps was of adequate quality and variety, but depending upon the skill of the cook it might be good, bad or indifferent when served. A cook who made delicious pies, cakes and cookies might invoke a disaster out of good meat and vegetables, or vice-versa. The writer was in camps of this period in which the food was excellent; well-cooked and of interesting variety; and he was in others where the menu ran heavily to oatmeal porridge, baked beans, boiled beef, fried potatoes and doughnuts. Fish, salt or fresh, which in former years had been a staple article of diet, was served only sparingly by this time, but meat, mostly beef, varied by ham, frankfurts and fresh pork; eggs and potatoes, boiled or fried, baked beans, vegetables -- carrots, cabbage, onions and beets fresh, string beans, corn and tomatoes canned -- corn flakes and porridge with canned milk, eggs, bologna, and of course bread and biscuit with real butter; pies -- apple, raisin, pumpkin and some "store-bought" fillings -- cake of several kinds, sugar and molasses cookies and doughnuts, with tea and coffee, were on most Company camp menus, and a cook did not last long if he were not pretty good all around, as woodsmen were charged
board, at least as far back as we can remember, and were quick to complain about the quality of the grub, and besides, the supervision ate regular cookhouse fare. Beer and liquor were not allowed, of course, but there was always a little around. Outside of individual cases we do not know that it was a great problem, but particularly during the prohibition years the amount of lemon and vanilla extract used increased phenomenally.

Flies were a tremendous problem. We do not find any insect repellent for protection against mosquitoes, blackflies and horseflies on the wangan list in 1920, but it was available by 1926. Before that time, the woodsmen just had to become inured to them, although some made their own dope from kerosene and pitch. In the camps, the ordinary house fly and the big "bluebottle" made things miserable. Even after insect sprays became available in the early 1920's, the cooks had to keep everything covered with cheesecloth from the minute it came off the stove or out of the oven. This situation was particularly bad in the fall, when for some reason flies invade a camp in far greater numbers than during the summer. Better insecticides were gradually developed, however, and by the middle 1940's even the camp grounds were being sprayed on Company operations, which made a world of difference.

We might say also that in the old days -- that is, up to the late 1920's, Pinkertons were also a nuisance in the woods, but their main function was to chase down horse thieves, and they were far less trouble than the flies.

Peeled wood might be cut in the summer from a winter camp, but some of the strictly summer camps of this time were of tem-
temporary construction -- pole framed, tar paper covered. The facilities connected with them were about the same. Contractors' camps were often a little more poorly constructed and less orderly than Company installations, but we have been in some that did not suffer by comparison in any way. There were also a few "shackers" on Company land, mostly along the roads in Aroostook; a few men and their families living in temporary camps, cleaning up scattered stand or the wood left in corners of a large operation, but they were no great factor.

Many of the log camps of these years, if we remember rightly, were not simply abandoned at the end of the operation, but were torn down and sawed into pulp. In the middle 1930's, the Company began to experiment with portable camps -- panel jobs that could be taken apart and put back together on another site -- and while log camps were still being built in the early 1940's, bulldozed roads over which trucks could travel right to the campsite were being built, and the log camp was phased out in favor of portable buildings of various kinds, electric light and power plants were put in almost everywhere, oil and bottle gas took the place of wood for heating -- it was cheaper, believe it or not -- wells were drilled, washrooms with showers were put in, and the log camp, a feature of Maine lumbering operations from the beginning, pretty much vanished from the Company scene. Great Northern, however, unlike some other companies, never reverted to the ancient custom of having the men cook their own meals. Cafeteria style service was introduced, but the Company never gave up the cookhouse, although the cookees no longer dry the "table silver" by shaking it in a flour bag.
For an operation like the one we are discussing, the supervision and overhead would have been a Superintendent, an assistant superintendent, a clerk, or perhaps more than one, and often a forester. At each individual camp there would have been a foreman, perhaps an assistant foreman, a scaler, a timekeeper, a head swamper, a feeder (stable man), a saw filer, a cook, usually four cookees, a bull-cook and probably a tote team driver. There would have been a blacksmith on the operation, maybe more than one if it were large. The rest of the crew was made up essentially of cord cutters and swampers. During the hauling season there would have been teamsters and helpers, loaders, and tractor operators if tractors were used, and at all times some miscellaneous labor. The functions of these jobs should be obvious, except perhaps those of the bull-cook, who was the handyman and cleaner, fitted the firewood and kept the woodboxes filled and the fires going.

Many of the cord cutters, swampers and miscellaneous labor were transients, and we will have more to say about them later, but the people in most of the other jobs we have mentioned were regulars, although they came and went with the seasons, and moved from one operation to another. Many served the Company a very long time, and we cannot pass by the bull-cooks without mention of Lee "Happy" McCullough, known to the writer for more than 25 years; a cross-eyed, one-armed black man who faithfully did a whole man's job in the woods, disappearing each summer -- "visiting", as he said -- but turning up for work each fall, who in the early 1950's, when he had become too feeble to do the only job he knew, burst into tears when told that he was to be pensioned off. He died shortly afterwards at the Salvation Army home in Bangor, and was buried at Greenville.

Spruce Wood - 146
The primary working tools of the woodsman at this time were single bitted axes for "notching" or undercutting, and for limbing and topping; bucksaws, crosscuts; -- the French-Canadians were slow to discard the crosscut -- and pulphooks, all kept very sharp -- it was said that a good man maintained an edge that he could shave with on his axe. Most men carried a file, an axe stone and a tree wedge, and, especially in yarding operations, each crew had a couple of cant-dogs. The bucksaw -- the "Polack fiddle" -- had arrived about 1912. The early saws were of the old-fashioned type with fairly thick blades with triangular teeth, in wooden frames, and even at this time many of the frames were still wood, often home-made, tightened by a double rope at the top, twisted by a short stick. The thin Sandvik or Swedish type blades, with cutting and raker teeth, had come into use, but while these were much more efficient than the old plain type, they were expensive, and some men, notably the "Finlanders" and the "Polacks" -- we will have a little more to say about these people later -- made their own from the springs of old hand-wound phonographs. At least two lengths of blade, 42-inch and 48-inch, were used. Some men carried a small stick cut four feet long to measure off the log when sawing it up; some used the saw itself as a measuring stick, those with the shorter blades having a little strip of leather tacked to the handle to make up 48 inches. The steel pulpsaw frame did not come into wide use, as we remember, until after 1940. We know that as late as that year a spare rope for the wooden saw frame was still part of many a cord cutter's equipment, but within a few years the steel frame was in general use, and the crosscuts had practically disappeared.
The cutting of wood at this time was a quiet operation. Crews were scattered around the job, and one had to walk about to find them. There was seldom any tractor work until winter, and horses yarding made almost no noise. Saws were almost silent. The "chock-chock" of axes and the crack and thud of falling trees could be heard from long distances on still days, but these were sort of natural sounds, like woodpeckers and falling water. There was not even much conversation among the men. Everything might not be peaceful, but it was quiet. In a normal operation, even the face of nature seemed to be little disturbed, or at least was treated with respect, and this was the way it would be until the bulldozer, the chain saw and other mechanical equipment changed it.

The laying out of main and branch hauling roads to obtain the necessary coverage with the least mileage was most important, determining to some degree the placement of the camps and the method of operating. This was done by the Superintendent and foremen, and roads were always swamped out and prepared by removal of some of the knolls, stumps and rocks -- anything up to about a foot high could be left except on main hauling roads -- building temporary bridges and laying corduroy and side-logs before freeze-up made such work difficult. The roads we are talking about were entirely for use in the winter, when snow and ice had filled up the holes and provided a reasonably smooth working surface, and main roads were cut 15 or 16 feet wide to allow room for snow thrown up in plowing. Those expected to be in use for a longer period then others were a few feet wider, as more plowing might have to be done.
In the days of long-log pulpwood, all the sticks had to be dragged to such a road by horses, but with four-foot wood there were two methods of operating; "stump cutting" and "yarding", both sometimes used on the same job. In the yarding operation, which we mentioned in connection with our story on horses, the tree lengths, or logs from the bigger trees, were dragged by a horse out to yards - cleared spaces along main or branch roads - or directly to the bank of a stream or other water, and were there sawed up and piled for hauling or driving. The most efficient distance for yarding was about 450 feet, the maximum around 600, and a yard might contain anywhere from 20 to 60 cords, depending on the chance -- the thickness and nature of the stand and the terrain. In the early days of short wood, a crew of five men with two horses was used, but by the late 1920's a crew of three men and one horse had been found to be more effective. Men yarding usually cut their own twitch trails, not much wider than necessary for a horse to get through, but on the larger operations, or if enough work was involved to cut down on production too greatly, swampers were assigned to them. We are a little doubtful about the figures we have for the amount of wood per day a man could cut on a yarding operation. Much depended on the chance, the distance from camp, the diligence and skill of the individual and the way the crew worked together. Something between two and three cords a day of rough wood would be in the ball park, but it seems to us that it would take an exceptionally good crew to average three cords per man. In yarding, the horse normally dragged one stick, or more than one if they were small, over more or less level ground or small grades to the yard, one man felling and limbing, one driving the horse, and one sawing up and piling, but there were variations. Logs were yarded down steep slopes by leaving stubs of
limbs to act as brakes. In some cases; we have not been able to find out under exactly what conditions, but probably where the wood was small and stump cutting not desirable because of rough terrain; "scoots" were used for yarding. The scoot was a throw-back to the very old days of logging; a single pair of sled runners with a fixed bunk, onto which the ends of several logs could be lifted and chained, the other ends dragging. We are not sure, but it is our impression that a pair of horses was used with a scoot, and they were in quite common use on many operations. Yarding and "skidding" were really the same thing, but the latter term was never used, except that at one time what was called a "skidding pan" -- a sort of short metal toboggan on which the ends of a number of logs were laid and chained -- was tried, the idea being that this rig would slide more easily over roots and rocks, but it was never much used. In 1937, a small Cleveland Tractor Company "Cletrac" diesel crawler was tried out for yarding, with two four-man crews. This machine was equipped with a winch and 250 feet of cable, by which two bunches of logs at a time were pulled to the yard, one being left on the cable, the other chained to the drawbar of the tractor. This was a pet project of Max Hilton's, and while he was optimistic about it in his paper on rough wood operating, which we have mentioned, and we believe experimented further, using several tractors, both Cletracs and Caterpillars, it was never a success, to the best of our knowledge, no small machine being rugged enough for this service, although by this time there were some good ones of medium size.

In stump cutting, the tree was limbed, topped and sawed up where it fell, and the wood was put up in small piles a tree-height apart, usually by two men working together, although some
preferred to go it alone. This method was generally employed in heavy stand, particularly where the trees were very large or very small. The lay of the land was also a factor, as roads had to be cut to the piles; were laid out somewhat differently than for yarding, and more mileage was usually involved. It had some advantages. The cut was cleaner -- that is, the yield from the land was somewhat better, as the cord cutters would take any legal tree, while men yarding were inclined to leave those that were hard to get; were in small separated bunches, or were barely of diameter limit -- less equipment was used, and there were no horses to feed and care for, but the production per man was a little lower than in a yarding operation. Again the figures we have very, but a man could average somewhere between a little over one and one-half and perhaps two and one-quarter cords a day, and again it is our feeling that if he got two cords he would not have wasted much time. Stump wood could be cut in swampy areas where horses could not go until the ground was frozen, but it could be got down from very steep slopes only by "bundling" -- chaining a quarter of a cord or so in a bundle and rolling or dragging it down by a horse pulling on a chain or cable. This was a common but not widespread procedure.

These differences were what made the road systems different for the two methods, but other things had to be considered. The haul was always down-hill as far as possible, but it was not always possible, and grade was important. Tractors could pull more than horses on an up-grade, but on the downhill cant they had less braking power, and this had to be taken into account. For a yarding operation, branch roads had to be laid out so that the horses would not have to twitch more than 600 feet, which put them not over 1200
feet apart, while for stump wood the problem was a minimum of suitable roads that would reach all the little piles without the cutter having to carry the wood too far to get it piled along them and they were sometimes as close together as 100 feet, often taking the form of a loop. Incidentally, either at the stump or on the yard, piles were always made, if possible, on the high side of the road, to bring it nearer to sled height for easier loading.

What we have been describing is by no means ancient history. While real stump cutting has almost disappeared, there were Company payroll rates for stump cutters as late as 1968, and horse yarding, which ceased to be a factor in Company operations about the same time, is, as this is written in 1974, still fairly common on small woodlot jobs, particularly in Aroostook, where yarding was always more popular than on the West Branch, one reason for this, which we did not mention earlier, being that the Quebec labor in the latter area preferred to stump cut.

It should be clear that in getting the supply of wood for the mills transportation was more of a problem than making pulpwood out of the trees, and the operations involved are more difficult to describe in that there were a lot more moves and combinations of moves, and much more depended upon weather and other conditions. Our information on the subject is taken in large part from C.M. Hilton's "Rough Pulpwood Operating in Northwestern Maine, 1935-1940", although other sources have been consulted, and the writer has some small personal knowledge of the activity.

Bringing the wood out of the forest meant roads, and they were much the same, whether they were used for horse or tractor hauling,
and since we are writing about a time when both were important, we will take up any differences as we come to them. Most of the hauling was on snow. Branch roads were almost always snow roads, and main hauling roads were not usually iced except when there was a lot of wood to be moved over them. Preparation of roads did not start until there was a foot or more of snow, usually early in January, and late or light snowfall made the hauling into a pressure operation, as suitable conditions could not be expected after the middle of March, and it was not uncommon for some wood to be left back to be brought out the next season, if the breaks were bad, although the effort was always to get the cut all out, as wood left back was money tied up.

As soon as there was enough snow, branch roads were "broken out" about seven feet wide by hauling a "road breaker" along them. This was three or four hardwood logs of about that length, chained together at the ends with their axes parallel, and dragged crosswise. As far as we know, branch roads were not plowed except after very heavy storms, only the breaker being run over them under ordinary conditions. After the middle 1930's a "drag" -- a sort of grader on a sled -- was used behind the breaker, making a much better road. A snow roller, a cumbersome drum some five feet in diameter, made of hardwood and drawn by horses, was used under some conditions, but we do not know its exact purpose.

Where a main road was to be used for moving a large amount of wood, it was iced, and this practice probably went back a long way. The proportion of iced roads to snow roads was small, and they were not made at all on many operations, but they were important. It was necessary to prepare main roads before hauling
from the branches could start, and there had to be some snow, but the road was heavily dragged, as the ice had to get down to the ground, a sled was run over it a few times, and the ruts were then watered down, the process being repeated as needed. The watering device -- always called a "cart", although it was on a sled -- was a rectangular wooden tank with spouts at each side, at the rear, to discharge streams of water into the ruts. On a horse-hauling operation, it was usually drawn by a single horse. Icing of course meant that a lot of water had to be available, and holes were kept open in brooks or ponds along the way, a pool several feet deep being dug or blasted out where required, as tip-barrels, lowered into the waterhole and dragged up a skid by a horse, were used to fill the tanks. For longer roads and heavier duty, the tank was much larger; was on two sleds, and might be drawn by a two-horse team or by a tractor. This also might be filled by the barrel method, but by the late 1930's portable pump houses, mounted on sleds, with power-driven pumps, were more common. These tanks tended to freeze up, and we have some open-ended correspondence on some kind of special stoves to be built into them to prevent this, but we do not believe they were ever installed. By that time in the 1930's tank trucks were being employed, since they could travel on an iced road, and could cover a lot more ground, but the water cart was still in use as late as the middle 1960's. Iced roads got chewed up by the calks -- "corks" to you -- on the horses' shoes, and by the lags on tractor treads. The ruts had to be iced every day, and tended to fill up, allowing loaded sleds to slew on the grades. To overcome this, a "rutter" was used. This was a sled, with long single runners, ballasted with about a ton of iron directly over two adjustable steel blades, one on each
side, set at an angle to the road surface, which literally planed two grooves in the ice. For horse roads, a V-shaped grader bar was set just ahead of these blades, with adjustable wings to throw snow from the middle of the road to the sides, and there was another set of wings at the rear. For tractor roads, the machine was similar, but of heavier construction, had a V-plow at the front instead of the grader bar, and could be used for plowing. Roads were built for one-way traffic, with turn-outs for passing -- this was the reason for bells on the harness -- but we should not neglect to mention the "go-back" road, which was provided where there were a lot of sled or tractor units working, to avoid the waiting time for passing. The main roads had of course been laid out on the best route, but go-backs were only for empty sleds, and it was not necessary to be so careful about grades, nor to do so much maintenance work on them.

The loading of short pulpwood for hauling was heavy work. The piles, buried in snow, had to be shovelled out; sticks were frozen together and to the skids; whether at the stump or on the yard butts naturally tended to be at the bottom of the tier, and some of the big ones weighed 400 lbs. or more. On top of this, particularly under heavy snow conditions, the road surface gradually built up until it was several feet above natural grade, and the side rails of the sleds were some three feet above the road, so that as the sled was loaded, some of the big stuff had to be horsed up eight or nine feet by main strength. This situation led to developments that we will take up later. Main roads were not plowed either, when horses were the only power available, but beginning about 1920 plowing with tractors became usual, and it was for this reason that obstructions had to be kept lower.
At the time of which we are writing, there were many angles to the actual hauling. It was handled differently on different operations; distances hauled varied perhaps from half a mile with horses to as much as 20 miles with tractors, although this was a long haul, 12 to 14 miles being more common. There were a number of types of sleds; there was straight horse hauling, straight tractor hauling, combinations of hauling with one and two-horse teams, combinations of horse and tractor hauling, and combinations of short and long tractor hauls, so that all we can do is to produce what will probably be a rather muddled account.

To begin with, let us say that in the early short wood days there were a lot of different styles of sleds, but the one commonly used was the "basket rack"; a double sled with two side rails, a lot of cross-members to make a floor, and side stakes every few feet. We suppose that this was an adaptation of the sled used for logs, as wood was loaded shotgun fashion. It was hard to load and unload, and we believe it had gone out of style by the time of which we are writing. What was then commonly in use was the rack, a double-sled with side rails and stakes only at the ends, on which the sticks were loaded crosswise. These were all more or less alike, although there were some differences in the way they were put together, and in the way the rear set of sleds was hooked up to prevent it from twisting, and some of the older models were made with short steel spikes every few inches along the side rails to keep the load from shifting. A double rack, that carried two tiers of wood side by side was tried, but was awkward to handle, and was not much used.
In the horse-hauling days there was not a great deal of single-horse hauling and what was done was mostly to get at stump wood in difficult places, and where the distance to the landing was short, not over a mile. A single-horse rack was 18 feet long, and could take up to two and one-half cords per load. Most of the work was done with two-horse teams, using a rack sled 28 feet long, holding about four cords, seldom hauling more than two miles, which meant a lot of small stream driving, but as long as it was necessary to use horses for yarding, it was an economic necessity to also use them for hauling, even after the advent of the tractor.

The big 10-ton tractors, the Holts and the Lombards, hauling long trains of sleds -- 15 or so at a time -- came to the woods first, as we have noted, away back in 1918, but they operated only on main hauling roads, and wood had always been brought in to them from the stump and from the yards by horses. The loading of pulpwood on the vehicles that transported it was, as we have said, hard labor, and it was axiomatic that a load should never be shifted if possible, but these big machines could not negotiate branch roads, sleds for horse hauling were not built to be pulled in long trains by machines, and there was no alternative but to transfer wood from horse to tractor sleds at the main roads. This was the way it was when we began our story of operations in 1929, but along with other things, it was about to change.

By the early 1930's, as we have said, diesel-engined crawler tractors of 4-ton and 6-ton weights, around half that of the big log-hauler types, had reached a point of development where they
were reliable not only for toting but for woods work, and the real tractor-hauling period began. In the early stages, it was considered that the tractors, except for plowing, had to remain on the main roads, and for a while wood was horse-hauled to them, as it had been in the past, and was transferred to the tractor sleds, which were not much different from a two-horse sled except for the hitch, and a 4-ton tractor could handle three or four of them, depending on grades and road conditions; the medium-size machine five or six. As far as we can find out, it was not until about 1939 or 1940 that the lighter machines began to go right to the yards and even onto the branch roads for stump wood, and while this was not the end of hauling with horses, it was the beginning of the effective use of tractors to replace them.

There was no standard procedure for hauling, but typically for stump wood and a short haul the tractor took two sleds, with a crew of four -- driver, helper and two loaders -- around the piles, loaded up and went direct to the landing, where all four unloaded and went back for another swing. On a yarding operation, one machine worked with four sleds, leaving two loaded ones in the woods at night, taking out two or three empties and the same crew in the morning, dropping the empty sleds off where needed and taking the two loaded ones to the landing, leaving the loaders to shovel out the piles and load the empties, several round trips being made in one day, the number depending upon the distance. It was not usual to haul at night. When the distance was long, the loaded sleds were brought in to the main road, where they were made up into a train of six and were picked up by a heavier tractor. It just so happened that about the time these arrangements were being worked out, hauling operations with heavy tractors had been discontinued.
They were resumed, however, a few years later.

There does not seem to be any real history on the use of trucks. It sort of just grew, and we can make only general statements, some of which may not be worth much. We have noted that the Company began to use them for toting on the highways and on Company turnpikes as early as 1912 or 1914, but outside of a few pictures, mostly undated, almost no information has been found on this operation. We do know that in at least some of the trucks in use in 1917 the driver sat in the open, as cabs were bought for a number of them in that year, and we have noted that up until some time in the early 1920's what were then heavy trucks -- Great Northern favored Whites and Macks -- ran on solid rubber tires. The older units around the mills as late as 1927 were on solid rubber, but these were not new machines. Newer trucks had pneumatic tires by the 1920's and were all pretty much alike up to 1929, differing only in carrying capacity. They could be fitted with any desired type of body, including dump bodies, but not many were built for any special kind of service until that year.

Everyone we have talked with seems to be of the opinion that trucks did not haul in the woods until 1939, or thereabouts, and this in a general way seems to have been the case, but there was some earlier use. It is probable that ever since trucks had been invented they had been transporting small amounts of wood from piles along the highways to the mills or to railroad sidings, and by the middle of 1930's this was a substantial business, mostly contracted on a per cord basis. However, we are now concerned with truck hauling in the woods, and this really began about the same
time as the small tractor operations. We believe that it was first done by the Company in the winter of 1933-1934, when some part of 10,000 cords was hauled to Yoke and Crawford Ponds from the Cooper Brook operation, over an iced horse-hauling road, the wood being transferred to trucks from sleds. At the same time, and on the same operation, trucks were used to haul from nine to fourteen miles to Jo Mary Lake, towing up to four sleds, over an iced tractor road, the trucks being left permanently loaded for traction. To accomplish this, some of the two-horse sleds which were being hauled by horses to the main road were rigged up with makeshift nose irons from which, with the pole tipped upright, a hitch could be made to the truck, these being used as lead sleds. The next job was the hauling of about 10,000 cords a distance of five or six miles to a stacker on Hurricane Pond in 1935-1936, and as nearly as we can determine, the wood in this case was piled over from horse to tractor sleds pulled by the trucks, or was taken from piles made along the main hauling road. We suppose there may have been more such operations in the next year or two, but truck hauling right from the yards did not begin until 1939 or 1940, coincidental with the use of tractors in the same manner. There had begun to be some use of bulldozers to improve the old-type hauling roads in the middle 1930's; Lloyd Houghton told us that he went to a C.C.C. camp in 1934 to watch one at work, and that it was the first he had ever seen; but it was not until about 1939 that real bulldozed roads, shortening distances, lowering cost of construction and creating relatively smooth hauling surfaces began to be constructed. Great Northern was considerably behind some other companies in this respect.
Around this time it became the practice also to bulldoze the tote roads into the camps, and even to gravel some of them, so that trucks could get into the operations, tote trucks included; cars could be driven in to them, and woodsmen no longer had to stay in camp all season, or all week for that matter. This has to be a general statement, because the program had started some years before 1939, but Max Hilton, who ought to know, wrote in 1941 "Until very recently horses were used exclusively in toting", from which we have to conclude that tractors or trucks did not tote directly to the camps until the time indicated, although it was our impression that small tractors had been in this service before that, at least in some places.

While horses and tractors could navigate on the old-fashioned branch roads, they carried no load themselves, and had to have snow on which to haul. An open winter, mild, with little snow, could be a disaster. There were several such in a row at the end of the 1920's, giving rise to the theory that the Gulf Stream was changing its course, and that Maine winters henceforth would never be the same. This struck fear into the hearts of Maine woods operators. It was partly dispelled by several of the most severe winter seasons ever, with record snowfall, in the middle 1930's, but they remained a little nervous. The truck had some disadvantages, notably higher operating cost, and was likely to cause delay in bad weather, but it carried a load, could negotiate steeper grades with or without load, and did not need snow, only a reasonably hard and smooth road -- and incidentally, truck roads were made wide enough to pass without turnouts -- so there is some question as to whether the bulldozed road made truck hauling possible, or the trucks made the bulldozed road necessary.
For the first few years, trucks were used along with the small or medium tractors, going to the yards or to the stump with sleds, and hauling directly to the landings, but, as we remember, with the shortage of labor and equipment brought on by World War II, even though the United States was not yet in, it became necessary to get wood to the mills faster; a large number of horses were bought, as we have noted, for yarding and hauling to water, many of the operations were shifted to areas where roads could be bulldozed from public highways into the woods, and from which trucks could haul directly without sleds, to the mills or to rail sidings. This pretty much took them off the upper West Branch and put them largely in places close to Millinocket, in Aroostook County, and in the local purchased wood country south and east of Mattawamkeag. As far as we can remember, there was not much more trucking to West Branch water for driving until the late 1940's, when equipment became available and new roads were built up the North Branch and in the Caucomgomoc area for this purpose, but everywhere else, hauling out of the woods with trucks had become a regular procedure.

Many of the trucks of the 1930's were four-wheelers, and those used through the war years were mostly of 1930's vintage, as very few new ones were available between 1940 and 1945. At any rate, we know that a lot of them were rigged up with a pair of home-made idle trailing wheels to increase carrying capacity -- one still sees one of these occasionally -- and some were fitted with a conversion unit by which these could be driven from the main differential. They universally had stake or basket-type bodies, and wood was invariably shotgun loaded; three full tiers across and a half-height tier at the rear; about three and one-half cords.
It seems to us that this was originally because of width and weight limits on the highways; we know that both were increased later; but Great Northern and its contract truckers did not go to the two-tier, eight-foot-wide load until after most other companies had adopted it. In 1951 both types of load were still being made. However, by the late 1940's most of the trucks were six-wheelers, with four wheels on the one rear axle, but were carrying the same weight, at least on the public highways, and had drop tailgates so that wood could be dumped off the rear. Then came the 10-wheelers, and in the 1960's the steel pallet body that could be left in the woods for loading and was dragged back onto the chassis by a winch, but these were not in vogue very long -- one sees them rusting away all around the countryside -- and the semi-trailer took their place, not however, to the exclusion of the standard six or ten-wheel truck, still widely used for four-foot wood.

The trucks gradually replaced the tractor train, the last large tractor hauling operation that we know of being conducted by Peter and Adelard Gilbert in the upper St. John country in 1951.

It is impossible to say how many trucks of its own the Company had in service at any particular time, as the number varied with the amount of wood being handled and the number of contract units available. The effort was to set contract rates per cord for hauling, which varied with the distance, so that a man could make wages, pay for his rig, and amortize it, but this resulted in a vicious circle, because when word this got around, truckers turned up from all over the State, underbid each other, went broke and pulled out or lost their equipment, and the Company had to buy more trucks of its own and haul more of its own wood until local truckers could com-
pete. We know that this happened more than once. There was also a hassle with the Government, right after World War II, about whether owner-truckers were Company employees for tax purposes, the I.R.S. ruling one way, the State another, and the Department of Labor not knowing which end was up when the partial correspondence we have on the matter ends in 1947, so we are not able to say just how the matter was resolved.

The trucks presented a new problem of loading. It was hard enough to horse pulpwood up onto the top of a sled-load, but getting it up onto a truck body which was half as high as a loaded sled to begin with was something else, and the result was an increasing number of bottoms left on the skids unhauling. Necessity being the mother of invention, efforts were made to develop a mechanical loader. The Company had done some experimenting in the 1930's, including rebuilding the boom of a crawler shovel so that it could pick up butts, which was in the right direction, but nothing very useful was produced. The first loading devices used to any extent that the writer can remember were home-made affairs based on the principle of a hay elevator; a section of chain conveyor pivoted on an old pair of automobile wheels and driven by a small gasoline engine, the weight of which held one end of the thing down. A variation was a similar conveyor mounted on the front end of an old truck or car chassis, and curving up over the top of the cab. Both of these rigs were dangerous, and neither was very effective. It was not until the end of World War II, or about that time, that the pulpwood grapple, for use with a crane, was developed, and crane loading became common, the equipment being moved around from one job to another, and hauling concentrated.
The crane was closely followed by the hydraulic "Hop-to", which gave much better control of placement of the load. Both these devices, operating on truck roads, could be mounted on rubber, making them mobile. The hydraulic mechanism was shortly adopted for mounting right on the truck, and by the early 1950's nearly all pulpwood was being mechanically loaded, all three types of equipment being in use at the same time.

Let us now take a brief look at the way wood was landed at water for driving. Back in the earlier part of our story we described landings of the long log days. This was a description of the conventional landing, but in many cases the logs were hauled out onto the ice, or were simply dumped over some high stream bank in small lots, or were otherwise distributed along the shore-line without being made into rolling tiers. The same was true of short wood landings, different methods being employed to meet different conditions. On what we might again call the conventional landing, wood was piled off the sleds, and later off the trucks, in tiers, seldom over eight feet high, on a cleared space along the bank of a brook or stream, usually at several places for one operation, to be thrown in when the water had risen, but this was probably not the most common practice. Making landings properly was really a function of driving, and driving, particularly brook and stream driving, was almost a science, as we will see. If a dam had been built; and small "splash" dams were a necessity where the run-off was small or of short duration; wood was piled right down in the stream bed, above or below the dam, or both. When hauling to a pond or lake, it was usual not to pile at all, but to just throw the wood off, as more space was available, and, particularly in tractor hauling, a simple way to unload was to pull the runners of one side of the sled up onto a sort of movable ramp.
that tipped it up enough to allow the load to slide off. Another method was to run the tractor train around in gradually increasing concentric circles on the ice, men on each sled throwing off wood along the way. A rather late development was the use of bulldozers to push wood off the bank into the water, mostly on the river or the larger streams, and, somewhat later, to shove wood off the trucks onto the ice, but these procedures were not used everywhere. Where the ice of a stream would not bear, or where there was not sufficient area on which to land, mechanical stackers -- single towers with chain uptakes and chutes from the top -- were used as early as the 1920's. Loads were of course scaled before they were dumped off, and this "landing scale" became the amount of wood charged to the mills as being in the drive.

In case we have not explained this in some other place, we should say here that for check-out purposes, all the wood delivered to the mill, by whatever means, wound up in the river, on the books at least. Rail and truck wood might be used directly in the mill, be dumped into a holding ground, or be put into the piles, but it was scaled as received, and this scale was presumed to be accurate within small limits. Wood coming down the river might also be used directly, piled, or left in the holding grounds, but it had been scaled at the landing. The amount of pulpwood used was determined by formulae applied to the paper weighed out. Therefore, if when the piles were used up there was more or less in them than there was supposed to be, the difference was deducted from or added to the amount the books said was in the holding grounds.

In the days of large inventories, when there was a lot of wood

Spruce Wood - 166
in the water, the drive of one year was not separated from the new
drive coming in, and there was never any way of knowing whether what
was supposed to be in the river was there or not. However, when
the inventory was cut down to size in the 1930's, the drive of one
year could be separated from that of the next by booms, and it was
possible to check each year out, any difference being taken care
of by a year-end adjustment, the cost of the wood charged to paper
being raised or lowered the following year -- usually raised --
because shortages began to show up. From here on, we make no
attempt to arrive at dates, as we do not have any, and our memory
is not that good, nor are we even sure of the figures. We just
record something that happened, and what happened was very large
shortages, too big to be absorbed in any year, and they were
allowed to build up, in a sort of disbelief in their reality, to
something over 40,000 cords, as we remember.

It must have been clear that some of the wood put into the
water was going to sink, but no account had been taken of this,
and discussions of the matter usually ended with the conclusion
that there must be something else wrong, because if that much wood
had been going to the bottom the river would have been plugged up
long ago. However, it seems to us that a very substantial short-
age was finally written off, and changes were made in the stock
formula intended to reduce the almost annual shortages, but they
continued to occur. Some time in the 1940's, again from memory,
a sinkage factor was established, and after World War II a small
independent organization was set up to monitor the situation, mak-
ing sure that the drive was clean and conducting other checks --
the trouble was not all sinkage -- and when the writer lost con-
tact with such matters in the 1960's it seems to us that things
were fairly well under control.

Spruce Wood - 167
We have now described, often from ignorance, the way it was in the woods with the old Company, up through what might be called the primitive phases of mechanization. Many more miles of "turnpike" were added to those we have told about. In the early 1970's the Golden Road, so named because of its cost, was completed all the way along the West Branch, from Millinocket to Hurricane Brook, with a branch reaching northward into the Chamberlain Lake country. The big trucks, piled high with tree length logs now roll down along Penobscot Brook, past Seboomook Lake, Lobster Lake, the Fox Hole, Pine Stream Falls, Ragged Lake, Chesuncook Lake, the Ripogenus Gorge, the Horse Race, Sourdnahunk (which we note is of recent years being spelled "Nesowadnehunk, one of the old forms of the name, but to old-timers will always be "Sourdyhunk"); Abol, Pockwockamus, Debsconeag, Passamagamoc and Ambajejus, and there are no log jams except when one of them sluices its load. The splash dams, the fin booms and the boom jumpers are gone, at least in that part of the world, and the nearest thing to caulked boots are found on golf courses. However, just in case the energy crisis which some doomsayers predict should at some time in the future still the chain saws and the harvesters and the skidders, or whatever mechanical marvels there may be then, putting horses back into the woods and pulpwood into the drive, we will go into this last age-old method of transportation here, not only because it is history, but because somebody may some day need to know about it, and may not be able to get the information out of whatever electronic gadgetry may be available at that hopefully distant time.
The driving of pulpwood as logs, in the first twenty years of Great Northern's existence, was no different from the driving of logs in the lumbering days, which we have described. The improvements made on the West Branch in accordance with Hardy Ferguson's recommendations, back around 1904, made things a little easier, as did the telephone, which, however, did not entirely replace the flag and messenger system for quite a while, because not one man in a hundred had ever used a telephone, and most of them were afraid of it. The pulpwood sticks averaged a little smaller, but they were still logs, and made the same problems as were encountered in older days. These have been explained not only in this story, but in countless other writings. We will therefore devote ourselves entirely to the procedure of driving four-foot pulpwood, but first we must go back into the long-log era for a few things of interest that we have been saving for this opportunity.

We have made mention several times of the famous Long Drive, which got the Company into a lawsuit in its early days, and we will tell as briefly as we can about the fantastic string of events connected with it, putting together the essentials from A.G. Hempstead's "The Penobsbot Boom", David C. Smith's "Lumbering in Maine, 1861-1960", and the Company's files.

It may be recalled that in 1901 and 1902 the Great Northern Paper Company, under an agreement with the Penobscot Log Driving Company, conducted the drive on the Penobscot River all the way to the booms above Bangor, controlled by the Penobscot Lumbering Association, where they were held and sorted for the sawmills. Fred Gilbert, an old hand at the game, was in charge. The trouble
really began in 1900, when 15,000,000 or 18,000,000 million feet of logs cut by Charles Mullen and Jim McNulty on the North and South Branches got hung just below Northeast Carry, where they lay all the next winter. In the cutting season of 1900-1901 another 12,000,000 feet or so had been landed, and with an early break-up and a heavy freshet, this came down onto the wood that had been left back, forming a jam of some 40,000,000 feet of logs which filled the West Branch for four or five miles, from Pine Steam Falls to a point above the Fox Hole. This took all summer to unravel. It is said that some of it that came down the river to the head of Chesuncook early was still jammed in great masses, with logs sticking out of them in all directions, and that these were towed down the lake in booms "that resembled porcupines".

The high water of the early spring delayed putting in other landings, which according to the only figures we have brought the total in the drive to about 80,000,000 feet, and the situation was complicated by a run-off of short duration, with very dry weather by early summer. Fred Gilbert, realizing that he was in trouble, asked permission from the P.L.D. to hold up the drive at Quakish Lake, which request was denied, not surprisingly, under the conditions of the time, which we noted earlier. The situation is not entirely clear, but it appears that most of the drive was still in Chesuncook in July, held up by low water and head winds, and the sawmills were closed down or operating occasionally on logs from the East Branch and the lower tributaries of the Penobscot. Late in August, the drive was in the Lower Lakes, where Great Northern pulpwood was being sorted out, with the rear scattered all the way back to Seboomook, and the last logs
were not through the Stone Dam at Quakish until late in September, apparently after some delay by the Company in sluicing at that point, probably to build up a sufficient head of water to operate the Millinocket mill. The middle of October, they were still strung out all the way from Mattawamkeag to Lincoln, with nearly 300 men working on them, when it turned cold, began to snow, and men started to leave for the woods operations.

About the first week in November, a few of the West Branch logs began to come into the booms, and some were being run down to the mills, but the water was so low that a man could walk across the river at Pea Cove, allowing little room for booming and sorting, or to make the holding ground safe for the winter. The rear came in on November 13th, along with a foot of snow. At this time, freezing had set in, there was wood all along the way from Argyle to Bangor, and the river was a soup of logs, ice, slabs, sawdust and dirt. As many logs as possible were jammed in behind Freese's Island at Costigan, and elsewhere they were "shingled" -- dragged up on the banks by horses -- the men working under very dangerous conditions. They were still at this on December 4th, when two feet of snow was followed first by temperatures as low as 25 below zero and then on December 9th by mild weather and heavy rain. The ice began to break up, and efforts to get the logs pulled out on the banks were intensified, but the water rose rapidly and work had to be halted on December 12th. On the 15th there was another very heavy rainstorm (the same one that caused the flood that washed out the new mill construction at Madison) with high winds, and the great mass of ice and logs below the Bangor dam went down the river. It jammed briefly at the Bucksport Narrows and then went
out into Penobscot Bay, logs being scattered all the way to Rockland. Things like this had happened before, and were more or less accepted as a hazard of the business. However, the worst had not yet happened. In 1902, spring came early in March with continuous heavy rain; the river rose over its banks; masses of ice began to run; the booms above Orono broke, and everything came down the river. A huge jam formed again at the Bucksport Narrows, and another between the wharves at Bangor and Brewer, damming the river and carrying away two bridges. Both shortly let go, and the rest of the 1901 drive, with the exception of some of the wood behind Freese's Island and at Pea Cove, went out to sea. There was some salvage, which was towed back to Brewer, but the bulk of it was lost, at least to the Bangor area mills, some of it probably being picked up further down the coast.

The P.L.D. was technically responsible for the drive, and while that of 1902 seems to have been normal, the log owners refused to pay tolls for either 1901 or 1902, because of the losses they had incurred. The P.L.D. entered suit for payment, but withdrew it early in July, 1903, laying the blame on Great Northern, leaving the way open for action by the lumbermen against the Company and providing them with ammunition for their fight in the Legislature over its West Branch Driving & Reservoir Dam Company bill. Later in this month, at least nine suits, totalling nearly $100,000, were filed in the Penobscot County court against Great Northern, principally on the basis that it had mishandled the water, and had deliberately held up the 1901 drive at Quakish, one by Herbert W. March, Fred W. Ayer's partner, being selected as the test case. The Company's defense was it had no contract with the
individual lumbermen, and that their action should be against the Penobscot Log Driving Company and the Penobscot Lumbering Association. The judge did not buy this, and in 1904 the case went to the Supreme Court, the Company still contending that it had delivered the logs, and was not liable for what happened thereafter. However, the court was not impressed by this argument, and the ruling, which was not handed down until July, 1906, was against it. The other claims, and we believe there were some from mill owners as well as from lumbermen, were settled out of court. We have a figure of $65,803.57 as the "final settlement", but do not know whether or not this represents the entire amount.

The years 1903 and 1904 were also difficult, the drive being plagued by bad weather and head winds. That of 1903 did not get through Quakish until September 10th, and it was at the booms above Bangor on October 6th. This would not seem to be too late, but it took a long time to sort and raft; much of it had to be shingled up on the banks, and work was not finished until December 1st, when a very large raft was towed to the Ayer(Eastern) mill at Brewer. In 1904 there was not only head wind but low water again, and while the Company had the rear in Shad Pond on August 5th, the P.L.D. did not get it to the boom until September 30th, nearly two months later. This was not very late either, but by the middle of November it had begun to freeze up; the logs had to be broken out of the ice, and rafting became very difficult. It was again about the first of December before the work was finished, and while everything was buttoned up and there was no such debacle as that of 1901-1902, the work at the booms was later, more
difficult and more dangerous than usual, and this circumstance may have had some bearing on the 1906 court decision. We have copies of Frank Patten's journals on these two drives, which were conducted by Ike Terrill for the Company, under Fred Gilbert. They make fascinating reading, and are highly instructive, but are much too long to include here.

Considerable emphasis had been placed in this story and in other accounts on the dangers to which men engaged in the work of driving logs were exposed. This is not exaggerated, though there is no tally of the men who were badly hurt, or who lost their lives, on the West Branch. Although in fiction men who were killed on the drive mostly lost their lives by being crushed under a landing or a jam, the most common cause of fatalities was drowning. The use of dynamite was a more spectacular hazard. On the 1904 drive which we have just mentioned, a man was killed near the Big Eddy by being struck on the head by part of a log blown out of a wing by a dynamite explosion, his body having to be sent out by boat -- from Chesuncook Dam all the way back up the lake and the river to Northeast Carry and from there down to Greenville. There was a very bad accident on Elm Stream in May, 1914, when the dynamite in a boat carrying eight men blowing ice exploded, killing three and injuring the other five, who were brought out to the Inn at Northwest Carry, where they lay for two days before a doctor could reach them. Dynamite is relatively safe of itself, and is only supposed to go off when it is detonated, but it will burn furiously, and the writer has heard of it being kept warm behind the camp stove, and even of its being thawed out in a frying pan, which is not the most healthy occupation we can think of, because it does not follow the rules when it gets old. Although at one time it became necessary to forbid
carrying caps and explosive in the same truck, men were in general a little more careful with it on the short wood drives, to which we now come.

We will start with the brooks and small streams, which were no factor in the long log days, but were important in the driving of short wood, which, as we have seen, may have begun as early as 1908, but did not arrive full scale until 1917 or 1918. By using "splash" or "squirt" dams, usually built in the late summer or fall, four-foot wood could be driven out of almost any brook wide enough for a stick to turn end for end in, and using these small waters shortened the haul. However, the location of the landings was determined pretty much by the location of the dam or dams, and these had to be placed so that they had enough watershed above them to provide enough water to meet any condition, like badly frozen landings, that might be encountered. This required knowledge and study of the conditions, partly why we said that small stream driving was almost a science.

A small brook drive was started as early as possible, and while there was no set pattern, the first operation, as soon as water was available, was usually to clear a way through the landings in the stream bed, ravelling the wood out from the lower end and working up, and this often meant blasting out frozen piles. A crew strung out along the stream below did the best it could to prevent wood from jamming. When a channel had been made, using the natural flow of water, with a splash from the dam at intervals as needed, the rest of the landing was thrown in, with men working all along it, and a crew following behind
"sacking the rear"; throwing, dragging or rolling into the water sticks hung up on the banks in "wings" or in "centers" jammed on rocks. Wood above the dam was sluiced out as water supply and conditions on the stream below allowed. Taking the rear was hard work, in the writer's mind not as hard as loading, but much more unpleasant, the men often working in wet snow, in half-thawed ice, on slippery rocks and in frigid water up to their hips. By the late 1920's rubber hip boots were being issued, but many men chose not to wear them, and although there were tools to help; pickaroons, pulphooks and pikepoles -- "pickpoles", that is -- a lot of wood always had to be carried bodily out of the alders and puckerbrush, particularly if the water was high, or dragged over gravel and ledges if it was low. Boats were not used on the small streams, and the crew usually stayed in the camps from which the cut had been made. With free use of explosives, incredibly small streams could be driven. In two seasons in the 1930's about 12,000 cords of rough wood were driven down Abol Stream, a tiny trickle of water from the south slope of Mt. Katahdin, with the assistance of two squirt dams and ten tons of dynamite -- the first year. The drive of the second year, which the writer saw, was a little easier, as the stream bed had been gouged out to a width of 20 or 30 feet in places, and again with the help of a lot of dynamite, the wood came down in an almost solid mass, rolling and tumbling end over end, with almost no water in sight, and was nearly free of bark when it got into the river. This was an extreme case, as everything was steep and rocky, and wind was no problem. Most brooks, however, ran through meadows, particularly where they came into a larger stream or pond, where the wood had to be poled along, and where an adverse wind made it impossible to move, and might even cause a jam at the outlet. We have noted
the Abol Stream drive to make the point that the natural configuration of almost every small stream was altered, sometimes drastically but not always for the worse, by driving.

Larger streams, and the river itself between lakes were not handled much differently, except that boats were required, as crews working on both banks had to be shifted from one to the other as needed, and boats had to be used to reach center jams. Landings were mostly made on the ice, and usually broke out more easily; wood piled on the banks was thrown in ahead of the crew taking the rear, and there was generally more water and less "sacking", although in places where there was not much storage the rear left behind by the lowering of the water level could be very heavy. The drive on a large stream often included the wood coming out of smaller ones, and the river of course always did. Booms to block off logans and shallow back channels, and abutments to shear floating wood around bad bends or away from obstructions, seldom provided on the brooks, aided the work. As a large stream drive was often away from the camps or other shelter, the crew mostly lived in tents, and these, with the cook's wangan were moved as required by boat. Under these circumstances the toting of supplies was also by boat. The craft used for this purpose were flat-bottomed skiffs, which by the 1930's were driven by outboard motors. Some time in the 1940's, Charley Glaster built three sets of what were intended to be permanent shelters for drivers, on the usual camping-places between Ripogenus Dam and Ambajejus Falls. Each consisted of two open-fronted lean-to's, set close together at an
angle to each other, with an open fireplace between. For old
times' sake, he had them made with cedar split roofs, adzed pole
floors and wide bunks. They were promptly vandalized by so-called
sports, who tore off the roofs for fuel and built fires on a few
rocks piled on the floors, and he tore them down.

On all kinds of swift water in rocky channels, where driving
was especially difficult, considerable use was made of sluices.
Several of these have been mentioned previously, but many more
were built in one place or another. On the big Gilbert operations
around Debsconeag, which some accounts say were started in 1910
and some in 1912, there were two, one between the Third and Second
Lakes, and one between the Second and First. These were said to be
the first to be used on an operation for the Company. They were
wet sluices, like most of the others that were built, of which we
have no record. An operation on Lobster Mountain around 1922,
however, had a dry sluice built of logs and boards that were drag-
ged up the mountain by man-power, but a dry sluice was unusual.

Getting the wood across the larger deadwaters and lakes,
where there was little current and a lot of wind called for dif-
f erent techniques. While booms were usually run along the low
banks of deadwaters, wood worked under them and went back onto the
shores, and this had to be collected by "sweeping". After the
main body of the drive had been run through, and with the men work-
ing both banks, the procedure was to string a boom across the upper
end from shore to shore, and begin to throw stranded sticks into
the water below it. One end of this boom was then cast loose,
hitched to a boat, towed down a little way, and tied up again,
the boat then moving to the other side and towing that end still a little further down, this zig-zagging being repeated all the way to the outlet. This could be done on bodies of water up to perhaps half a mile wide.

On the larger lakes with dams at their outlets, and here we have in mind Chesuncook and the Lower Lakes particularly, the wood had to be boomed and sluiced. With short wood, the operation was little different from that for long logs. The "booming-out place" was at the head of the lake, far enough below the inlet so that there was water above and below when the level was down. At these places, piers were built and booms were run from them to the shores to catch all wood coming down. There were two such sets of piers and booms, some distance apart, the upper set making a holding ground, as wood could not be towed as fast as it came in, under normal conditions, the lower for booming out. At each place, between two piers, was the "gap", closed by a "trip boom". To boom out, a long double-strand "bag boom" was strung in the lake, one end fastened to each of the two piers forming the lower gap; wood was let down from the holding ground, the trip was opened, and the wood was run out into the bag boom until it was filled. A fair wind was a necessity. Little could be done if it were blowing up the lake. When the boom was full, the trip was closed by a capstan mounted on one pier, the ends of the boom were cast loose from the piers and hitched to the towboat, which swung it around -- "rolled" it, as they said, and started down the lake. A new bag boom was immediately strung, a small boat being used for this purpose, and was filled while the towboat made its trip to the foot of the lake and returned. The tow on Chesuncook was about 20 miles, and each boom held as we recall between 4,000 and 4,500
cords. On the Lower Lakes it was about 12 miles, and each boom held about 2,400 cords. While we are discussing Chesuncook and the Lower Lakes, we might interject that wood was also boomed in the Canada Falls flowage, and in Seboomook Lake after the level was raised, wood being swept down to a booming-out place at the Swan Farm. Under certain conditions, it was quite common to have several booms filled, towed away from the trip and tied up to the shore or to piers built for the purpose. At the head of Chesuncook, in the long log days, if wood came faster than the towboat could handle it, booms were filled and "let go", that is, simply turned loose into the lake to be carried down by the wind. Should the wind change, small boats picked them up, towed them to shore and tied them up for the towboat to pick up later. Some might have gone a long way by that time, and there might be as many as a dozen tied up at different places along the shore. A boom was never let go on the Lower Lakes, however, because the water was shallow, the channel crooked, and a fair wind had to be from different directions in different places, so there were a number of special hitches for them around the head of Ambajejus. We do not know that short wood booms were ever turned loose on Chesuncook, either.

What happened at the end of the tow depended upon the geography of the location. At the foot of Chesuncook, the boom was opened, the ends made fast, and the wood was run down into the sluicing booms leading to the log sluices in the Ripogenus Dam, through which it went into the river below. Nothing was ever held there longer than necessary. However, the wind could hold up the sluicing; a lot of booms might be tied up waiting for the right conditions, and small boats were required to work them and to take the "slack" -- empty -- booms back up the lake. Above the North Spruce Wood - 180
Twin Dam there was a holding ground, into which the tow was turned at Snake Point; a narrow place above the dam; to be sluiced into Quakish, again when the wind was right, the mill taking possession at the entrance to the canal to Ferguson Pond. This place was the Millinocket Mill's responsibility, as was the sluicing of wood for Fast Millinocket through the mill pond into Millinocket Stream. There it went back into the control of the Spruce Wood Department, the handling of the storage in Dolby Pond and sluicing through the Dolby Dam being a Spruce Wood Department function, the Fast Millinocket Mill taking possession at the dam at that place. There were boom houses for the sluicing crews -- at Canada Falls, Seboomook, the old Chesuncook Dam, the Ripogenus Dam and the North Twin Dam -- and headquarters for the driving operations between Millinocket and Fast Millinocket were at the Rice Farm.

For administrative purposes, incidentally, the West Branch was divided into four sections, and the word "Section" as it is used in an order issued by Fred Gilbert on November 9, 1918, included definition of the responsibility of those in charge of each. Section No. 1 was from the head of Chesuncook Lake "to and over Ripogenus Dam", including the sacking of rear from the "jam" -- that is, the body of wood held above the booming-out piers -- booming, towing and sluicing at Ripogenus. Section No. 2 was from a point below the Ripogenus Dam to the mouth of the river at Ambajejus. Section No. 3 was essentially the lower Lakes, but included the operation of the Passamagamoc trip and the taking of the rear of the jam there, the booming and towing on the Lower Lakes and sluicing at North Twin Dam. Section No. 4 was from the North Twin Dam to Shad Pond.
On the Kennebec, incidentally, we do not recall that there was any towing, except in connection with some of the early operations around Moosehead Lake, perhaps some on Moxie, and on Wyman Lake after the dam was built there, but that was not handled by the Company. Most of the drives on this river and its tributaries were in the nature of stream drives. The Spruce Wood Department had charge of the holding grounds at Hilton and Weston Islands at North Anson, and had a boom house there, wood being let down a little at a time, as we have explained elsewhere, to what had been the sorting gap just above the mill in the long log days, and was there turned over to the Manufacturing Department -- at "the pier marked 'M'", as the General Order said. But we are wandering again, so let us get back to the West Branch.

Perhaps the greatest grief in river driving, high water and low water not excepted, was caused by the wind. Although pulpwood floated with only a few inches above water, the effect of wind on it was very great. It is hard to imagine, but if a body of wood lay in a deadwater for a few days with the wind blowing strongly from one direction, nearly all the bigger sticks worked through the whole mass and landed on the lee shore. An adverse wind could back up the drive and form a jam where it came out of the mouth of a brook into still water. Sluicing at one dam or another could be held up for days, perhaps weeks, even with a boom run behind the body of wood lying in front of the gate, and a boat sweeping it down. A towboat starting down Chesuncook Lake against a high wind might just as well have stood in bed. More powerful boats would not have been of much help, as there was danger of the boom breaking, or of wood ravelling out under it, which happened on occasion, requiring that the shore
be picked and swept, using small booms towed along the shore line, and the towboats usually anchored or tied up to the bank if a strong blow came up along the way. Fortunately, in this situation, the prevailing wind in northern Maine is from the northwest, and the large lakes on the West Branch lie more or less north and south, while those parts of the river which run northward are nearly all fast water, so that the problem was not as bad as it might have been, but the wood coming down onto a wind-caused jam on Moxie Falls, on a stream running from east to west into the Kennebec, once piled up to a depth of 90 feet, the full height of the falls, and must have been an awesome thing to untangle. At this time plans are being made to exploit this site as one of Maine's "natural" wonders: but it could never have been "natural" after this event. As we said, log driving of itself has done little permanent damage to the rivers.

The use of boats for transportation and in river driving operations goes back to the beginning of lumbering, and this brings us to what Alfred G. Hempstead called "Admiral Harkness's Inland Fleet", which is nothing that can be described with exactitude, but about which there is considerable information and misinformation of interest to our story.

There were innumerable canoes, batteaux, skiffs and scows in use all the days of river driving; paddled poled, rowed, towed, and in later years driven by outboard motors. We will not concern ourselves with these, and will discuss the large towboats later, but at this time we will write about the in-between-size inboard power boats, which were invaluable to the operations. We have no
idea as to how many of them were built, or purchased, altogether, nor how many were in service at any one time, except for a couple of the earlier years -- seven in 1915, nineteen in 1920 and twenty-eight or thirty in 1925, but they were all over the place; on Lobster Lake, Penobscot Lake, Harrington Lake, Caucomgomoc Lake, Seboomook Lake, the Dolby Flowage, Quakish Lake, the Debsconeags, Moosehead, Chesuncook, the Lower Lakes -- anywhere that they could be useful. These wooden-hulled work boats, the "boom-jumpers", were used for carrying men and supplies, but they were primarily small-scale towboats, fitted with heavy bitts fore and aft, and were used for short tows on places like Seboomook Lake -- it is said that no towing was done there until after 1936, but there was a 30-foot power boat at that place as early as 1919 -- and in handling booms around the booming-out places; at the dams where sluicing was being done; around the holding grounds; for towing scows, and for towing slack boom.

Before we begin any further dissertation, let us explain why making positive statements on the subject -- and what we say applies to many Spruce Wood Department situations -- is so difficult. Take the No. 3 boat, for example. From different sources of information, she was built in 1912 or 1913, in Camden or in Brewer. She had a Rockland Machine Company gasoline engine, and a Fairbanks Morse diesel engine before diesels began to be used in these smaller craft. She was an open boat and she had a cabin. There are explanations for all this. We are not sure what they are, but will make some guesses later. In the meantime we will proceed to make positive statements.
The first reference to Spruce Wood Department boats that we come upon is contained in an unsigned letter to Fred Gilbert from someone in the organization who had written to the Department of Naval Architecture, Massachusetts Institute of Technology, about some scheme of propulsion for shallow draft boats, the reply being that the device, whatever it may have been, was an old one, used many years before, which had been found to be inefficient, and would be of no value. This was in 1912. The letter also noted that Bath Iron Works had recommended paddle-wheels for use on boats towing in three feet of water, and that the writer was continuing to work on the problem. However, no paddle-wheel boats were ever built by the Company.

In 1915, as we have noted, the Spruce Wood Department had only seven small power boats. They were numbered, and such boats, with a few exceptions, continued to be numbered as long as they were used, but this is helpful only in a general way, as any record we find is incomplete, and we know that some numbers were re-used as boats were lost or discarded. Anyway, five of the 1915 fleet were big fisherman's dories, with two-cylinder two-stroke cycle Atlantic gasoline engines of from 8 to 13 horsepower. The sixth, which was No. 3, was a round-bottomed salt-water type boat, 37 feet long, built in Camden in 1912, with a four-cylinder four-stroke cycle gasoline Rockland Machine Company (Knox) gasoline engine. The seventh, No. 10, was designed by O.A. Harkness and built by the Company at Greenville in 1914-1915. She was the first boom-jumper. We have no dimensions, but she was probably about 30 feet long, perhaps 7-1/2 foot beam, flat-sterned and flat bottomed, with three keels; a main center keel with the stuffing-box for
the shaft in the stern-post above it; two bilge keels, with
deadwood coming down to them from the hull on each side of the
wheel to protect it from floating wood, and a sort of skid like
a sled-runner -- a "skeg" to a salt-water small boat man -- on the
bottom of each, projecting well beyond the stern, so that the boat
could slide over a floating log or a boom and come down on the
other side without the rudder or propeller striking. This boat,
we believe, was powered by a 15 h.p. Sterling gasoline engine.

In 1916, O.A. Harkness designed a round-bottomed three-keeled
model, No. 11, 35 feet long, which was built in Brewer by Cobb Bros.
She was used at the North Twin Dam, but does not seem to have been
a success, as he went back to the flat-bottomed type, and in this
year the Company bought the "Tethys". We must tell about this one,
doing the best we can with two accounts. The original Tethys,
said to have been named for the Greek Goddess of the Rivers, was
a steam launch, built as a pleasure craft, but being used as a
sardine carrier out of Bar Harbor in 1887, when she was sold to
W.D. Gower or G.W. Gower -- we have two names -- of Sedgwick, Maine,
who sold her the next year to Charles Capen of Greenville, who put
her on Moosehead Lake to carry fishing parties. In 1894 she broke
from her mooring during a storm and was wrecked. At that time she
was owned by Ed. Capen, Charles's brother.

Ed Capen had a second Tethys built at Brewer in 1895. She
was about 50 feet long, some ten feet longer than the original,
and was also steam driven, with a pilot house forward, a trunk
cabin over the engine room midships, and a canopy over the cock-
pit aft. Ed. Capen died, and she came into the possession of his
brother Charles, who sold her to the Great Northern Paper Company,
at which point she becomes of interest to us.
In the fall of 1916, she was sailed up to Northwest Carry, dragged out of the water and skidded across to Carry Pond; went up to the Pittston Farm on her own steam, and during the winter was hauled on the snow by sixteen horses to the Canada Falls flowage. She was worked there three years, towing, but drew too much water, and during her time there was holed and sunk by a drift pin projecting from a pier. In the spring of 1920, she was hauled overland back to Northwest Carry by two Lombard log haulers; the steam plant was replaced by a 40 horsepower Lathrop gasoline engine; and she was put back into Moosehead, doing towing and general work there until 1923. In that year, she was taken out at Lily Bay and hauled by three Holt tractors over dry land to Chesuncook Dam, and the celebrated Alex Gunn was put in charge of her. She did general work for a year, after which she was fitted up with an electric light plant, a searchlight, a fire pump and 2,000 feet of hose, for use in case of fires around the Lake. In 1925 she broke loose from her mooring and went ashore. The wreck was sold to Alex Gunn, who patched her up and ran her for a few years, again doing general work. She was still afloat in 1927, but did not last much longer. Perhaps we should class the Tethys with the towboats, but she was not really in that category.

There is some confusion about the boats of this class built in the next few years after 1916. According to the record we have, Nos. 12, 14 and 15 were built in 1917; No. 13, a 28-footer, in 1919, and No. 16 was bought in 1918, but there is nothing to indicate where they were constructed, and description of some of them is missing. However, in 1919 and 1920, four of the flat-bottomed style, Nos. 17, 18, 19 and 20, were built, three by Cobb Bros.
of Brewer, and one by William St. Germaine at Greenville. These were all 30 feet long, 7 foot beam, and were powered by 40 horsepower, four-cylinder, four-cycle Lathrop engines.

A Company inventory of boats in service in 1920 lists the "Owl", rebuilt in 1917-1918, on Dole Pond, and the "Vim", built in 1914, on Seboomook Lake. We know nothing about either of these, except that they were steamers. At that time the steamer "Caribou", which we mentioned earlier as being on Chesuncook Lake in the early 1900's was not listed, and we do not know what became of her. She may not have been owned by Great Northern. We have also found mention of other boats on the various lakes at different times, most of which we are quite sure did not belong to the Company.

The worst disaster in the history of Great Northern, in terms of fatalities, occurred in this year 1920, and involved Boat No. 12. We have taken what seems to us to be the most reasonable out of five accounts which vary in detail. On November 18th, a bitterly cold day, Alex Gunn, who had a contract for toting, left Chesuncook Dam with 35 men bound for the Company's Cuxabexis operation. They were a mixed lot; Russians, Finns, some Canadians and some Maine people, including Nelson Smith, clerk of the operation, and they had just come up from Greenville by truck. The 41-foot boat was overloaded, which was not the cause of the accident, but contributed to the loss of life, and a scow-load of hay, which it was intended to tow, was left behind because of the bad weather.

It was early evening, but long after dark, before they got into the Cuxabexis Thoroughfare back of Gero Island, about five miles from Chesuncook Village and a mile from the camp, when she caught
fire from a leaking fuel line, and went up like a torch. Everybody went overboard into the icy water. Alex Gunn, Nelson Smith and fourteen men made it to shore, where they would probably all have frozen to death except for two things. One was that one of them, Bob Snow, had a few matches in the earflaps of his cap -- some accounts have it that he had sufficient presence of mind to put them there before he jumped, but the writer finds this hard to believe; many careful woodsmen made it a point to have some matches in a place where they would stay dry -- and was able to start a fire. The second was that the storehouse man on the operation saw the blaze, and was able to reach Charlie Glaster, whose office was a couple of miles up-river from the Village, by telephone. Charlie Glaster got hold of his boatman, Fred Weickham, who was at the Village, and he and two men were at the scene to pick up the survivors in a little over an hour. Sixteen bodies were recovered by grappling within the next few days, and four were found the next spring at the mouth of Red Brook, five miles down the lake. A number of the dead, and we have no figures upon which we can rely, had no known relatives, and were buried in the Greenville Cemetery by the Company. Four were unknown. When the writer moved to Bangor in 1952, the small effects found on their bodies -- watches, a little money, a few rings -- were still in envelopes marked "Man No. 1", "Man No. 2" and so on, in the office safe. A woods poet, perhaps Larry Gorman, one of the most famous, wrote a "come-all-ye" of twenty-nine stanzas about this incident, from which some of the above information is taken. Ironically, after recovering from pneumonia, Alex Gunn was still running a boat on Chesuncook thirty years later, while Fred Weickham, an experienced river man who could "swim a mile in heavy
caulked shoes" fell off a boom the next year and drowned fifteen feet from shore.

The C.O. No. 21 -- "the last word in automotive travel" according to a rather flowery article in The Northern of June, 1921, was built by the Company at Chesuncook Dam under the direction of Charles Ingalls, of Machias, to plans made by O.A. Harkness, and was launched on May 24th of that year. She was 58 feet long, 14 foot beam, had two cabins, one forward, one aft, which would shelter about 50 people. She was intended for "towing on the drives and later for the carrying of passengers and freight on the lake", and we believe became the boat used for transporting V.I.P.'s. She was driven by a 60 horsepower Fairbanks Morse "crude oil" engine. This is the first mention we have found of the use of a crude oil engine in a boat, and the account of the launching says that it "marked an epoch in the annals of the country in the heart of the Maine woods and a new era in the work of the Great Northern Paper Company -- more especially in the progress of the Motor Boat Division headed by O.A. Harkness", so we have to conjecture that this was the first of the "C.O." boats, the C.O. meaning crude oil -- diesel fuel, that is. This engine may have been full diesel, a semi-diesel, or, as the account says, an oil engine, which did not run diesel at all; there is no way of knowing.

In 1923, the Company began to build its own boats at the Greenville Junction shop, and between that year and 1925 eight were constructed, the last being No. 30, leaving one number not accounted for. These boats, as far as we can determine, were all very similar to those of 1919-1920, except of somewhat heavier construction; open boats, flat bottomed (it is our impression that the flat bottom
was actually a very shallow V), straight-sided, with the three keels,
and all with the same 40 horsepower Lathrop engine. The old No. 10
was fitted with one of these in 1923. In 1925, however, the design
was modified. Nos. 31 and 32, built in that year, were 32 feet long
instead of 30; had hardwood bottoms; the bows more hollow to make
them more seaworthy, and part of the open cockpit was covered by
a shelter for the operator, called a cabin for convenience; but
they retained the straight stem and the flat bottom with three keels.
The power plant was changed also, 40-horsepower Fairbanks Morse
full diesels being installed, the inference being that this was
the first use of these engines. The account in the September 1928
Northern, from which the information on the boats built at Greenville
Junction is taken, says: "a different type of engine; a 40
h.p. Diesel is used. This, of course, burns fuel oil instead of
gasoline which is a great economy, as only half the amount is needed
and the oil costs only half the price of gasoline", seeming to con-
firm that the Lathrops which had become standard and were installed
in recently built boats were gasoline engines, and a well-informed
independent source says that the Lathrops of the 1920's all burned
gasoline. At any rate, we know that most, if not all of the older
craft were shortly converted to diesels, also becoming C.O. boats.
We have a number of references to older numbers with the C.O. pre-
fix, and we have a faint recollection of being told that this was
used so that no one would put gasoline in the fuel tanks. This
makes sense, but may be imagination.

Many of the older hulls were also provided with cabins, and
this is perhaps what happened in the case of the No. 3, of which
one of our old-timer friends wrote: "C.O. No. 3. C.O. is for
crude oil. Built at Brewer. Moved to Greenville Jct. via
B.&A. R.R. The only road at that time was from Lily Bay. Hauled
from Grant Farm into Caribou either by tractor or horses." An accompanying photograph shows a cabin. This may or may not have been the original No. 3, which according to Company records, was built in Camden. Things get mixed up in the memories of many years, as we have plenty of cause to know. However, there is no problem of memory in the following, from the same source:

"Edward Wood, better known as "P.I." (who operated the C.O. No. 3) sluiced the wood at Ripogenus and hauled slack boom up the lake. He would cut out one cylinder, shoulder his cant-dog; always wore caulked boots; and with the boat in motion, go back on the boom and straighten out the jillpokes." (Boomsticks that angled out of line) "It was said he couldn't swim a stroke."

P.I. Wood was what the river men would call "catty", but this was taking an awful chance. However, the river men were prone to take chances, too often with dire consequences.

At this point our information begins to run out, and the observations we make are based largely on deduction. Photographs of the No. 32, taken in the yard of the Greenville Shop in 1925, before launching, show no protection for the propeller other than the two extended false keels. By this time there had been nothing but short wood in the drive for seven or eight years, and Max Hilton notes that boats of this type, while they could ride up on and slide over a boom, had to go around bodies of floating wood, as the wheels were damaged if they tried to force a way through. Some time after 1925, then, bars were put between the two outside keels, behind the propeller, and by the 1930's, it would appear from his sketches that the flat-bottomed boats were being rebuilt without these extra
keels, but with cages, which went through a process of evolution, but all consisting of iron bars or straps attached to the deadwood at one end and to a strengthened rudder post set into an extension of the main keel at the other, curving outward in a streamlined shape at the middle, around the propeller. These could even go backward through floating short wood.

Apparently no new boat was built between 1925 and about 1927 or 1938, when No. 33, a larger salt-water-type round-bottomed craft, also designed by O.A. Harkness, was constructed specifically for towing on Seboomook Lake. We then have a gap in the numbers. We do not know whether this means that there was no more building, or whether there was a change in the numbering system. At any rate, the next boat of which we have record was No. 42, a still larger and more powerful craft for Seboomook towing, built at Bath just after World War II. She was followed shortly by Nos. 43 and 44. We have no description of any of these three, but they were the last of the wooden boats. No. 45, another Harkness design, his last, built at Bath in 1951 and used on a number of the lakes, had a steel hull, and from there on, we believe that all new and replacement boats were steel. We have made no effort to follow them, and have probably used up too much space on the subject already. Most of them were built down the coast, were a little smaller than the old C.O. boats -- this designation seems to have disappeared after World War II -- had a cuddy forward, a steersman's cabin midships, and an open cockpit aft, in the manner of Maine lobster boats, but the lines of the hulls were quite different.
The latest information we have is on No. 60, a 19-foot steel boat with an air-cooled inboard motor, being used on the Canada Falls flowage in 1964.

The story of the big towboats that operated only on Chesuncook and the Lower Lakes will not take so long to tell. In the chapter on the West Branch as it was before Great Northern, we noted the early sidewheeler "John Ross" and the later "A.B. Smith", named for "Uncle Anse" Smith of Chesuncook Village, and built in 1902, which was inherited from the Penobscot Log Driving Company. The "A.B. Smith" served well on Chesuncook Lake for a quarter of a century, but by 1925 was showing her age -- the 1891 boilers of the old "John Ross" were still in her -- and in that year Orrin Harkness made plans for a new boat to replace her. The "West Branch No. 1" had been built many years before; we will tell what we know about her later; and this new one was the "West Branch No. 2". She was laid down by a Company crew, directed by Charles Ingalls, at the Chesuncook Dam in May, 1926, after a shop had been built and equipped with wood-working machinery and a boiler and steam box for bending planking had been provided. She was very much larger than the A.B. Smith, and while her lines in general were those of a tugboat of the time; high-bowed and low-stermed, they were much refined. We do not have exact dimensions. One account says that she was 65 feet long, but another says that her deckhouse was 55 feet long, which does not seem to relate. Anyway, she was a "good-sized junk of a boat", as they would say. She had a 12" x 12" hard pine keel with a 6" x 12" birch shoe; an iron guard plate over it; and oak frames. Her garboard strakes were 5" thick, and upper planking 3", hard pine. The deckhouse contained a galley, dining room and
three state-rooms, with the pilot house forward, and there were accommodations in the forecastle for six men. She was powered by a 6-cylinder 360 horsepower Fairbanks Morse diesel, driving a single screw; had a diesel-driven generator for lights, the deck winch and other auxiliary equipment, and was white-painted. She originally had a short false funnel behind the pilot house, but this was removed some years later.

The West Branch No. 2 probably went into service early in 1927, the A.B. Smith being immediately retired, and for 33 years she plied the waters of Chesuncook, towing in all perhaps 4,000,000 cords of pulpwood. In the spring of 1961, she was replaced by the "William Hilton", a beautiful 70-foot twin-screw steel vessel of 20-foot beam, powered by two 230 horsepower General Motors diesel engines. She was all modern planes and angles, designed by Geerd Hendel and built by Goudy & Stevens at Fast Boothbay. The hull and superstructure of this new boat were transported overland separately by trailer truck, were assembled at the Chesuncook Dam, and she was put into service at once. In 1971, an observance of the end of river driving was held at the same place; everyone took a last cruise on her, and she was sold the next year to Sheepscot Pilots, Inc., of Southport, Maine.

The side-wheel steamer "F.W. Ayer", built, as we have noted in 1892-1893, probably at Norcross, for service on the Lower Lakes, was likewise inherited by Great Northern when the West Branch Driving & Reservoir Dam Company was formed. Towing on the Lower Lakes was more difficult than on Chesuncook, as there were shallows, and the channel was crooked, even after the North Twin Dam had been
raised, and she was being assisted by the "Rainbow", owned by the Fowlers, of Norcross. However, the Company immediately built the "West Branch No. 1" at that place, and she went to work in July, 1904. We have almost no information about this boat. She was just a small tug-boat of the style of those days, the sides of the deckhouse and pilot house typically sloping a little inboard, painted white, with the letters "W.B. No. 1" across the front of the pilot house. She was steam driven until about 1922, when a diesel engine was installed, in line with the trend of that time. The F.W. Ayer was reconditioned several times, without changing her appearance much, and remained in operation until the middle 1920's, perhaps as late as 1927. It is the writer's impression that she was laid up about that time, and it may be recalled that William A. Whitcomb had in 1928 held up a request for funds to build a new boat to replace her. For the next twenty years, the West Branch No. 1 did the towing on the Lower Lakes alone. She came to the end of her usefulness in 1943, when the "West Branch No. 3", also built at Norcross, was launched. Unfortunately, we have no description except a picture, but she was one of Orrin Harkness' most attractive designs. She had a wooden, flush-decked hull with a beautiful sheer, and looked very little like a tugboat, although she had the usual deckhouse with a pilot house forward, and the usual white paint. She was diesel driven, her Fairbanks Morse engine being the one which we noted was diverted on route and used to drive a pump during part of the water-short year 1942 at the Madison mill. She was somewhat larger than the West Branch No. 2, and like that vessel originally had a false funnel, also removed later. In information given to the National Fisherman for a 1967 article, we said that we
believed that her deckhouse had been taken from some Moosehead Lake boat, and there must have been some background for this statement, but we now think it more probable that it was built at the Greenville Shop, which would relate it to Moosehead Lake. The "West Branch No. 3" had about the same life as her predecessor; 21 years; and in 1964 she was replaced by the "O.A. Harkness", a twin of the "William Hilton", and built at the same yard.

All the old wooden towboats, to the best of our knowledge, were hauled out, stripped and burned, but the steel boats went back to salt water. A picture of the "O.A. Harkness" taken when she was being hauled through Brownville on the way to Norcross bore the caption "She May Never Go Down To The Sea Again", but she did, being sold in 1972 to the Maine Department of Sea and Shore Fisheries (Department of Marine Resources). Felix Fernald wrote in his Pittston Farm Weekly on the occasion of her launching on June 6, 1964:

"Although Mr. Harkness has passed on to be Admiral of a larger Inland Fleet on a greater Inland Sea, his name will still be with us as long as the boat that bears his name continues to ply the Northern's waters."

The boat no longer plies Great Northern's waters, and the Inland Fleet is gone, like everything else connected with river driving, but as long as a copy of this story remains in existence the name of that giant of the old Company, Orrin A. Harkness, who was not only Admiral of the Inland Fleet, but was Superintendent of Maintenance of all the old Spruce Wood Department's mechanical equipment, will not be forgotten.
We suppose it would add some meaning to what we have written to provide some figures on the amount of wood in the West Branch drive over the years. They do not necessarily reflect the cut in any season, as wood was often held back for one reason or another, to be driven the next year, and after the 1920's they do not bear much relationship to the generally upward trend in paper production. We will therefore only summarize, rather sketchily, commenting where we have anything to comment upon.

Our earliest figure is in 1903, when 118,000 cords came down, and between that year and 1908, after the Fast Millinocket mill started up, the difference from year to year was not great, the average being about 150,000 cords. In 1908, approximately 200,000 cords were driven, and this would be a pretty good average until 1917, when Nos. 9 and 10 machines got into full production at Millinocket, with the exception of two years, 1911 and 1913, when the amounts were only about 130,000 cords, for some reason. For the next eight years, the figures are all over the place; about 250,000 cords in 1917 and 1919; 300,000 in 1918 and 1921; and just under 200,000 cords in 1920 and 1922. The year 1923 saw the biggest drive on record, 430,000 cords; the next year about 280,000, and in 1925 there was no drive at all, although a cut was made in the 1924-1925 season. We would suppose that the reason for this was that the holding grounds at the mills were unable to take the wood after the huge drives of the previous two years.

By this time there were a number of substantial operations on the East Branch, cutting in Aroostook County was expanding, and
until the depression hit, the West Branch drive averaged around 250,000 cords, without too much variation. In 1930, only 136,000 cords were driven; in 1931 about 200,000 again. In 1932 less than 3,000 cords came down, at a cost of $27.00 a cord against a normal of about 60 cents at that time. There were the more or less usual drives, about 200,000 cords, in 1933 and 1935, but in between, 1934 deliveries were only 62,000 cords. These vagaries, we have no doubt, were due to the uncertainties of the depression years. Wood was cut on the river right along, and while this tied up money, the unit cost of driving could be kept lower by bringing it down from the more distant points every other year. From 1936 through World War II there was fairly regular West Branch delivery of between 140,000 and 180,000 cords, except for 1939, when for some reason only half a drive was made. After the war, there was a substantial jump, to just a little under 300,000 cords, with little variation from year to year through 1951. However, this was no more than had been coming down the West Branch thirty years before, although paper production had increased about 50 percent, so much had the purchased wood supply and operations in areas other than the West Branch been developed. We have few numbers after 1951, but they were probably up and down, and generally decreasing; only 52,000 cords in 1960; but about 175,000 cords came down the river in 1969, and 73,000 cords in 1970, and that was the end of it, except for a little rear cleaned up in 1971. Our information does not say whether the figures are on a rough or peeled cord basis, but they are probably rough, as tolls, almost never enough to cover cost, were duly charged by the West Branch Driving & Reservoir Dam Company on a rough cord basis. All of this is probably not particularly educational, but is a little more interesting than a long table of figures.
At this point, we should perhaps go back briefly to 1920, when we said that the French Canadian contractors, who had cut a lot of this wood we have been talking about, were not in evidence. In 1922, they were back, Belanger on Hurricane; Roberge, Giraux and Bouchard up around Loon Stream. This was the season that 70,000 cords were cut on the John Breakey land on Quebec, for which the Portage Lake sluice was built. This was used only three seasons, incidentally. Although the record we have shows this as Charley Gilbert's operation, old-timers tell us that Ed. Lacroix cut the wood, although Charley Gilbert built the sluice. At any rate, Ed. Lacroix took his first Company job in Maine in 1923-1924, this contract being for 85,000 cords from the Hurricane-Dole area. In 1924-1925 he cut some 127,000 cords, and in 1925-1926 about 72,000 cords on the North and South Branches. He had begun operations for the Company on the Allagash before this time, and we will have much more on this later, and he practically eliminated the older French Canadian contractors, except as jobbers, until after the Company operation phase of the middle 1930's, when they began to come back, some to the North Branch, some to the Kennebec. From that time we have no record of names, but we can recall a few; Poulin, Aucoin, Grenier, Dumas, Adelard Gilbert (Zhilbear to you); Peter Gilbert, Pete Drouin, (who actually came from Lewiston) at least four Paquets; Arthur, Joe and Odilas we remember, most of whom were around for a very long time, and there were others whose names we do not remember. We have mentioned only a few of the contractors, Canadian and domestic, who worked for the Company on the West Branch for so many years. It would be impossible to name them all, and we refer here again to the French Canadians only because they bear upon the matter of labor supply, of which we will have a little more to say later. With this, we leave the West Branch temporarily, and turn to Aroostook County.
Col. John W. Thomason, Jr., in his "Lone Star Preacher" (Scribner's, 1941) has his principal character, the Elder Praxiteles Swan, Captain, C.S.A., say in his older years, of his wartime experiences:

"We all went up to Gettysburg, the summer of '63; and some of us came back from there; and that's all, except the details. I wouldn't bother you with the details."

This story describes minutely the second day of the battle, when the Elder and his people came up against the 20th Maine, "very hard men", on the upper slopes of Little Round Top; specifically H Company of this regiment, for our purpose here; Aroostook County farmers and woodsmen. Like Captain Swan, however, we will not bother you with the details of the development of what were called the Railroad Lands, which became and remain a major source of wood supply, because we do not have very many.

There were never any such massive improvements as were made on the West Branch. There was a considerable amount of plant there, but our effort to obtain information about it has met with little success. Not that it may not be available, but as one informant wrote: "The Aroostook operations are hard to document, as most were contracts with supervision (long) on skill but darn short on paper". We have been referred to half a dozen people "who might know", but by this stage of the game, we have learned that weeks spent in running down these sources usually results in about fifteen minutes worth of fact. Neither are we about to pore over masses of surveyors' notes that may or may not contain information we would like to have. Therefore, we will just make the best of what we know, or think we know, sticking this together here and there with bits

Spruce Wood - 201
of hard evidence.

Earlier tabulations show purchased rail wood being received at Millinocket as far back as 1910, and substantial but varying amounts thereafter. We have also noted what were by our reasoning Company operations in Aroostook in 1917-1918, and that the first substantial operation was on Dyer Brook in 1919-1920. The wood from this, we believe, was driven down the Mattawamkeag River to a loading plant which was called Dyer Brook, but which we are quite sure was really at Island Falls, and was in use for only a relatively few years. The previous smaller operations were on Smyrna, B. R. 2, C.R.2, D.R. 2 and Monticello. The Smyrna wood, we think, was hauled to Timoney Siding, but the rest was driven down the Meduxnekeag River to a loading plant built in 1918 at Monticello, along with piers for a holding ground, a storehouse, a blacksmith shop, a 30-man boarding house and an ice house. Several cottages, a cook-bunk-house, a 24-horse stable and a small office building, which were already there, had been purchased the year before.

This was probably the first loading plant built by the Company in the County. The main conveyor was a cable and button job, driven by a gasoline engine, the trough elevated on bents to a height just above that of an open-top rack car, with walkways from which wood could be pulled off into cars set on spurs along it. This conveyor could handle 20 cars in a 10-hour day. The Meduxnekeag was subject to extreme variations in flow, and the main conveyor was originally fed by a chain conveyor running out about 150 feet into the river on piers, and driven by a second engine, the uptake from the water being adjustable to different levels. We imagine that a similar arrangement was used in other places where
the same conditions were encountered. However, this conveyor was later rebuilt into a single unit. The Monticello operation was active until about 1928. We do not know what disposition was made of it, but it was held for some time, as some of the cottages were sold in 1937.

At this time, the wood was tiered up after being dumped into the cars, and freight was by weight. Later on; we have not established a date, but probably in the 1930's; a deal was made with the Bangor & Aroostook for freight on a per car basis. Still later, in the 1940's when the mechanical car dumpers were developed, it was found that it was an economy to loose load, without tiering, the reduction in labor more than offsetting the smaller amount of wood carried per car. But again we digress, as usual.

The Company also owned property at Harvey's Siding, a few miles north of Monticello-- a sawmill, a boarding house, a hay barn, a small stable, several cottages and a schoolhouse -- probably the whole settlement. This was purchased at an unknown date, and wood may possibly have been loaded there, as there was considerable trackage, but since a storehouse to hold 100 tons of miscellaneous supplies was built in 1917, we assume that it was bought in that year, along with that at Monticello, and we suppose that this place was used as a depot for operations in the area. We do not know what happened to it; only that one of the cottages there was sold in 1929, shortly after Monticello was shut down. There are a number of such places which we know ceased to be used by the Company where the only indication of what happened to them is the sale of houses, the most marketable item.
In 1921-1922, 1922-1923 and 1923-1924 there were Company operations from which wood was driven to the Island Falls or Monticello conveyors, or to the loading plant at Sheridan. It is obvious that the record we have is not complete, as one of these, a large job with six or seven camps, opened in the fall of 1922 in the area above McNally Pond, is not listed. In the last season above, over 100,000 cords of wood were also purchased for rail delivery, contributing to the over-supply that resulted in there being no drive on the West Branch in 1925. We are unable to arrive at any sensible reason for the heavy cutting of this time. However, beginning in the 1924-1925 season, Aroostook became almost entirely contractor country, one reason why there is not more history. We have only a little information on this development, and it covers only a few years, but we will use what is available, as well as we can interpret it, to establish the growth of the contractor system on the Railroad Lands.

In that season, there were three contract jobs. Delmont Emerson cut about 9,000 cords on Hersey Township, which was driven to Island Falls; Tom Ranney had a big operation, some 36,000 cords, on T.10 R.11 and T.11 R.11, with a long drive down the Machias River to Sheridan (we said in another place that a loading conveyor was built there in 1927 when the Company bought the Ashland Company, but this must have taken the place of an earlier one) and Brown -- we have forgotten the first names of some of these people -- had a small job on T.7 R.4, the wood probably being hauled to one of the several sidings around St. Croix Lake. At this time, operations began on the East Branch, too, and along with this, were heavy in the area north of Dolby Pond. We will take these up a little later.
The next season slacked off in Aroostook, with the Company running an operation near Stacyville, and Greenlaw & Thomas one on T10 R.6, T.11 R.5 and T.8 R.4, some of this wood coming down to the conveyor at Sheridan, some to a loading plant at Masardis, and some to St. Croix Siding; and when we speak of sidings, we mean places where cars were loaded directly from sleds, tractor trains or trucks, without benefit of conveyors, and there was hardly any place with a siding in all of northern Maine where wood was not loaded for shipment to Great Northern mills. The winter of 1925-1926 is when Leon White made the trip we described earlier, the Greenlaw operation being the one started by the Company in 1922 and involving the building of the McNally Pond dam. In 1926-1927 we find Brown, Spearen and Ranney; in 1927-1928 George Greenlaw, Tom Pinkham, Sr., and Jeffers; in 1928-1929 and 1929-1930 the Summit Lumber Company, Greenlaw, Pinkham and George Kneeland; in 1930-1931 Greenlaw, Pinkham, Emerson, Daugherty and Kneeland and in 1931-1932 Greenlaw; Pinkham, whose contracts were growing larger, in this season nearly 22,000 cords; and Laliberte. In 1932-1933 of the depression period all the railroad wood was purchased, and little was contracted in 1933-1934 either, Tom Pinkham having the only job, and that was not very large. Between 1924-1925 and 1931-1932 these contracts did not represent a great amount of wood -- between 25,000 and 40,000 cords a year in total. Up through the 1927-1928 season, purchased wood was in just about the same quantity, but in the next two years it jumped up to between 125,000 and 150,000 cords per year.

From this point on we have almost no information, not even the quantity of wood cut. We know only that after the depression, and from there on without interruption, the contractors dominated.
the scene, and there were no Company operations that we know about. It seems to us that John Cormier cut for the Company, although we do not find his name in any record. Tom Pinkham grew very large indeed, at one time up to something over 70,000 cords in one year, from memory. George Greenlaw, Delmont Emerson, George Kneeland and Tom Ranney cut regularly. Later on there were other people; Newcombe Sutherland, who became the Company's Superintendent in the Aroostook area, Wilmer Saucier and Ken Bartlett we remember, and there were others, and it must be kept in mind that in naming names under these conditions we are just mentioning those that come to mind readily, as examples. The operations on the Machias River continued for over 30 years. In spite of all the work done on this river, as noted in another place, there was no really good holding ground at Sheridan, and the Machias Lake and 12-mile dams were both washed out in a flood in 1954, a substantial amount of wood being lost. The last drive was in the spring of 1958. Other operations moved northward. The Fish River, the Red River and Wallagrass Stream were cut and driven, some for many years, and operations extended up the St. John River above St. Francis and into the country around Square Lake. There were loading plants at Portage and Winerville before 1928, the latter loading its last wood in 1958. A storage stacker and loading conveyor at Washburn were leased from the American Realty Company. A large amount of wood piled there burned in 1925, the Company collecting $450,000 in insurance. Much later, perhaps in the late 1930's, there was a conveyor at Wallagrass Lake, loading trucks which hauled out to the railroad. Although the Company had bought or had options on several sites for holding grounds and loading plants on the St. John River; at St. John, The
Ledges and it seems to us a third place; there were never, to the best of our knowledge, any Company developments on the main St. John. However, Ed. Lacroix had a drum barker and stacker installation at Chapel Eddy, near Van Buren, and cut wood which he drove down to this place, for a number of years, barked it, and shipped it to Millinocket. We cannot put any date on this operation, but a guess would again be in the late 1920's; we know that he shipped about 12,000 cords of this wood in 1928-1929.

From this point, we have very little more to say about Aroostook County. This results in a sort of anticlimax, but there is no help for it. There were no great dams, huge farms or fleets of boats. They just cut and bought a great deal of wood and drove or hauled it to the railroad. The start of procurement of wood by contract cutting, as distinct from purchasing, came at the beginning of the tractor and truck era, and there was never any need for developments such as those on the West Branch. Roads were built, starting in the 1930's, not in an interconnected system, but to reach individual operating areas, and the bulk of the wood harvested was hauled to the sidings by tractor trains, and later, as now, by trucks. This made certain problems. Wood could be held in the water, but where it was delivered to the railroad it had to be shipped, and there were times when the mill unloading facilities just could not handle it. At these times, orders went out to hold up on the car wood, but with loading going on all over the country this was easier said than done, the Spruce Wood Department not wanting to lose its contract truckers, for one thing, and besides, there was the purchased wood, and there was always wood in transit. This often resulted in demurrage, which cost the mills, or in "piling down" wood at some
place where it could be picked up and loaded later, which cost the Spruce Wood Department, either situation causing some acrimony. Another problem was that it was considered necessary to peel wood shipped by rail, and whereas Aroostook woodsment would peel, while those on the West Branch, in general, would not, the labor supply was at times insufficient for peeling operations, and we know that in the 1920's the Company owned a large number of portable rossers, which were leased to contractors in the County. On the other hand, we know that during the depression years, when men were begging for work, a not inconsiderable amount of wood cut too late to sap peel was barked by hand with draw-knives.

Truck hauling developed more rapidly in Aroostook than on the West Branch, and river driving was discontinued much sooner, there being no driving that we know of after 1958. The heavy use of motor vehicles produced the only development approximating that of the big depots on the West Branch; the garage-storehouse complex at Sheridan. A small repair shop was established at Ashland at a fairly early date, probably some time in the 1930's, and a wooden storehouse was built on the old Ashland Company property at Sheridan in 1941. A new steel storehouse serving both Company and contract operations, was built at Sheridan in 1953, and a new shop was erected nearby in 1956, the old Ashland operation being moved to that place, which is as this is written headquarters for all Aroostook activities.

The road system in the County was tremendously expanded, starting in the 1950's, and with a lot of additional construction in the West Branch area as well, the Company presently has something like 2,000 miles of private road, four times as much as the 400-500 miles of 1951. Much of this, however, is semi-permanent. It is
probably as good as the old "turnpikes" which we have described, but is not intended, as most of them were, to be used forever, but to allow wood to be trucked out of different operating areas, and then to be abandoned and new ones built in other places.

With this, we must leave Aroostook County. We have made sincere efforts to get more information, but there is almost no documentation beyond the 1930's, and while individuals in the Woodlands Department have been most helpful, no definitive story has been forthcoming, and time is running out. Therefore, let us go back in time to a few of the more unusual operations that we promised earlier to discuss. As it just so happens, they occurred in the eventful 1920's, or at least had their beginning in that decade.

In telling this story, we must jump around from one thing to another, and this is as good a place as any to mention the Social Service Division, an organization probably unique in the annals of the Maine woods.

It was established early in 1920, under a Superintendent, Montford S. Hill, who appears to have had two men on his staff. Later, we believe, there were four. Its origin and purpose are spelled out on the front page the first issue of its magazine "The Northern", published during the week of the fifteenth of each month from April, 1921 to October, 1928:

"The Social Service Division of the Spruce Wood Department of the Great Northern Paper Company is the development of an idea which had its inception in the active brain of Manager F.A. Gilbert in his desire to bring to the people of the Spruce Wood Department more of the pleasures of life and to afford them opportunities for diversion which they could not otherwise get."
That is the reason for its existence and its excuse for functioning."

In the year before publication of the Northern began, the Social Service Division had traveling libraries of books, rented through the office of the State Librarian, at Pittston, Seboomook, the Grant Farm, the Rice Farm, Dyer Brook and Monticello; it had Victrolas with popular and classical records at these same places, and was delivering to them and to the principal woods depots 40 copies each of a number of newspapers and magazines, which were passed along to the outlying camps; was organizing field days and other social events; had distributed baseball equipment and was arranging for the construction of athletic fields at several locations, and was making efforts to provide better laundry and bathing facilities for the Company's woodsmen and farm workers. Its pride and joy, however, was its 35 m.m. projector and portable generator set, with which it exhibited popular movies at the farms, depots and camps. These things, plus lectures and an "Americanization" program for the foreign workers covered the general scope of its activities while it existed, and its services were extended to other places, like the Ripogenus Dam and the Grindstone conveyor operation -- wherever there were substantial numbers of men.

The Northern, until September 1924 sub-titled "A Magazine of Contact between the Management and the Men of the Spruce Wood Department, Great Northern Paper Company" was a 16-page 9" x 12" pamphlet, containing a mixture of history, humor, poetry, philosophy, current news of the Spruce Wood Department's activities, a lot of miscellaneous information, news items from each of the mills; in spite of its subtitle, and a tremendous number of drawings and photographs.
For the first few months, it was printed black on white coated stock, with no special front page treatment. Colored type was used on the front cover of the Christmas issue in 1921, from which point it went through a process of evolution -- in 1922 a black and white cut of some woods scene superimposed on a conventionalized black and white pen and ink landscape; and for a few months in 1923 the same black and white sketch of a teamster in the old logging days. Then it burst into color, mostly reproductions of drawings or paintings, some of them rather crudely done.

In August, 1924, the Social Service Division was taken over by Alfred G. Hempstead, and the Northern changed abruptly. It became much more formal. The sub-title was eliminated, as was the little box in the mast-head, which up to March, 1922 had read "Ten cents a year to those unfortunates without the pale -- otherwise gratis", and after that "Gratis to the fortunate within the pale -- gratis to the unfortunates without the pale" (we have no idea as to what constituted the bounds of the pale); the format was rearranged; most of the home-grown jokes and humor were eliminated, the paper was changed to off-white, and the front covers from then on became sepia or green-black reproductions of photographs, bleeding four sides. Many of these were of great beauty, although one of them showing Fred Gilbert, dressed in an ordinary business suit and Homburg hat, thumb in armhole of vest, fishing from a canoe paddled by a guide (August, 1925) drew caustic criticism from William A. Whitcomb.

One of the major accomplishments of the Social Service Department was the making of the 12-reel motion picture "Jack Spruce", the story of the Spruce Wood Department's activities, based on the
adventures of a city boy who goes to work in the Maine woods, learns the job from the ground up, becomes a Superintendent in the operation and finally retires to a farm with his family. This was made, we believe, by a professional crew, starting about the middle of 1921, and it was finished in December, 1922. This picture was famous in its time, and was shown widely in Maine, perhaps in other parts of the country. Unfortunately, it would appear that no copies of it were ever made.

The Social Service Division was dissolved on William A. Whitcomb's orders in October, 1928, and publication of the Northern ceased. A few complete sets are in existence, required reading for one who is interested in the Company's woods operations in the 1920's, and the source of much other information about the Maine woods. We do not know whether or not the Jack Spruce movie had been retired before this time. It was in storage at Pittston years later, but was neglected, and the film disintegrated beyond repair before anyone thought of having it restored. Almost all of the plates and film of the thousands of photos used in The Northern have also disappeared.

It appears to have been clear, from an early date, that the St. John River basin, as well as the West Branch and the Railroad Lands, would have to be tapped for wood supply. Some time between 1908 and 1910, the Bangor & Aroostook had surveyed for a line to be run up along the east side of Chesuncook Lake and the west side of Chamberlain Lake, and down the Allagash to St. Francis. This would have opened up a lot of territory, but never materialized, our information being that the rates they proposed from points along this route to Millinocket were considered to be too high. Logs had been
driven down the various branches of the St. John River from their far upper reaches, for many years, but to drive pulpwood northward to the nearest railhead in the Fort Kent area, and haul it back to Millinocket, was impractical, although the Company had given consideration to it, as we have noted, and did not abandon it until the trucks had provided a means of moving wood long distances. Fred Gilbert therefore turned to the thought of building his own railroad into the St. John watershed.

The result was the Seboomook Lake & St. John, a well-constructed, standard-gauge line, with no grade greater than two percent against the load, complete with a telephone system, semaphore signals and all the appurtenances of a big railroad, and it was a big mistake. Most of the information on its construction comes from The Northern and from A.G. Hempstead's "The Penobscot Boom", in which he draws heavily from one of two articles in The Northern, the source of which he says is unknown.

The first survey was made by Halbert Robinson, of Patten, in 1910, after negotiations with the Bangor & Aroostook had broken down. This was still in the days of long log pulpwood, and in the opinion of some old-timers, the concept was poor even then. However, nothing further was done until 1919, when it was decided to go ahead with the job. H.W. Wright, an experienced railroad engineer, re-surveyed the right-of-way, relocating about twelve miles of it. He placed the south terminal on the north shore of Seboomook Lake, about six miles above the dam. From here the line ran northward up the valley of Logan Brook into T.4 R.17, just west of the east line of that town, in which it crossed the height of land, swung westward along the south shore of Summit Pond to the Baker Branch of the St. John, down the east side of the river, past 4th St. John Pond,
a total of about 18 miles, and ended nowhere in particular, at a point about two miles from the northeast corner of T.6 R.17.

Work was started late in the summer of 1919, under the direction of J.B. Stewart, a former Bangor & Aroostook man, but in that year was confined to clearing part of the right-of-way and the cutting of poles for the telephone line and logs to be made into ties. In the summer of 1920, work was begun on culverts and bridges, one of the latter a trestle at Logan Brook about 600 feet long. A new wharf was built on the south shore of Seboomook Lake, at Carry Pond, and another wharf, with a storehouse, at the South Terminal on the north side of the lake. During the winter of 1920-1921 a sawmill was put up at the South Terminal to make lumber for the necessary structures, and in 1921 an office, a storehouse, a boarding house, an engine house, a car repair shop, a machine and blacksmith shop, two or three cottages and a few other small buildings, all of frame construction, covered with roofing paper, were constructed.

Everything for this job except lumber had to be brought from railhead at Kineo. Scows loaded with material and equipment were towed by Coburn Steamboat Company towboats to the existing Seboomook Wharf at Northwest Carry. This had to be enlarged, so that tracks could be run out onto it, on both sides of the storehouse, which was also improved. A temporary railroad track, something over a mile long, to carry this stuff, was laid on the turnpike road between the Seboomook wharf and the new one at Carry Pond. Here everything had to be transferred to other scows, which were towed by the railroad's own boat across Seboomook Lake to the
South Terminal. There is no information as to what was used for power on this temporary railroad.

In the spring of 1921, the job was taken over by Joe Mullen. By summer, he was working all along the line, from five construction camps, with 700 men, and a scow, 100 feet long and 25 feet wide, named the "Pittston", was being constructed near the Pittston Farm. A steam shovel, horses, carts and a complete narrow-gauge work train had been ferried across Seboomook Lake. Ties were laid for a standard-gauge line, and the narrow-gauge tracks were placed on these, the little "Dinky" train being used for hauling supplies, rails, roadbed fill and ballast.

In July, 1921, a new, modern geared-drive 65 ton coal-fired logging locomotive, maximum speed fifteen miles an hour, lettered "S.L. & S.J. No. 2" was run up from Portland to Kineo over the Maine Central tracks, and was loaded, together with a number of pulpwood cars, on three scows roped together, with cable slings passing under the big center scow carrying the engine, and was towed to the Seboomook wharf, where it went ashore under its own power over a temporary ramp, and ran across the "turnpike" railroad to Carry Pond. Later, it was towed across to the South Terminal, along with fifteen or twenty cars, each capable of carrying perhaps ten cords of wood, on the "Pittston" scow.

The inclusion of a semaphore signal system in the plans for the railroad indicates the intention to operate more than one train; although we find nothing about passing track; and our information is that a second locomotive, which would have been No. 1, we suppose, was bought, and may have been brought up as far as Kineo,
but was sold back to the builder, Baldwin Locomotive Works, and was never taken up the lake.

About what happened between 1922 and 1928 there is almost no information. It is said that about twelve miles of the road was completed, which would have been to 4th St. John Pond. At the South Terminal, the track was run out onto a long wharf where wood was to be unloaded. There are no dates, but what was done must have been completed fairly early, because in 1926 Joe Mullen made repairs all along the line, and filled the trestle with gravel. It makes no great difference, since except for what was cut on the right-of-way, not one stick of pulpwood was ever hauled over the Seboomook Lake & St. John.

It is a little hard to understand why this road was built in this location. It did not reach very much country from which wood could not just as well have been tractor-hauled to the North Branch, Elm Stream or Russell Stream, and the writer remembers being told when he first went to Boston that it was never operated because a large feeder road system would have been required to supply it, and that by the time it was ready to operate, it was found that direct hauling by tractor train would be more efficient for the distance involved. Even though Fred Gilbert had authorized its construction, even he seems to have had some doubts about it, as about the time work was getting under way, he was having a survey made for another railroad in another place, which was built and put into use while the S.L. & S.J. was lying there rusting.

Anyway, William A. Whitcomb had always been opposed to it, and as we have noted, one of his first orders, when he became President,
was to scrap it and charge it off. Nobody really knew what the Seboomook Lake & St. John had cost. The scuttlebutt was that it was in the vicinity of $1,000,000, but the Auditing Department could produce no figures. The job of establishing a cost was then turned over to Louis Cook, one of the Spruce Wood Department engineers, who, as he told the writer, "doped it out the best he could", and in January, 1929, came up with a figure of approximately $830,000. Depreciation of $225,000 was allowed, and the balance, just over $600,000, was written off against the previous year's operations. The rails were torn up and the equipment junked in 1929, although someone has told us that the old caboose was still there in 1971. In the middle 1950's, a gravel road was built on the old right-of-way as far as 4th St. John Pond. This was connected to the Caucomgomoc road by a short piece of new road just north of Seboomook Lake, and around the same time the canal from 5th St. John Pond to the North Branch, mentioned earlier, was constructed. And this, in its bare essentials, is the story of the Seboomook Lake & St. John, the railroad that never quite was.

There was a lot of wood up in the Allagash country, and in past years, as we have noted, some of this had come down the Fast Branch of the Penobscot through Eagle and Chamberlain Lakes and the Telos Canal. This was the area to which Fred Gilbert turned his attention in 1921, when construction of the S.L. & S.J. was just getting started. In that year, a study was made by the Company of some way to get wood from this region to the mills by way of the West Branch, and two possibilities developed; the first a conveyor from Chamberlain Lake to Mud Pond, with a sluice from there into Umbazookuskus, the outlet of which runs into Chesuncook Lake;
the second a log hauler road or a railroad from some unknown point on Chamberlain Lake to Umbazookskus. The first scheme was passed up, as it would have meant diverting Fast Branch water from Chamberlain Lake into the West Branch, and a rough survey was made for a railroad. This was as far as the matter went at that time, and construction of the S.L. & S.J. was completed. The outcome, however, was the building of the Eagle Lake & West Branch Railroad (also called the "Lacroix Railroad" and the "Eagle Lake Tramway", although it had nothing to do with that long-gone enterprise except that they both started at the same point on Eagle Lake) and it was convenient to refer to that place as The Tramway, which we will do occasionally in this story.

Speaking figuratively, almost as much has been written about this development as about the Civil War. There seems to be a sort of glamor attached to it. We have no less than eight recitals of the history of the Eagle Lake & West Branch, all different, none complete, some containing much misinformation, and most more or less confused with the Chesuncook & Chamberlain, built at the same time as a separate project. Even The Company's own magazine, The Northern, is misleading, as an article in the November 1926 issue carries the sub-heading "The Great Northern Paper Company Builds a Railroad from Eagle Lake to Chesuncook Lake", which it never did. The accounts in this publication also contain other obvious errors, but they are the only contemporary sources available. We do not know the whole story either, but since we cannot accept any of the accounts as they stand, we will sort out fact from fancy to the best of our ability, and, with less confidence than that displayed by other writers, come up with an abbreviated
version of our own, dealing with the two railroads separately, as far as possible, and starting with the Fagle Lake & West Branch.

Had it not been for Edouard Lacroix, this road might not have been built when it was, and had it been a few years later, when Great Northern management was different and tractor hauling techniques more advanced, it might never have been built at all. Edouard Lacroix (to his people "M'sieu Lackro", accent on the first syllable) was perhaps the foremost lumberman of his time and place. Like Fred Gilbert, he did everything on a large scale—it is said that he once asked the Company for an advance of a million dollars, and that was a great deal of money at that time. A big, good-looking man, very nervous, he hailed from St. Georges Beauce, or more properly St. Georges East, Beauce County, P.Q., where he did business under the name Ed. Lacroix Ltd. His brothers, Charles and Antoine, were associated with him, but he was the head honcho. Up to about the time of which we are writing, his principal interests had been on the St. John River, where he owned a sawmill, located at Keegan, Maine. We do not know just how he came to connect up with the Great Northern Paper Company, but he had a large following of labor in the Eastern Townships, and we are inclined to the belief that he cut on the Breakey land in that area in the 1922-1923 season as a contractor for Charley Gilbert, who was apparently about to get out of the business, as we do not find that he had any jobs after that season. Woods labor was scarce — we know that men were being hired in Boston at that time — and it would be reasonable to suppose that this combination of circumstances brought him to the North and South Branches, where Charley Gilbert had been cutting for a number of years, and where, as we have noted, he con-
ducted very large operations for the Company in the 1923-1924 to 1925-
1926 seasons, and had become entrenched as a contractor. A letter
from Lou Stearns to William A. Whitcomb, dated July 21, 1930, says,
in part:

"Prior to 1923 this Company was doing business with
Ed. Lacroix in his individual capacity. At or prior
to that time Mr. Lacroix was doing business in
Quebec as Ed. Lacroix, Ltd., under a Provincial
charter. I think the Madawaska Company was formed
largely, if not wholly, at my suggestion. At its
incorporation, $500,000 in actual assets in the
State of Maine went into the company".

This would appear to make 1923 the year of incorporation
of the Madawaska Company. The assets that went into it, some
at this time and some later, were the Keegan mill, land and
stumpage permits which Ed. Lacroix purchased from the Van Buren
Lumber Company and others, and rights on the Allagash River, in-
cluding stock in the Heron Lake Dam Company. To the best of our
knowledge, Ed. Lacroix was the sole owner, and we will use his
name and that of the Madawaska Company synonymously. (He subse-
quently formed another company, the Madawaska Corporation, but this
had its operations in the Gaspe, and has nothing to do with our
story). There was a later financial foul-up between Ed. Lacroix
Ltd., the Madawaska Company, the Madawaska Corporation, the Bank
of Montreal and the First National Bank of Boston, which the
Company helped straighten out, but we will not go into that, as
it was not serious). At this point, his interests and those of the
Company had come to coincide. Fred Gilbert was desirous of getting
a supply of pulpwood out of the upper Allagash area, where the Company had no land, if some way could be found to get it into the Penobscot; Ed. Lacroix had a lot of land and stumpage permits there, with a road in from Lac Frontiere (English Lake) on the Quebec border, and was cutting logs and driving them down the St. John River, while at the same time operating for the Company on the upper West Branch. Something had to come from that combination.

Nobody now living knows what kind of deal was made. We have found no records, and did not expect to. The writer is sure that it involved a contract for some large amount of wood yearly, for a period of five years, to be cut by the Madawaska Company from its land or on permits obtained by it or by Great Northern, to be delivered by one means or another into Penobscot waters. Negotiations must have been started in 1924, but final arrangements could not have been worked out until some time in 1925, and the contract was not effective until the 1926-1927 season. This was of course before such agreements had to be formally approved by the President.

While Fred Gilbert had pretty much decided several years back that a railroad was indicated, there were a number of alternatives. It would appear that in 1925 he was still trying to get from the Bangor & Aroostook, unsuccessfully, what he considered to be a satisfactory rate on wood driven down to St. Francis or Fort Kent; there was the possibility of tractor hauling, and it also occurred to him to give consideration to driving down the Fast Branch by way of the old Telos Cut. In June, 1925, he, and with Ed. Lacroix, Al. MacNeill and O.A. Harkness, visited the Churchill Lake area, and then came down the Fast Branch to Grindstone by canoe. This
eliminated that idea, as they found that the upper part of the river was unsuitable for driving large amounts of wood without very expensive improvements, after which there would be more expense to get it from the East Branch to the mills. Next, Al MacNeill explored the country between the head of Umbazookskus and some point on Chamberlain Lake, and in the summer of 1925 a right-of-way was cut for a railroad in that location, but this route was found to be unsatisfactory. It then seems that there was some wavering between the construction of a railroad and the use of tractors, and it was decided that Chamberlain Lake was not the place to start. In August, 1925, Lloyd Houghton was sent up to make a survey from the head of the old Tramway on Eagle Lake to the head of Umbazookskus, and we quote our notes of a conversation with him:

"The Lacroix Railroad was laid out as a tractor road. There was talk of putting the wood into Chamberlain Lake. Some talk also of driving the Allagash. Mr. Gilbert had talked about this with the B & A., but was not satisfied with their rates. Gilbert told Mr. Hilton to send someone up to lay out a tractor road from the Tramway to Umbazookskus Lake. It was simple to lay out a tractor road; all you had to do was follow the contour of the lake down. You had to be careful of grades. We took long tangents and sort of sharp turns. No cuts and fills like a railroad.

Lacroix and Gilbert apparently got together and decided to build a railroad. Nobody told me about it. After we had got in about 8-10 miles the first thing you know we heard chopping. Lacroix had 500 men in there and
they had the right-of-way cut for a railroad two days after we got through -- 18 miles. Vickery (Farle Vickery, Sr.) later frigged in some curves and they hauled the wood. It was the kinkiest railroad ever laid out in this country."

The Eagle Lake & West Branch was a single-track standard gauge road, financed, constructed and operated by Edouard Lacroix, we believe as a subsidiary to his Madawaska Company, his brother Charles being in charge of construction, with engineering assistance from Great Northern people. Its sole purpose was to transport wood for the Great Northern Paper Company, and therefore in one way or another it was eventually paid for with Great Northern money. It is said that it was originally named the "Umbazookskus & Eagle Lake", and this sounds vaguely familiar, but on a 1927 map it is the Eagle Lake & West Branch, and it was never owned by the Company. As we have noted, the right-of-way was cleared in the fall of 1925, and about 13,000 p.c. of wood cut on Ellis Brook was tractor-hauled over it and landed on the ice of Umbazookskus Lake that winter. The big job of the winter season of 1925-1926, however, was the hauling of materials and equipment from railhead on the Quebec Central at Lac Frontiere, over the road past Clayton Lake to the head of the old Tramway at Eagle Lake, which became the depot for the operation; a distance of about 50 miles. Judging entirely from the work done the following summer, it would be our guess that not everything was brought in that winter. However, the rails, fish-plates, spikes, switches and tools; that is, all the material for the track system except the cedar ties, which were
made on the job, was delivered. It is possible that loading conveyor parts and drives were brought in, and almost surely at least some of the trucks for the cars that would be needed to haul ballast. Mind you, we have no such information; we are just trying to put ourselves in Ed. Lacroix's place, and we doubt that we would have hauled everything in this one winter.

The route of the F.L. & W.B. ran from the head of the old Tramway on the westerly shore of Eagle Lake in the southeast corner of T.8 R.13 southwesterly past the head of Chamberlain Lake, across Allagash Stream, down close to the west shore of Chamberlain, swinging westward about a mile above Ellis Brook to cross that stream perhaps a mile and a half up; looping southeast and then southwest in the Southeast corner of T.7 R.13, turning south at the north line of T.6 R.13 and running about two miles in that direction to the most northerly point of Umbazookskus Lake, a total distance of somewhere between 11 and 14 miles. Grading and preparation of the roadbed on the right-of-way cleared the year before was started by the Madawaska Company in the spring of 1926 from three camps, one at the Tramway, where a depot had been built and a sawmill erected; one at Ellis Brook and one at Umbazookskus. It was necessary to make a cut about 12 feet deep and 1500 feet long near the Tramway, and there was a steam shovel on this job, but is our impression that much of the grading and ditching was pick and shovel labor. Allagash Stream was crossed on a wooden trestle 1800 feet long, designed by Max Hilton, five cribwork piers 20 feet apart being built in the stream to a height of ten feet above water, the rest of the structure supported on bents. A
bridge was also built over Ellis Brook, but this was no great problem, and by November the roadbed had been completed down to the bog at the head of Umbazookskus, and there they seem to have run into difficulty.

The Chesuncook & Chamberlain, also a single-track standard gauge line, about five miles long, connecting with the E.L. & W.B. at the head of Umbazookskus, ran southerly along the east shore of that lake to the upper end of the Meadows -- that part of Umbazookskus Stream flowed by the Ripogenus Dam. It was built, owned and operated by the Great Northern Paper Company, with Farle Vickery as engineer. The original intent of it seems to have been to provide a means of getting the wood from Lacroix' terminal to Chesuncook in case it should be difficult to get the large volume of wood through the Umbazookskus Dam and the thoroughfare below it, but a projected unloading pier at the Meadows was never built, and the railroad was never used for anything but the transportation of supplies for Ed. Lacroix and for Company operations around Umbazookskus.

The work of clearing the right-of-way was started in January, 1926, and was finished about April 1st. At this point a Mr. Macgregor -- the account does not give his first name -- took charge. Levelling of the roadbed was started at the south end, and would seem to have been finished around the first of July. Except for the hewing of cedar ties, the building of the C. & C. seems to have been quite a different kind of job than that being done on the E.L. & W.B. There were five camps, and other than the tie-cutting crew, most of the labor was hired from Boston agencies.
Railhead for material and equipment for this job was at Greenville, everything being tractor-hauled over the road from there to the Chesuncook Dam, and towed on scows to the unloading wharf at the south terminal at the Meadows. A 3/4 yard Bucyrus-Frie diesel shovel arrived early in July to load ballast; twelve flat cars, perhaps stripped pulpwood cars, were brought over from the Seboomook Lake & St. John to haul it, and the "Casey Jones", a specially built truck on flanged wheels, with a little trailing flat-car, must have come in about the same time. Macgregor began to lay track on July 1st; a new 18-ton Plymouth gasoline switching engine arrived on July 26th, having been brought up from Greenville to Chesuncook Dam on a special eight-wheeled flat-bed trailer, and with the Casey Jones hauling steel and the Plymouth ballast, which was unloaded from the flat cars by a sort of plow pulled along them by a cable from the uncoupled locomotive, the five miles of the C. & C. were completed by November. Two more Plymouth engines were brought in before construction was finished, but we have no dates. It would appear that Fd. Lacroix was supposed to bring his line down to connect with the C. & C., but he was working in a bog, the fall rains set in, and the Great Northern crew worked on the road-bed with its equipment until it had joined up with the Madawaska Company people.

If we are right in assuming that everything required was not brought in from Lac Frontiere in the winter of 1925-1926, whatever remained, including an 80-ton steam locomotive, was hauled in the 1926-1927 season. This engine was second-hand, bought in the United States, and was about 30 years old. We have a description of it, and of the second engine brought in later, but there does not
seem to be much point in going into this detail. We will just say that it was a standard 4-6-0 freight engine (four bogey wheels under the front of the boiler, six drivers and none under the cab). It was coal-fired, but was immediately converted to burn oil as a fire prevention measure. Laying of rails started in January, 1926, the crew working ahead of some kind of tractor that had been fitted with wheels to haul steel from the Tramway, and a little ballasting was done during the winter. Also starting in January, the Madawaska Company began to build the cribwork unloading pier at the Umbazookskus terminal, curving some 600 feet out into the lake. The rails on this were only a few feet above the water, and the shoreward one was 6 inches higher than the one on the lake side. This and the switching tracks around it were completed about June 1st.

In the meantime, two diesel engine driven conveyors, each about 250 feet long, with the necessary trackage, were built to take wood from Eagle Lake; a third, it is said, was added later. Two parallel loading tracks were laid along the shore. The loading conveyors, unlike the usual Great Northern style, were just uptakes at right angles to the tracks, along which cars were pulled by one of the Plymouth locomotives leased to the Madawaska Company, an extension of the conveyors over the first row of cars dumping into the second, and the wood was loose loaded. The car bodies were built, from lumber sawed at the site, in the spring and summer of 1927 and the cars were assembled; ballasting was finished, and the first load of pulpwood, from the only record we have, was hauled on August 1, 1927.

While all this was going on, Ed. Lacroix had been cutting wood. In the 1924-1925 season, about 7,500 cords had been cut and left on
In 1925-1926 another 25,000 cords were cut on the same town. For some reason, about 14,000 cords of this was hauled to 3d and 4th Musquacook Lakes, the remainder, plus the 7,500 cords of 1924-1925 wood, was landed on Churchill Lake. In the 1926-1927 season, 65,000 cords were cut, mostly on T.10 R.13. About half of this was hauled to Churchill, the rest was landed on Thoroughfare Brook and driven into Churchill, so that in the spring of 1927 some 84,000 cords, peeled measurement (100,000 rough cords) were ready to move up to the conveyors: up, because this was St. John River water, and had to be driven the wrong way; and it is said that all of this had been delivered into Umbazookskus by some time in November. The wood in Musquacook was of course not available. Since none of this cut could be put into the West Branch until the railroad was finished, Ed. Lacroix had also continued his operations on the North and South Branches, and in the 1926-1927 season he had cut another 78,000 cords there. We might say that in 1927-1928 he was still cutting in that area, producing about 80,000 cords, but after that season his operations were all in connection with the railroad. At the same time, he was of course logging along the Allagash for the Keegan mill.

We said somewhere back in our story that the Heron Lake dam was out some time before 1925. As we noted earlier, the water of Churchill and Eagle Lakes went down the Allagash, and we also noted that this dam was rebuilt at this time to raise Churchill Lake and flow the thoroughfare between it and Eagle Lake so that wood from the former could be driven upstream into the latter and so to the loading conveyors. We have no information as to how this driving was done. Presumably the wood was swept from Churchill
into Eagle, and towed up that lake, and there must have been a boomed holding ground at the Tramway, but we have found no description of it. The only information we have is that in 1927 at least, wood was being crowded up to the loading conveyors by a sweep boom operated from an old-fashioned headworks on the shore, powered by a single horse walking the capstan around. When the wood was delivered into Umbazookskus, it was in West Branch water; was sluiced through the dam, and was boomed out at the Meadows for towing down Chesuncook Lake.

The pulpwood cars built by Ed. Lacroix, and the method of unloading them, anticipated the car dumper developed at Millinocket which we have described elsewhere. They were of the old wooden rack or basket type, open-topped, one side of the floor 12 inches higher than the other. The side of the rack toward which the floor was pitched was hinged at the top and fastened at the bottom by a simple hasp and pin. To unload, the string of cars was run out onto the slanted pier, which had the effect of raising the pitch of the floor to 18 inches; men clambered out along them, knocking out the pins; and most of the load slid out under the swinging side. What was left was pried out with pickpoles. There was no walkway, and a man on this job had to be very sure-footed. It was not a particularly safe operation, but it was fast—the unloading of a train could be done in about an hour.

A second locomotive, a 60-ton 2-8-0, a rather unusual type, was brought in, probably in the winter of 1927-1928. This was also second-hand, built in 1901, and was converted to oil, like the first. The Eagle Lake & West Branch of course did not operate
during the winter. As best we can make out, three 12-car trains were used, one engine coming down with a load, the other immediately going back light over the single track -- there was no shunt track on the main line -- picking up the third train which had been loaded at the conveyors, and returning. The second Great Northern Plymouth assisted in switching at the Umbazookskus terminal; operated a drag to clear bark away from the unloading pier, and, we believe, some sort of sweep to start the unloaded wood away from it. The third, also operated by the Company, hauled supplies over the C. & C. from the wharf at the Meadows, following an empty train up the F.L. & W.B. to the Tramway, and a full train back. As Lloyd Houghton said, this was a "kinky" railroad, and it was not possible to operate at any great speed. We have been told that there were many derailments, the engines lifting the cars right off the tracks on the sharper curves. Even the Casey Jones jumped the rails if the driver got a little careless about his speed.

Gasoline for the Company's Plymouths we believe was brought up by tank tractor from Greenville to Chesuncook Dam and was there transferred to drums, which were towed up to the south terminal of the C. & C. We do not know just how the fuel oil for the Madawaska Company's engines was delivered, but as Ed. Lacroix is said to have had 20,000 gallons of storage at the Tramway, most of it was probably toted in from Lac Frontiere in drums during the winters. However, it may have been brought up from Greenville as well.

Since we have mentioned toting, almost everyone who has written about the Eagle Lake & West Branch seems to equate the
transportation of the equipment for the railroad from the Quebec border to the Tramway with the legendary exploits of the mythical Paul Bunyan. The writer does not know all the details, but he just does not see that it was all that much of a sweat, given the feats of toting performed by the lumbermen of earlier years. Ed. Lacroix' road was not exactly a boulevard, but it was far better than a tote road, and was improved before the job started. Almost everything could be broken down to manageable size and weight, and most of it could be hauled on ordinary tractor sleds. Traction was provided by a number of steam and gasoline Lombard log haulers which could move very large loads over a good iced road. Moving the locomotives of course presented the greatest problem, and we believe that a special sled was built for these, but we understand that they were partly disassembled, and while more ungainly, neither weighed as much as a tractor train of 15 or 18 sleds of pulp. All of which is not to belittle what was certainly a great accomplishment, but there was nothing superhuman about it. Incidentally, in 1931, Ed. Lacroix hauled a steel bridge of one-way width from St. Georges Beauce, where it was being replaced by a new one, to the St. John River in T.12 R.16, where he erected it on his road. This was of no great importance to his work for Great Northern, which was nearing an end at that time, but was used in connection with his own operations. The "Nine-Mile Bridge", as it was called, was washed out in 1970.

The Madawaska Company's Churchill operations for Great Northern ran for nine seasons, counting the wood cut before the construction of the railroad. We list the cuts as nearly as we can determine the figures:

Spruce Wood - 231
This includes the wood cut on Ellis Brook and hauled over the right-of-way in 1925-1926. It also includes the wood landed in Musquacook, which was taken out of the water in the 1927-1928 season and was hauled to Churchill Lake. This wood was six or seven years old when it got to the mill.

<table>
<thead>
<tr>
<th>Year</th>
<th>Cords</th>
</tr>
</thead>
<tbody>
<tr>
<td>1924-1925)</td>
<td></td>
</tr>
<tr>
<td>1925-1926)</td>
<td>121,000</td>
</tr>
<tr>
<td>1926-1927)</td>
<td></td>
</tr>
<tr>
<td>1927-1928</td>
<td>100,000</td>
</tr>
<tr>
<td>1928-1929</td>
<td>127,000</td>
</tr>
<tr>
<td>1929-1930</td>
<td>90,000</td>
</tr>
<tr>
<td>1930-1931</td>
<td>90,000</td>
</tr>
<tr>
<td>1931-1932</td>
<td>36,000</td>
</tr>
<tr>
<td>1932-1933</td>
<td>36,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>590,000</td>
</tr>
</tbody>
</table>

Nearly all of this was cut from stumpage purchased by the Madawaska Company or by Great Northern on T.11, R.10, T.11,R.11, T.11,R.12, T.10,R.13, T.9,R.11, T.9,R.12, T.9,R.13, T.9,R.14, T.8,R.11 and T.8 R.12, and was horse or tractor hauled, some long distances, and landed in Churchill Lake or on Thoroughfare Brook, Heron Lake, Spider Lake, Pleasant Lake, Cliff Lake and Snare Brook to be driven into Churchill or Eagle Lakes. It was not all delivered into Umbazookskus in the season cut, as we know that in the last year of operation the railroad not only hauled the 36,000 cords that had been cut in 1932-1933, but 56,000 cords more that had been held back, but with the exception of the first 13,000 cords, it all came over the Eagle Lake & West Branch.

Through the 1928-1929 season, we believe that the Madawaska Company was financed by the Bank of Montreal, and the Company made payment when the drive was in Churchill Lake. This meant borrowing large amounts of money, as we have noted in another place, and in 1929, after Fred Gilbert's resignation, William A.
Whitcomb and William Hilton renegotiated the contract, which had one more season to go, an arrangement being made for regular monthly payments, starting September 1, 1929. The year remaining on the old contract was cancelled, and a new contract was made for 75,000 rough cords each year for 1930-1931 and 1931-1932. This was when the fracas with Blin Page, upon which we reported earlier occurred, the Company having bought from him the stumpage on the North 1/2 of T.9 R.11 and T.9 R.12, which it did not want to cut. This wound up with Great Northern owning this land, as we have noted. It also now owns T.9 R.14, on which Lacroix had been cutting, but we do not believe that this was bought until very much later. At any rate, Ed. Lacroix overcut in the first year of his new contract, with the result that he was set back to 50,000 cords in 1931-1932, as William A. Whitcomb was determined to reduce inventory. By this time, things were getting rough all over, and the Company's total wood production in 1932-1933 was not much more than Ed. Lacroix alone had cut two years before. There was no place for his huge operations in the depression situation, but he was given a last contract, another 50,000 cords, we believe, for 1932-1933, probably to allow him to work off his stumpage permits.

The last trainload of wood was hauled over the Eagle Lake & West Branch in the summer of 1933, and the road was simply abandoned, only the oil storage tanks and some minor equipment being removed. The engines were run into the shed at the Tramway, and, stripped for souveniers and rusting away, are still there. The rolling stock was left on the tracks. The Company's "Casey Jones", we believe, was left for the use of fire wardens and other personnel, and could be run up as far as Allagash Stream, the trestle there
being washed out at some unknown time. One of the flat cars from the C. & C., poled along like a canoe, was used for some time to transport supplies to a private camp on Chamberlain Lake, but all use of the E.L. & W.B. ceased many years ago.

The Great Northern Paper Company's Plymouth locomotives were sold, one account saying that one of them was bought back again later for use at North Twin, but we are not sure of this. The rails of the Chesuncook & Chamberlain remained in place until 1943, when the Company took them up and sold them to the Government during one of the wartime scrap drives; and according to a letter from Mrs. Earle Vickery, published in the Bangor Daily News of April 29, 1969, they were shipped to the Far East and used on the Burma-China railroad. At that time the Government tried unsuccessfully to get the rails from the F.L. & W.B. too, but a memo from Sheldon Wardwell to Tom Allen, dated September, 25, 1943, says:

"Mr. Whitcomb told me about the plans for scrapping the railroad.

Lacroix won't sell and the Government is considering condemnation; wants the Great Northern to operate the job, and the man says that he will get Canadian labor to do it.

....I hope Mr. Hilton has been consulted on this, and likely he has been, but in any event it's a little difficult to turn down the Government, even when they are attempting something that is foolish.
The primary question is to be sure the Government has the right to condemn and fulfills the formalities. Lacroix would sue the Great Northern rather than the Government" (that would have been in case the Company agreed to take on the salvage job) "and undoubtedly the Government would leave us holding the bag...."

The Government finally decided that it was not worth while to try to get the rails, the engines and other metal out of this remote place, and there they stayed.

As we have noted, the Madawaska Company was sold to the K.C. Irving interests, who thus acquired the property at the Tramway and whatever was left there, but we have no knowledge of the status of the old right-of-way. This is our story of Ed. Lacroix' Eagle Lake & West Branch and Great Northern's Chesuncook & Chamberlain. It is far too long, and perhaps no better than the others that have been written, but in its context, it may help to remove some of the mystery that seems to surround them.

When Ed. Lacroix went out of the picture is when the second round of large Company operations began. In 1933-1934 there were Company operations in the Cooper Brook area and around Hurd Pond, Abol and Quakish Lake, that is, close to Millinocket. Only in Aroostook were there contract cuts, and these were small. In 1934-1935, the big St. John operations on T.5,R.17, T.6,R.16, and T.6 R.17, with a tractor haul to the North Branch, began, these continuing for a number of years, and Company jobs, all substantial, were opened on Dole and Hammond and around Pittston; on Gulliver Brook, on Burbank, on Ragged Lake; around Ripogenus, Soursnahunk,
Bottle Pond and Grant Brook, practically all second cuts in these places; and on The Forks and Fast Moxie on the Kennebec, and again the only contracts of any consequence were in Aroostook. This is as far as readily available information goes, and is perhaps as far as we need to go, in view of our earlier comment on the Company vs. contractor situation, so let us turn to other developments.

Probably one reason why Fred Gilbert had considered driving the Churchill wood down the East Branch to Grindstone was that he had already begun to cut on those waters, and in 1925 had an operation going to transfer the wood from the East Branch, which joined the West Branch a couple of miles below the Fast Millinocket mill, to Dolby Pond, a couple of miles above it. It will be remembered that an extension of the railroad to Medway for just this eventuality had been included in the original specifications for the East Millinocket mill, but that apparently only the roadbed had been constructed. The main line of the Bangor & Aroostook through Millinocket to Houlton also crossed the East Branch at Grindstone, but at this time Fred Gilbert was at odds with the B&A; again could not agree on a freight rate, and did not choose to take advantage of its possibilities. His decision was to take the wood out of the water from the drive, put it into a pile, and haul it to the West Branch with tractors during the winter months. It did not matter that no way could wood handled in this manner get to the mill for at least two years after it was cut. It was not one of his better ideas.

The road from Medway to Stacyville ran up the east side of the East Branch, and at Grindstone, on that side, where the
railroad crosses the river and the road, was the Grindstone station, a few houses belonging to railroad men, and Atco Siding; a loading platform, a storehouse, some small buildings and a few old piers in the river; purchased from the American Thread Company. On the west side of the river, the bank at this point was maybe thirty feet high. Early in April, 1924, a Company crew under R.H. Clough moved into the Atco buildings and built a chain uptake conveyor, driven by a 75 h.p. crude oil engine, up over this bank to a stacker on land cleared on the flat above; patched up the old piers, strung some boom, and began to pile the wood coming down from the previous winter's upriver contract operations.

From two differing accounts and a bunch of undated photographs, it is very difficult to determine just what was done when, and we have to rationalize to some extent. By fall, it appears, 24,000 cords of wood had been piled. In the meantime, more land was cleared and graded, and a depot, which was known as Grindstone, although that place was really on the other side of the river; an office, a blacksmith shop, an equipment shed and a couple of camps for supervision, mostly of stockaded logs, was built near the pile. On the other side of the river, at Atco Siding, a cook-bunkhouse and a fireproof tractor garage; "fireproof" in that it was covered with metal shingles; were put up. A road about six miles long was built from the pile down the east side of the Schoodic Flowage to the highway between Millinocket and Fast Millinocket, coming out between the Schoodic bridge and Partridge Brook, and the floating and standing dri-ki was cleared out of the east side of the Schoodic Flowage, making a clear channel for driving out into Dolby Pond.
As nearly as we can determine, no wood was hauled from the pile during the winter of 1924-1925, but Ed. Edman had taken charge in the fall, not only of the depot, but of a 20,000-cord operation on what was called Soldier Town, we believe T.2, R.7. A tractor road was built from the depot up into this town, west of the East Branch, and this wood was tractor hauled through the depot and out to the Schoodic Flowage, a distance of about 12 miles. This was one of the warm winters we spoke of earlier, and it is said that snow had to be hauled by teams and spread on the road to complete the hauling. Nine new piers were built in the holding ground that winter. Electric power from one of the utility companies was brought into the depot, lighting was installed, and the engine that had driven the uptake conveyor was rigged up with an auxiliary generator, as outages were frequent. By some time in 1925, the depot included a second cook-bunkhouse, two big equipment sheds, a log storehouse, a dynamite house, a gasoline storage tank and pump house, four portable camps and a log cook-shack for University of Maine forestry students, and a small general store. A water system had been put in, and an extension had been added to the garage building, which had central heat, to provide a washroom, with toilets, lavatories, showers and a laundry with set-tubs and clothes lines, so that the men might keep themselves and their clothing clean, although hot water was available only in the evening. This was one of the first such installations in a lumber-camp type operation in Maine. An elevated loading conveyor, about 500 feet long, had been built straight out from the foot of the pile, with two feeder conveyors, supplied by portables, angling in to it. All were driven by electric motors. Out the road, somewhere near
the upper end of the Schoodic Flowage, about four miles from
the East Branch, an unloading conveyor and a smaller stacker to put
wood out onto the ice of the pond, with living accomodations for
the unloading crew, had been built. There is no information as
to whether Ed Enman's 1924-1925 cut was driven and added to the
pile, or whether it was hauled to Schoodic, but in any event, haul-
ing from the Grindstone stacker with 10-ton Holt and Lombard gaso-
line tractors and sleds was started just before Christmas, 1925,
the wood being unloaded either at the Schoodic stacker or out on
the ice of the pond, which was built up by sprinkling so that it
would bear the weight of the hauling equipment. A special 5,000
gallon water cart, with a pump by which it could be filled from
water holes along the way, was used to keep the road in shape, and
the largest load ever hauled was eleven sleds.

As best we can make out, something like 20,000 cords were
put out in the Grindstone pile in the summer of 1926, and an
effort was made to get hauling started before winter. A number
of huge trailer wagons, with steel underbodies and wheels 40 inches
in diameter, with solid rubber tires, 14 inches on the tread, were
specially built in Canastota, N.Y. Rack bodies, 32 feet long and
8 feet wide, holding six or seven cords loaded loose, were built
on these at Dolby. One source of information says that they had
dump sides, like the Lacroix railroad cars, but we are not sure of
this. A tractor could haul only two of them, as they did not track
well, and they were little used, most of the wood transported
during the summer and fall months being hauled by trucks, a second
stacker being built at Schoodic.
In this same summer, it was decided to build a bridge across the Fast Branch from the Grindstone Depot to the Atco Siding side, the idea being to haul wood cut up around Davidson over a tractor road from that area directly to Dolby Pond. Since this still had to be done during the winter months, a temporary one was suggested, but that was not Fred Gilbert's style, and he was the boss, so a huge structure, 660 feet long, was built diagonally across the river on five immense crib piers. The approach on the west bank required a cut of 490 feet, a fill of 250 feet and a crib abutment 300 feet long; that on the east side a 40 foot abutment. The plank roadway was supported on 30 steel girders, 48 inches deep and all over 80 feet long. This job was not completed, we believe, until late in 1927. Little if any wood was ever hauled over this monstrosity, but supplies were brought over it from Atco Siding, and it provided an easier way for men to cross the river than on the ice, a boom or the railroad bridge. While this job was under way, another 20,000 cords or so were driven in 1927, put into the pile, and with what may have been left there was hauled to Schoodic by tractors in the winter of 1927-1928, partly by contract.

From this point on, we have no record at all, and have to play it by ear. Very little wood was cut on the Fast Branch in the 1927-1928 season; what was cut could easily have been hauled to Schoodic Stream or Millinocket Lake, and our best guess is that the Grindstone operation was shut down in 1928. At any rate, the conveyors at that place and at Schoodic were written off, along with the Seboomook Lake & St. John Railroad and a lot of miscellaneous unused equipment, in February, 1929, on William A. Whitcomb's orders. The big bridge was dismantled, some time a little later, and as we have noted, a
number of smaller ones were built from it in other places. However, there was still wood to come down, and while no date can be found, and we emphasize that we are guessing, it was probably in 1929 that a holding ground and loading conveyor were built on the west bank of the East Branch at Medway, just above the old highway bridge at the mouth of the river, the piers of which can still be seen, and for several years 10,000 to 20,000 cords of wood were driven to Medway and trucked to Dolby Pond, or to the East Millinocket mill. This operation was shut down at the bottom of the depression, but was again used for a few years after 1933. At some time after that year, a stacker was built at the water's edge right at the entrance to the Rice Farm to take the excess wood from this plant. In 1940, when the Mattaceunk flowage was created and the new highway bridge at Medway was built, Farle Vickery laid out a spur track from the main line of the Bangor & Aroostook at the old Grindstone site, and supervised the building of a new loading conveyor, so that wood from the Fast Branch could go to either mill, which is what should have been done in the first place. This conveyor was in use for some years, but we have no termination date.

There were a few other somewhat similar projects, in terms of bigness, notably the Cooper Brook log hauler road, with its 1250 foot long, 25-foot high trestle, built to facilitate hauling from the B Pond country to Jo Mary in 1927 and then abandoned, but these three -- the two railroads and the Grindstone conveyor -- were the more dramatic activities in this period. One was a failure, one was marginal and one was a success, but they were all interesting. The depression of the 1930's ended developments of this kind, and by the time it was over, the bulldozer and the trucks had made them unnecessary.
There are many who have written at length and with authority about the Maine woodsman, and there is a lot of information about him when he was an institution, before the turn of the century, but we find the Great Northern woods worker an elusive character, whom we cannot discuss with any assurance. Some facts have been gathered from people who have had long association with woods work, but dates and numbers are almost impossible to come by, and we regretfully have to resort once more to making the best we can out of what is an almost impossible subject.

To begin with, in the whole area of northern Maine lying west of the Bangor & Aroostook Railroad from Brownville Junction to Fort Kent and north of the Canadian Pacific to the Quebec border, there was and is almost no population, and there was and is little more west of the Kennebec between the Canadian Pacific and Carrabassett Stream, and from the beginning of cutting in these areas, labor has had to be found elsewhere. Along the railroads in Aroostook and southern Piscataquis County and in the country east of the Kennebec it was different. There were many settled communities, which meant available labor. For a long time, it was not necessary to look very hard for it in these places, and men came from them to the big operations to the west and north.

Next, there were at one time or another, in some periods all at the same time, five different agencies harvesting wood for Great Northern — the Company itself; the domestic contractors like Charlie Glaster, the Burrs and the Ranneys; the Quebec French-Canadian contractors like Groleau, Aucoin and the Paquets (Edouard Lacroix was another, but he was not typical) the small local con-
tractors like Powers, Morin and the McLaughlins; and the purchased wood producers. For discussion of labor, however, we can boil these down to two. The small contractors and the purchased wood people were mostly operating near settled places, from which they drew their men. The Company and its domestic contractors got their labor from the same sources. This brings us down to the Company, with its domestic contractors and jobbers, in one group, and the French-Canadian contractors in another.

Each of these groups, in a general way, had its own following of overhead types; supervision, clerks and timekeepers, scalers and cooks, carpenters, blacksmiths, saw filers and mechanics, mostly domestic in the case of the Company and the American contractors, all French-Canadian in the case of the contractors from Canada. In the later years, tractor drivers, truck drivers and heavy equipment operators also followed one or the other. The people with whom we have a problem are the choppers, cord cutters, swampers, teamsters, feeders, loaders, river drivers -- the rank and file of woods labor. We will not try to separate these occupations. With the exception of some of the teamsters and feeders who were hired for the job, the others were generally taken on as woods labor. Swampers and loaders were mostly men who did not make good cord cutters or teamsters. River drivers on the small streams were usually men from the regular crews, and for the booming and sluicing they were probably men who had been in the camps and had gone out after cutting had been completed. Towboat crews and motor boat operators were likely regular men who did other work for the Company during the winter. On Section 3, below Ripogenus, at least after 1930, it became customary to use a considerable number of Restigouche Indians from New
Brunswick, for some reason. At one time or another there were in the woods the old professional woodsmen, the survivors of the Bangor Tigers of the lumbering days; English-speaking State of Maine men; French-speaking or bilingual Maine citizens of French extraction; Swedes, Finns, and "Polacks"; English-speaking Canadians from Prince Edward Island and New Brunswick; domestic labor from the cities; Indians from both sides of the border and French-Canadians from Quebec and New Brunswick, and our trouble is that we come up almost empty of dates, and are really at a loss as to how to relate these groups to time, although we will do what we can. There is not much point in trying to establish the total number of men in the woods at any time, either, as this varied with the season, the size of the cut, the amount of purchased wood, the number of contractors, and the changes in operating conditions and procedures over the years. To illustrate, while there was a gradually increasing cut of wood, the work week dropped from 84 hours to 40, while the length of the cutting season has increased from four months to twelve, except for "mud time" in the spring. The shift from logs to short wood increased the amount of labor in the woods, but reduced the number of drivers; the change in the nature of the bucksaw blade increased production and reduced the number of men needed somewhat; the tractors could haul more wood than horses with fewer men, and the trucks cut down on the number of toters and storehouse men, but required more labor than tractors for hauling. One source says that between Company and contractor operations there were as many as 7,000 at one time. A study of alien labor made in 1970 indicates that Great Northern itself had about 3,000 men on woods work from 1901 to 1950; in 1960 only 622, and as this is written perhaps only half that num-
ber but this does not include the contractors. We offer the figures only because they are the only ones available. Reaching ahead a little, after the bulldozed road and the truck, the next really important development until recent years was the chain saw, which drastically reduced the amount of woods labor, and while it may be a little out of place, we should say something about this tool here, as it bears on the amount of labor.

In another place, we wrote about the several types of mechanical saw that came on the market in the 1930's. The most promising of these were the chain saws, at that time cumbersome two-man jobs, with handles at each end; some five feet or more long, weighing nearly a hundred pounds. While they were continually improved, there was little interest in them in Maine, but the larger models did gain acceptance on the West Coast. We also said that in the late 1940's the chain saw was coming into favor. What we had in mind was the Precision one-man bow saw, different from other types, which was being used to some extent in Aroostook, and the more conventional Disston and Maul saws. These were still intended for use by two men, but they were smaller and lighter, and some were in use here and there, mostly on construction work. By this time they had become sufficiently reliable so that the Company determined to make a real effort to get them into the woods, and after investigation of the different makes, several hundred Maul saws were purchased and issued, mostly, as we recall, in Aroostook. This effort was fruitless, as whenever a chain broke or some other part failed, the men simply threw them away, and those that could be found were eventually recalled. About this time, however, someone came up with what was then called the "beavertail" saw, a one-man tool, the
grandfather of the present generation of chain saws. These began to be used in a small way, although they made a kerf a quarter of an inch wide. Rapid improvement was made in them, but even at the time of the Spencer Mountain fire in 1952, the men on that job would not use them. However, shortly after then they took off; McCullochs, Homelites, Pioneers and what not began to sputter all over the Maine woods, and a woodsman now can do about anything with a chain saw that in the old days could be done with an axe, even to hewing timbers, although we have never heard of anybody trying to shave with one.

The chain saw was and is a dangerous weapon. The older ones kicked back badly, had other problems, and caused a lot of very serious injuries. The Wright saw, a much safer vibration-blade tool, was used to some extent in the 1950's, but was not a success. The chain saws now in use are loaded with safety features, but no one has yet developed a guard for the chain, and people still get hurt. However, a man can put up between three to five cords of four-foot wood in a day, which is twice as much as he could produce with a bucksaw, and the number of cord cutters needed has gone down accordingly.

From the very beginning, some part of the wood harvested by the Great Northern Paper Company has been cut by Canadian labor; about 27 percent of the total cut up to 1942, the end of the period on which we have any figures, and we have no reason to believe that the overall proportion has been any greater since that time. However, on the North and South Branches almost all the cutting has been done by woodsmen from Quebec. Prior to 1907, the border
between Canada and the United States was wide open, and people came and went at will. As we have said, there was no labor at all on the upper reaches of the West Branch, but there was plenty just across the line in Canada, and in the first four years of the long log pulpwood period approximately one-half of all the wood produced by the early domestic contractors was cut by French-Canadian labor, recruited in the Eastern Townships. This was what was called "French" labor, and we will use this term. At this time there were a considerable number of the old Maine woodsmen, along with Canadians from New Brunswick and Prince Edward Island to whom working in the Maine woods in the winter was a way of life, but while they might be employed in the same operations as the French labor, they lived in different camps, the separation being by language rather than by the origin of the woodsman. There were still several hundred of these men around Bangor as late as the middle 1930's, who could always be counted on. Fred Gilbert looked after his old hands -- and young ones too -- pretty well. There are many letters like the following:

"October 30th, 1912

'Mr. Everett Amey
Seboomook, Maine.

Dear Sir:

We are sending Mr. Ben Deroch, one of our old dam hands to Seboomook and have told him that either on Seboomook or Canada Falls he would get a job at the rate of pay you usually pay men of his ability. He is a good broad-axe man, capable of doing any part of dam work....In case that you are not ready for him to go on the work....give him something to do until we can place him elsewhere.

Yours truly,
Great Northern Paper Company
By: F.A. Gilbert"

Spruce Wood - 247
"June 11, 1912

P.E. Whalen
Bangor Office

Sir:

There is a young man by the name of William Murphy on Old Town whose father has died, and his mother is his sole support, aside from what he does for himself.... If you have a place as timekeeper for him anywhere I would recommend putting him on...."

Yours truly,
Great Northern Paper Company
By: F.A. Gilbert.

It is quite probable that Quebec lumbermen had been jobbing on the Maine side of the border for a long time, and it was natural for them to take up with the new company, bringing their own men to the North and South Branches and as far east as Lobster Lake, starting in 1904. As we have noted, the French contractors worked in this area until 1911, when the first period of Company operations began, but the proportion of the cut made by French labor employed both by these contractors and by the Company on the West Branch declined until it was only about ten percent, although more than half the wood for the Madison mill continued to be cut by Quebec Canadians. After 1907, Canadians entering the United States were supposed to register. This regulation was poorly administered, but it seems to have had an effect, as the crews on the West Branch became largely Maine natives.

From 1911 up to the late years of World War I, the French contractors disappeared, although some of them may have been used as
jobbers, and very little French labor was hired. We do not know why this was, as there were no real barriers against it until 1917. Nevertheless, from the figures available to us, between the 1911-1912 and 1917-1918 seasons, only 159,000 cords out of a total of approximately 1,250,000 harvested was cut by French woodsmen. At this time, although the supply of Maine labor, most of which came from the farming communities to the south was dwindling, the young men beginning to move into the more industrialized areas of New England, there were still, as we noted earlier, quite a large number of native woodsmen, but the labor agencies began to supply the West Branch operations partly with more city people, mostly from the Boston area, although no matter where they came from they were "Boston men", and partly with immigrants from the so-called "new emigration" of 1880-1924, the largest mass movement of people in the history of the world, almost all from the countries of eastern Europe, from Sweden to Italy. Only a few Italians, as far as we know, ever worked in the woods, except on construction, but there were the Swedes, the Norwegians, the Finns and the "Polacks". Now, a Swede was a Swede, a Norwegian a Norwegian and a Finn a Finnander, but a Polack could be any other east European -- a Lithuanian, an Estonian, a Czech, a Pole, a Serb, or whatever. From a letter from Charlie Glaster, these men began to show up in "Boston" crews "three or four in a bunch of thirty in 1912 to 1915 and stayed on the job pretty good." Many more came starting in 1917 with the shift to short wood. Some of these people were just off the boat, a lot of them, however, must have been in this country before the war, and it is our understanding that some came back east from work in the steel mills of the middle west. Some settled in Maine,
the Finns, we know, located in the Thomaston-Wiscasset area, where they farmed in the summer. We do not know where the others went when they were not in the woods. Many had no families in this country, and it has been said that they mostly spent the off-season in cheap boarding-houses in the cities, but they came back in the fall, forty or fifty sometimes being found at a camp waiting for the operation to start. We have heard very little about the Swedes or the Norwegians. The Finns were all woodsmen, but while extremely clean and neat, building a sauna as soon as they arrived in camp and putting up piles of closely knotted wood that looked as though they had been built with a level and a straightedge, were said to be surly and unsociable. The Polack, on the other hand, regardless of his origin, according to a writer in the May, 1925 Northern, was probably as good a man as the Company ever had; big, strong, cheerful, friendly and clean -- he had to have a bath and a complete change of clothing every week -- and slow-moving, he cut wood with little waste motion, and could out-produce any other woodsman. He was also good on the small stream drives, where he could heave in landings and sack rear with the best, but on the main river drive he was of little use. No way could he walk a boom or move fast enough to prevent a jam. Not all of them stayed to become woodsmen, but those who did were good. The Scandinavians, Finns and Polacks -- we have no idea how many at one time, worked in Company operations, mostly on the West Branch, according to our information, from around Millinocket to up perhaps as far as Seboomook, in gradually increasing and then decreasing numbers, until some time about 1940.

The Boston men were, as nearly as we can find out, of the period from around 1912 to perhaps about 1930. There is no way to categorize them; they were just bodies, some native Americans,
some legal immigrants, and again, most of these were employed in the lower West Branch area. Again quoting Charlie Glaster: "When we received a crew of 20 or 30 men from Bangor or Boston, 15 percent of them would be fairly good, the other 85 percent wasn't experienced men, consequently we had a big turnover during the cutting season. Used a lot less men hauling, and picked out the good ones who stayed pretty well to get their fare."

This brings us to the Red Time Bill, or R.T.B. The people, native or foreign-born, hired by the labor agencies and shipped to the Maine woods were advanced or charged their railroad fare and other transportation cost; most had no winter work clothing, which they bought from the wangan -- the clerk got a 2 percent commission on wangan sales; and the value of the wangan for a large operation in those days could run to $10,000 -- and were immediately in debt to the Company. This debt was set up against their earnings from the records of the clerk, timekeeper and scaler. Some of these people stayed on, although they did not produce much, and earned only enough to pay this off, remaining through the hauling season to get their fare home. Others stayed only a short time and left owing the Company, which was the reason for the Red Time Bill, made out by the clerk. Lists of these were sent to the different operations each year, so that if one of these men turned up again, his bill could be collected. These lists got so long that they were eventually printed in booklet form for distribution. We have examined one of these books, revised and issued as of July 1, 1918. It contains nearly 11,000 names, from operations starting in 1911, beginning with "Aalto, Edward" and ending with "Zydecki, Stanisloy". There are in this list Finnish, Scandinavian, Lithuanian,
Polish, French, English, Irish, Scottish, Welsh, Indian and a few Italian names, some that only an expert could identify, like Joe Jux, Andrew Zeb and Charles Eoak, and some probable phonetic spellings of the same name; for example Borosank, Boroshuk, Bostuck, Boshook and Bosh. We list, as a matter of interest, the incidence of 20 or more of the same family name: 65 Andersons, 65 Browns, 35 Burkes, 40 Burns' s, 28 Caseys, 36 Clarks, 30 Collins' s, 26 Daleys, 42 Davis' s, 26 Doucettes, 21 Gallaghers, 20 Gardners, 23 Halls, 55 Hills, 115 Johnsons, 76 Kellys and Kelleys, 41 Kings, 20 Mahoneys, 66 Millers, 88 Murphys, 41 McCartys and McCarthy's, 137 McDonalds, 28 Nelsons, 53 O'Briens, 23 Perrys, 25 Russells, 48 Ryans, 244 Smiths, 91 Sullivans, 29 Taylors, 26 Thompsons, 22 Welch's and Welsh's, 66 Whites, 40 Williams' s, 45 Wilsons.

In the records of 1901 we find the wangan account of a man who was likely to end up with a red time bill. This man bought woolen underwear, ($3.00); a shirt ($2.00); a sweater($2.75); a pair of pants ($3.50); suspenders ($0.40); a pair of overalls ($1.00); socks ($0.60); a "frock", or outside jacket ($2.50); leggings ($1.25); mittens ($0.60) shoepacs -- high moccasins -- ($1.50); two pairs of shoes ($2.50 and $4.50); rubbers ($1.75) a bottle of liniment ($0.35); a jar of Vaseline ($0.15); a handkerchief ($0.15); a whetstone ($0.10); a corncob pipe ($0.10); tobacco ($0.14) matches ($0.15) and a jackknife ($0.75). All this came to $33.74, which was nearly seven weeks' pay for this guy. At the other end of the scale was the man in the same camp who bought a pair of suspenders, a pair of mittens, a box of cartridges, stationery and postage stamps for five letters, and sent $60.00 home to his wife. It took all kinds.
Amounts in the 1918 R.T.D. book ran from five cents to $22.00, mostly only a few dollars—$3.00 to $12.00, but $12.00 in those days was a week's pay. These lists were maintained until about 1945, when they were done away with, engagement slips, as men were hired, being checked against the R.T.B. file which was kept in the payroll office for seven years back. Red time bills are still being issued but they are now few in number, and are largely due to clerical errors. The old reasons for them are gone. As of now, there are no green recruits from the cities; 99 percent of the men arrive at camp in their own or friends' cars, with their own work clothes; nobody but a watchman stays in camp over a week-end; and the wangan consists of cigarettes and a few other small items, seldom more than a few hundred dollars' worth.

On February, 5, 1917, the so-called head tax on Canadian labor was imposed. This was not particularly restrictive, as by one payment of $8.00, a man could work in the States as long as he pleased and go back and forth at will, and in 1918 the French contractors were back on the North and South Branches with French labor. This was toward the end of the first period of Company operations, and it also was recruiting its labor in Quebec for its own operations in that area, around Caucomgomoc and even down as far as Rainbow Lake. By 1922-1923, nearly half of Great Northern's entire supply of pulpwood was again being cut by French woodsmen. Then came the Edouard Lacroix interval, and from 1923-1924 to 1927-1928 a little over half the cut was made by his men and that of a few French contractors. During this time an average of about 2,000 French-Canadian woodsmen were at work in Company operations or on contractors' jobs, the largest number ever employed. During
this same period, however, there were practically none on the Kennebec. By 1929-1930, the last year on which we have separated figures, the proportion of wood harvested by French labor, almost all in Company camps on the North and South Branches, was down to less than 30 percent -- about the average figure noted earlier.

The immigration visa system, still in force, was put into effect on July 1, 1924. However, it was a rather complicated process at that time to get a visa, it was easy to get across the border without one, and French and other Canadian woodsmen did not make much effort to obtain them; as late as 1955 only about 10 percent of the Canadian woodsmen on the North Branch were visa men or "paper" (naturalized) citizens. This brought on a crackdown by the U.S. Immigration people, who began to send their men into the camps, usually at night, in a search for illegal aliens, meaning Canadians, of course. We have no knowledge of how extensive the early organization may have been, but with a few years, a patrol system, all the way from Jackman to Fort Kent had been established, with camps or depots at Pittston, at the Nine-Mile Bridge, at the junction of the Big Black and St. John Rivers, at Clayton Lake, and we believe some points further north. Officers travelled in pairs or four at a time, depending upon the scope of their mission; by car, on foot, on snowshoes in winter, and by canoe and boat, to reach their objectives.

In the early years of the great depression, the operations were moved in close to Millinocket; there were few men in the woods, almost none of them Canadians. Less wood was being used, and we have noted the heavy cuts of the late 1920's, which had built up a large inventory to be worked off. In the fall of 1934, however,
the Company had opened the large operations on the upper West Branch, which we mentioned earlier, with fourteen or fifteen camps, which would have meant 1,000 to 1,200 men, and while there was a fair amount of domestic labor available, there were French woodsmen in some of these camps, probably because wood had to be cut cheaply, and these men were experienced. Most of them were visas or paper citizens, but there were always some who slipped into the country without papers. Mostly, when the law showed up, any of these people who could get out the windows took to the woods in their underwear. They were usually rounded up, but some time about the middle of October, 1935, a group of officers who took some men out of one of the contractors' camps on Hurricane met with violent resistance from some of the crew, armed with axes. The direct result of this incident was a retaliatory raid, the biggest of its kind ever to be made in this part of the country. On October 28th, a force of 102 armed Immigration officers, from points along the border as far west as Buffalo, N.Y. gathered at Jackman and was divided into groups which were staked out at strategic points in the North Branch area, each group equipped with a "chain" -- a long pole with handcuffs on it -- ready to descent on the camps that night. A garbled account of this operation appears in the Bangor Daily News of October 30th, but the writer was at the St. John camps two days after the event, and has some little memory of what happened, or at least of what he was told had happened. On the evening of October 28th the squad assigned to this operation cut the telephone wires at the Caucogomoc road, and walked in to the St. John depot camp, six miles, over the winter hauling road, which was also the tote road, two feet deep in mud in places, and it must have been a tired bunch who surrounded the depot at about
1:30 A.M. on the 29th. As we remember, a few of the men at the depot got out and ran to warn the other four camps, which were between three and five miles further in, so that when the officers arrived at these places, the malefactors, if any, were long gone. The cook at one camp refused to give the immigration men any breakfast, but they were fed after they got back to the depot. The newspaper account says that 40 men were taken in this raid; a small result for such a massive effort; but if our memory serves, only four came out of the St. John operation, and one of these was a citizen who just took the opportunity to get a trip out to Bangor. As we said, to our knowledge, no such big raid was ever carried on again. The camps are still checked, but with radio communication, a good road into every operation, the woodsmen housed in small separated buildings and nobody in the woods on week-ends, the job is quite different from what it was in those days.

If it had not done so before, the Company began to recruit in Canada for its contractors after the bonded labor system was introduced in 1941. We discussed this briefly in another place, and as it remains essentially unchanged, we will go into this only superficially. Essentially, an agreement is reached between Canadian and U.S. authorities as to the maximum number of men needed in Maine, New Hampshire, Vermont and New York, the year being divided into two periods, April 1 to September 30 and October 1 to March 30. Prevailing wage rates for different jobs are determined each six months by a survey by the Maine Employment Security Commission, and these become the minimum which must be paid to all labor, bonded and domestic. Each employer then files with the U.S. Immigration
Service for the number of men he needs; there is a process of checking insurance coverage and so on, and eventually the Department of Labor allocates a quota to each applicant. The employer then files again for the quota allowed him, unless he wants to argue about it, and after the number of men has been agreed upon he posts a bond of $75.00 per man (before 1957 it was $500.00). Next, an order for at least the number of bonds allowed is filed with the Maine Employment Security Commission, supposed to assist in filling the jobs with qualified domestic labor, which is given preference for some period of time, after which the employer is free to recruit in Canada, each man entering being given a bond card that he must carry at all times. This allows him to return home for a maximum of seven days, after which it is cancelled, and another man may be hired. The card must be turned in at the end of each man's allowed term, and bond is forfeited for any man who does not go back to Canada. This has worked pretty well, but there has been constant attrition of the number of bonds allowed.

We have noted the difficulties encountered during World War II under the bonded labor system, these being in large part due to the exit permit then required by the Canadian Government. We did not note that it was discovered that the refusal to issue exit permits to men to work for Great Northern, along with the border closings, particularly in Aroostook County, was because recruiters for other companies were paying graft -- $5.00 to $20.00 a head -- to local Canadian employment officials. The Company not only had not paid cent one, but when it found out what was going on threatened to blow the whistle on these people, after which there was no more trouble. The exit permit was abolished in 1946.
There was no imported labor at all in Aroostook County up until 1941. The French-background native of Northern Maine, a natural woodsman, usually came from a large family and a small farm, and worked along with his Anglo-background neighbor all over the county as far west as the Allagash, except in the potato-picking season, when all woods work came to a standstill. However, during the war, the young men went into the service or to the factories and shipyards to the south, and Quebec and New Brunswick became the source of much of the woods labor for that part of the country. This has never ceased to be a source of friction.

In Aroostook, in spite of the safeguards imposed by law, and regardless of the state of the labor market, any Canadian worker has always been resented by local labor. The French-Canadian on the upper West Branch had little competition for many years, but even that is changing. We have written quite a lot about the Canadian woodsman, because historically he has been indispensable to the Great Northern Paper Company, which may shortly have to learn to get along without him. As this is written, there are a considerable number of visas cutting wood for the Company, and it has three or four Canadian contractors using bonded labor, but we are told that Great Northern itself has in its operations only about 50 bonds, almost all on the West Branch. In Aroostook, as we said, the Canadian has always been resented, and now the situation on the West Branch and elsewhere is also changing.

In another part of the Spruce Wood Department's story, we covered union organization of mechanics and men in related occupations working from fixed locations like Greenville Junction and
Millinocket, and while we did not mention it, of workers in similar jobs in the Sheridan area and in the chip plant built at Portage in the 1960's, after the Spruce Wood Department had become the Woodlands Department, but in the face of Great Northern's long tradition of contractual relationships with its mill people, none of the several efforts made by different labor unions to organize its woods labor in one area or another has so far met with much success, although men working for a few other companies have been organized. However, as this is written, we have among the woods workers those who own or are buying their own skidders and other mechanical equipment, the cost of which runs well up into five figures, who are in effect jobbers, and there are men with only chain saws; divided among themselves, not necessarily on these lines, but almost unanimous in claiming serfdom to the big paper companies, in denouncing poor earnings and bad working conditions, and in blaming Canadian labor as the source of their real or supposed troubles. This is leading toward organization of one kind or another. It is an extremely complicated situation, and is likely to get more so, and what comes out of this mess we will have to leave to someone else to write of. On top of this, there seems, rather curiously in view of the alleged inhuman treatment afforded woods workers, to be somewhat more interest in woods work among the young people of Maine, both men and women, and the Maine woodsman, as we have followed him for some 300 years in the changing aspects of his ancient and honorable profession may in this Alice in Wonderland age of "Equal Opportunity" and "Affirmative Action", become a card-carrying "woodsperson", while John Ross and Ike Terrill and Fred Gilbert turn incredulously in their graves.
We have attempted to establish the scale of wages in the woods over the years, but have found this to be impossible. There are surprisingly few recorded rates to begin with, and, as in the mills, the work content of the various occupations has been changed, new jobs have been added, and old ones have disappeared. Men have been paid by the month, by the day (and days have been of different lengths); by board foot measure, by the cord, rough or peeled, and by the hour, and basic rates that are available are complicated by so many factors that they are confusing. Some people worked the year round, some were seasonal. In the earlier days, men were paid off at the end of the cutting season, at the end of hauling, or as the various drives were completed. Rates were changed arbitrarily to meet conditions, and it was many years before there were regular paydays. The best we can do is to make some statement about some known rates of pay at different times, without trying to adjust for all the unknown variables.

We have noted in another place that in 1900 a camp foreman was paid $30 to $40 a month; choppers -- they would now be cord cutters -- $20 a month, labor $12, and we have noted that at the same time $2.75 to $3.00 a day was being offered for river drivers. In November, 1911, Fred Gilbert wrote to Al MacNeill: "We have decided to make wages of best men $1.00 per day, Sundays included..." but we have no more hard information until the period from 1913 to 1922, and list a few of the occupations by intervals, using some of the jobs that changed little over a long period.
<table>
<thead>
<tr>
<th></th>
<th>1913</th>
<th>1916</th>
<th>1917</th>
<th>1919</th>
<th>1921</th>
<th>1922</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-horse teamster</td>
<td>$1.15</td>
<td>$1.20</td>
<td>$2.15</td>
<td>$2.40</td>
<td>$3.15</td>
<td>$1.75</td>
</tr>
<tr>
<td>Swamper</td>
<td>.90</td>
<td>1.00</td>
<td>1.80</td>
<td>2.00</td>
<td>2.65</td>
<td>--</td>
</tr>
<tr>
<td>Cook A</td>
<td>-</td>
<td>2.00</td>
<td>3.40</td>
<td>3.50</td>
<td>5.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Blacksmith A</td>
<td>-</td>
<td>2.00</td>
<td>3.10</td>
<td>3.25</td>
<td>4.50-5.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Saw Filer A</td>
<td>-</td>
<td>2.00</td>
<td>3.10</td>
<td>3.25</td>
<td>4.50-5.00</td>
<td>3.00</td>
</tr>
<tr>
<td>River Drivers</td>
<td>2.50</td>
<td>-</td>
<td>3.50</td>
<td>3.50</td>
<td>2.50</td>
<td></td>
</tr>
<tr>
<td>Cord Cutters-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>per cord rough</td>
<td>1.50</td>
<td>1.50</td>
<td>-</td>
<td>3.25</td>
<td>3.75</td>
<td>1.75</td>
</tr>
</tbody>
</table>

There were three classes of cooks, blacksmiths and filers, and two of river drivers. The rate given is the highest.

If one compares these figures with those in the tabulation of mill rates, he will find the same rise up to 1922 and the same precipitous drop at that time. It is interesting to note that the $3.50 rate for river drivers in 1922 was not much more than was being paid in 1900, but that was for logs, of course. In 1926, river drivers were still getting only $3.00 a day, but we have no more rates until 1941. By this time, wages were being paid by the hour, and the rate of 40 cents an hour for river drivers, who as seasonal workers could put in 56 hours a week without payment of overtime, was still not much more than $3.00 a day.

By 1945, when we have the next information, there were a lot of new occupations, plus some of the old ones, and we will do the best we can with what very little we have from that year until the 1973-1974 season, when there is still more change in woods jobs. In all cases where there is a sliding scale, we use the highest rate.
These raw rates are not really of much value. Hours worked, as in the case of cooks and river drivers, fringe benefits, overtime provisions of the wage-hour laws, bonus payments, car mileage allowances, chain saw rental and whatever, added over the years; the increased daily productivity of the chain saw over the bucksaw and a host of other factors too complicated to get into, distort the woods wage picture so that no comparison is possible within the scope of this work. The figures indicate no more than a trend. We do not know how any of them relate to board rates. Information on the subject of board is so scarce and so confusing that we must simply ignore it.
At a number of points in our story we have noted the cumulative acreage of Maine timberland acquired by the Great Northern Paper Company, beginning with its purchase of 250,000 acres from Garret Schenck, E.H. Haskell and Charles Mullen when the Company was organized in 1899. By 1951, the figure had grown to 2,263,000 acres. In 1955, with the sale of the Madison mill and part of the Kennebec lands, it dropped to 2,162,000 acres, but the 1951 figure had been more than restored by 1961, and as this is written it is a little less -- 2,219,000 acres.

There was no doubt much of interest about the way some of this land came into the hands of the Company, but only in rare instances is there any information. Purchases and sales were made in face-to-face negotiations and through correspondence that would be hard to find, if any of it still exists. The original 250,000 acres was of course aggressively sought after, with offers to buy, mostly by Charles Mullen. No land was bought in 1900, but in 1901 another 144,000 acres were acquired. It would seem that much of this was from people connected in one way or another with Garret Schenck or his associates, who had bought on speculation or with options to the Company. There are few first names on our list, but Chandler, Sanger, Hale, Col. Payne and Powers are all names made familiar in our story. The price of this lot ran from $2.70 to $4.50 an acre.

There were no more purchases by the Company until 1905, when Crockertown, on the Kennebec, was acquired, and in 1906 the Holyoke lands were bought, primarily to get the Burnt Land Rips site for the East Millinocket mill, at $4.54 an acre. In this year and the next, small separate purchases were made from Garret Schenck and Charles Spruce Wood - 263
Mullen at about $5.00 an acre. The lack of funds for land purchases is indicated by the formation in 1905 or 1906, as nearly as we can tell, of the Northern Maine Land Company, which borrowed from the Northern Finance Corporation to buy a considerable amount of timberland which it put up as security, and made a five-year agreement to sell the stumpage from it to the Company. We have not been able to find out exactly who may have been involved in it. Great Northern itself apparently originally held one-quarter of the stock, and there are indications that most, if not all the rest was owned by F.S. Moseley & Co., the Boston Brokerage firm. In 1908 the Company bought from them additional shares to bring its interest to one-third. The first five-year stumpage agreement ended in 1911, and was renewed for five years, for about 24,000 cords a year, at a maximum price of $6.00 per f.b.m. ($3.00 a cord). Northern Finance apparently borrowed from the United States Trust Company, mortgaging the Northern Maine Land Company to it, and in 1916, at the end of the extension of the stumpage arrangement, Great Northern bought all of the land owned by the Northern Maine Land Company, some 88,000 acres, and cleared up the mortgages.

From 1907 on, while the Company must have made unsolicited offers for land which was desirable for one reason or another, it would appear that the acquisition program was simply one of waiting and watching for the opportunities provided by the settling of the estates of the old lumber barons whose heirs preferred cash to undivided interests; the demise of some of the old lumber and land holding companies; decisions by other paper companies to buy wood rather than hold land, offerings by people who were land poor, bank foreclosures and other situations that put land on the
market, and having the cash or credit to make the acquisition. There were also things like the Blin Page prepaid stumpage deal -- there was one with the Stetson interests at the same time and under about the same circumstances, where purchase was almost a forced choice. So, as time went on, land was bought from many of the old landowners or their estates; Coe, Bass, Hersey, Barnjum, Mudgett, Prentiss, Appleton, Stetson, Dunn, Smith, Hayward, Lumbert, Bradbury, Lord, Hinckley, Jenness, Strickland, Pierce, Dole, Lunt, Thomas, Griswold, Powers, Kamber, Page, Hunt and Goodnow, many of them making a number of different sales; the Penobscot Development Company, the Eastern Land Company, the rest of the old Syndicate land around Millinocket; the Northern Maine Land Company, the Eastern Manufacturing Company, the Somerset Timberland Company, the tiny remnant of Fred Gilbert's West Branch Land Company, the Orono Pulp & Paper Company, the First National Bank of Boston, the Garfield Land Company, the Merrill Mortgage Company; a mess of small lots of from 30 to 400 acres; the Nicatou Land Company, which sold the Company the town of Medway, and Bowdoin College, and a great number of smaller owners. Many of these purchases were made on the basis of payment over several years, sometimes with interest on unpaid balance, sometimes without. There were two large trades with the American Realty Company, one in 1927 and one in 1949, and one with the Irving interests in 1951, none of which made much change in total holdings, and there were any number of other trades and divisions which did not much affect the acreage figures. There were many sales, too, but except for the Holyoke lands on the Fast Branch, and those to Percy Baxter and the Scott Paper Company, they were inconsequential in total volume.
The price of land rose steadily for a long time. A Coe interest purchased in 1909 cost $8.70 an acre; Hersey land bought in 1913 was at $6.90; Prentiss, Barnjum and Appleton in 1915 nearly $10.00; Lord in 1916 at $12.00 and Stetson in the same year at $11.00; the Eastern Manufacturing Company land in 1917 at $13.79. There were very heavy purchases in 1920 and 1921 during the post-war depression, the larger ones, Dunn, Smith, Blake; more Stetson, Coe and Prentiss; Jenness, Hunt and Powers; running from a minimum of $13.31 to a maximum of $31.18, most of the others around $15.00. Prices in the $10.00 to $15.00 range generally prevailed through 1922 and up to 1930, after which there were no more purchases until 1937, by which time a lot of land was for sale, the bottom had dropped out of the market, and 223,000 acres were obtained at between $4.50 and $5.00. By 1939, however, prices for land were up again to between $6.50 and $7.50, and by 1943 to around $11.00. There were four substantial purchases in 1944 and 1945, at a total cost of about $2,500,000, prices running from $3.00 to $9.00 an acre, but this was cut-over land, averaging only about four cords of pulpwood per acre, and a 15,000 acre acquisition in 1952, by which time the Company's holdings were about at their maximum, was at $13.70. All the above names and figures are in connection with the purchase of ownerships, wholly-owned or undivided, usually in more than one town, often in many towns scattered over wide areas, of 8,000 acres or more. A great deal more land was of course bought in smaller parcels, some for special purposes; for one example some 4,500 acres in Mariaville, not far from Bangor, where a camp was built during World War II to which to send known deadbeats who would not stay on any job, but were referred to the Company by Government employment agencies and had to be put somewhere.
This dissertation is partly to make the point that all the hogwash about the paper companies buying up all the land in Maine at "pennies an acre" is just so much hogwash.

In spite of 40 pages of figures, we do not know exactly how all these purchases, sales and trades worked out in terms of the value of the stumpage per cord on Company land, but we will explain it, in the simplest possible terms, as we think we understand it from many years ago, and if we are wrong it does not much matter.

All these lands had of course been cruised, or the merchantable timber on them had been estimated, and in many cases the owner's figures were accepted. The timberland account was divided, separate sets of figures being carried for the Madison lands, that is, those on the Kennebec River, and for Millinocket lands, taking in everything else, including Aroostook County and northern Somerset County. Both were handled the same way, and to keep it simple, we will base our comments on the figures for the Millinocket lands only.

The acreage of bare land, including water surface, was set up on the books at a small fixed figure per acre, which to our knowledge has never been changed since 1899. The amount which this represented was deducted from the purchase price. The estimated number of cords of pulpwood -- spruce and fir at first; spruce, fir and hemlock after the latter began to be used in any quantity -- were set up as the inventory of standing pulpwood, and the remainder of the purchase price was divided by this figure. The result was the cost per cord of pulpwood. The amount of
hardwood, poplar, pine, cedar, "juniper" (hackmatack) and other woods was recorded, but no value was placed on it, and when stumpage on it was sold, it became "other income" and did not affect the pulpwood figure. As land was bought or sold, the purchase or sale price and the amount of pulpwood it represented was added to or subtracted from the inventory figures, and a new cost per cord was arrived at. Pulpwood cut from Company land was deducted from the inventory and charged off at the cost per cord as of the end of the year, not affecting this figure. The increasing price paid for land, which we have noted, had raised the original cost per cord figure five-fold by 1933. With large purchases at lower prices after the depression, the average cost was worked down so that by 1944 it was just about four times what it had been in 1900.

While everyone knew that living trees had a tendency to grow larger, this was not recognized on the books until 1948, when, by what formula we do not know, about 25 percent was added to the inventory of standing timber, which we have been told was to take account of growth. This reduced the average cost per cord to about three times what it had been at the beginning, and this did not change a great deal until 1960.

Between 1948 and 1960, it does not appear that any growth was added, and the inventory of standing pulpwood shown by the books decreased steadily until in the latter year, holdings of 2,052,000 acres of land had on them less wood than on an ownership of 534,000 acres in 1913, which was patently ridiculous. At that time, therefore, estimated growth from 1948 to 1960 was added, practically tripling the book stand. Only a large purchase at a high price
in that year prevented the cost per cord from going down by two-thirds, but it was more than halved, becoming only about one and one-half times that of 1900. Since 1960, annual growth has been added, at what is probably a conservative rate. For obvious reasons, we have used no actual figures except dates and acreages in this discussion of pulpwood costing. Incidentally, almost all of the Company's timberland was put into the American Tree Farm System in 1965, and constitutes the largest tree farm in the State of Maine.

Everything of which we have written came together in the cost of wood charged to paper. This figure included not only stumpage, operating, driving and rail and truck transportation costs, stirred in with the delivered cost of purchased wood, but a host of miscellaneous smaller operating expenses, excluding capitalized expenditures, lumped together as "Spruce Wood Overhead" and added to the cost of each season's cut as a per cord figure.

Unfortunately, we have only partial information, from the writer's own records, starting in 1930, but what is available is of interest as it relates to the conditions in the industry. As we have explained elsewhere, a different charge was made to each mill, but the differences were not great.

Garret Schenck's projected cost for wood in 1899 had been $3.50 per cord (rough) and we know that at least some small contracts were made at that figure. From then on, it would seem reasonable to assume that it climbed steadily, perhaps with some pause in the early 1920's, and by 1930, the first year for which we have a hard figure, it was up to $18.00 on a peeled basis ($15.30 rough).
For our purposes, the following represent closely the average figures charged the Millinocket and East Millinocket mills:

<table>
<thead>
<tr>
<th>Year</th>
<th>PER PEELED CORD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1931</td>
<td>$17.00</td>
</tr>
<tr>
<td>1932</td>
<td>15.00</td>
</tr>
<tr>
<td>1933</td>
<td>12.50</td>
</tr>
<tr>
<td>1934</td>
<td>12.50</td>
</tr>
<tr>
<td>1935</td>
<td>11.75</td>
</tr>
<tr>
<td>1936</td>
<td>12.00</td>
</tr>
</tbody>
</table>

From 1936 through 1941, the charge remained at between $12.00 and $12.50, but with the outbreak of World War II it began another steady rise:

<table>
<thead>
<tr>
<th>Year</th>
<th>PER PEELED CORD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1942</td>
<td>14.40</td>
</tr>
<tr>
<td>1943</td>
<td>16.93</td>
</tr>
<tr>
<td>1944</td>
<td>21.28</td>
</tr>
<tr>
<td>1945</td>
<td>25.99</td>
</tr>
<tr>
<td>1946</td>
<td>26.85</td>
</tr>
<tr>
<td>1947</td>
<td>27.56</td>
</tr>
<tr>
<td>1948</td>
<td>27.62</td>
</tr>
<tr>
<td>1949</td>
<td>27.41</td>
</tr>
<tr>
<td>1950</td>
<td>25.22</td>
</tr>
<tr>
<td>1951</td>
<td>27.72</td>
</tr>
</tbody>
</table>

We have no more figures until 1971, when the charge-out was up to approximately $37.25 per peeled cord, and again for obvious reasons, this is far enough for us to go.

Great Northern's timberlands have not escaped the natural enemies of the forest -- fire, blowdown and insects. The Company
from the beginning was very mindful of fire, and was active in fire prevention, as indeed were many of the other large landowners of the time. It supported the effort of the State which resulted in the creation of the Maine Forestry District, which we will go into only superficially. We quote from an article in The Northern of July, 1928, prepared by the Maine Forestry Service:

"The idea of the Maine Forestry District originated from a proposed plan of several landowners to protect their lands from forest fires. The plan was as follows: 'In 1903 the State appropriated $10,000 for the purpose of guarding forest property in order to prevent fires as much as possible. The land owners realized that this fund was very insignificant in times of extreme drought. Many of them employed men at their own expense to patrol their property, but each realized that he was likely to suffer from fire spreading from other lands that were unguarded, as from fires within his own lines; consequently the plan was conceived of raising a much larger fund by each of the land owners contributing pro rata according to his acreage. It was found that some land owners would not enter into such an agreement and therefore the whole scheme fell through.'"

The Company was one of those involved in this scheme, and it would seem that some success was attained before it "fell through." Some fire watch facilities were built, as the Directors voted on May 8, 1906 "to contribute $500.00 toward maintaining fire watches at the various mountain stations that have been established."
This may not seem like much money, but it was quite a lot when a watchman could be hired for a dollar a day or less.
In 1908 there were a number of bad fires, and in 1909 the Maine legislature, recognizing the inefficiency of the voluntary system, passed the Maine Forestry District law, which set up an agency of that name under the Forest Commissioner, empowered to purchase a certain amount of equipment, to establish a formal fire watch system and to develop an organization to supervise and coordinate fire prevention and fire fighting activities on the wild lands. It was financed by a small special tax on land owners, on a per acre basis, and received no money from the general fund. By the 1920's, it had 68 lookout towers, 1500 miles of telephone line, 90 camps, 13 motor boats, 18 trucks, 33 portable pumps, and enough hand operated pumps and other tools to equip 10,000 men, if necessary, and was renting an airplane for patrol purposes. Great Northern, of course, had its own fire fighting system and equipment from some early date, although we have no information on the nature of it until the 1920's, when we know that in addition to power-driven portable pumps and hose, back-pack pumps, axes, shovels and other hand tools, located at strategic points, it had a number of 5-ton trucks, each with a gasoline-driven pump, hose, back pumps, hand tools and camping equipment, ready to move at any time; another truck with two trailers, one with a large pump and 2,000 feet of hose, the other with a field kitchen, and for a while it had a fire boat on Chesuncook Lake. This was of course before the bulldozer which is now so important in containing fires, but equipment of the kind used in the 1920's is still essential.

The Maine Forestry District is believed to have been the only thing of its kind in the United States at the time it was set up, and has been very effective over the years, receiving excellent cooperation from the land owners, who send men and equipment to any place to which they are directed, whether on their property
or not. As good an example as any of the way this worked was the Brassua fire of May, 1921, when 75 men from the American Realty Company and 100 from Great Northern's operations around Seboomook were on the fire line in less than two hours after it was reported to the warden at Seboomook Dam, and the Great Northern men had to walk over six miles from the 10-Mile, carrying their tools and equipment. As this is written it is still in existence as an administrative entity of the Forestry Bureau of the Maine Conservation Department, but the so-called "self-imposed" tax was abolished in 1973, and it is financed from the general fund.

With one exception, the great Wassataquiek fire of 1903, which burned 85,000 acres, we do not believe that since 1900 there have been any huge forest fires in Maine, like those of the 19th century, but there have been some of substantial proportions, of which the Company has had its share. Any fire is serious, but we list only those of over 600 acres, or roughly a square mile, as given us by the Woodlands Department, and a square mile is a whole lot of woods when it is forty miles from nowhere. There were many more smaller ones, at least nine not in the following list being mentioned in The Northern during its short lifetime, and there were others, before and after:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TOWNSHIP</th>
<th>ACRES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1911</td>
<td>T.4,R.10</td>
<td>811</td>
</tr>
<tr>
<td></td>
<td>T.1,R.12</td>
<td>1952</td>
</tr>
<tr>
<td></td>
<td>Seboomook</td>
<td>3955</td>
</tr>
<tr>
<td></td>
<td>T.1,R.10</td>
<td>6761</td>
</tr>
<tr>
<td></td>
<td>Boyd</td>
<td>1229</td>
</tr>
<tr>
<td>1912</td>
<td>T.3,R.13</td>
<td>2285</td>
</tr>
<tr>
<td>YEAR</td>
<td>TOWNSHIP</td>
<td>ACRES</td>
</tr>
<tr>
<td>------</td>
<td>----------</td>
<td>-------</td>
</tr>
<tr>
<td>1921</td>
<td>T.1,R.12</td>
<td>1000</td>
</tr>
<tr>
<td>1922</td>
<td>T.4,R.12</td>
<td>700</td>
</tr>
<tr>
<td>1923</td>
<td>T.17,R.5</td>
<td>3570</td>
</tr>
<tr>
<td></td>
<td>T.7,R.3</td>
<td>3715</td>
</tr>
<tr>
<td></td>
<td>T.7,R.3</td>
<td>1045</td>
</tr>
<tr>
<td></td>
<td>T.6,R.14</td>
<td>1728</td>
</tr>
<tr>
<td></td>
<td>T.5,R.13</td>
<td>1627</td>
</tr>
<tr>
<td></td>
<td>T.5,R.13</td>
<td>1556</td>
</tr>
<tr>
<td></td>
<td>T.3,R.9</td>
<td>1500</td>
</tr>
<tr>
<td>1924</td>
<td>Garfield</td>
<td>13000</td>
</tr>
<tr>
<td></td>
<td>T.2,R.11</td>
<td>10880</td>
</tr>
<tr>
<td>1926</td>
<td>T.2,R.8</td>
<td>2000</td>
</tr>
<tr>
<td>1930</td>
<td>A.R. 7 &amp; E. Hopkins</td>
<td>620</td>
</tr>
<tr>
<td></td>
<td>Indian No. 3</td>
<td>610</td>
</tr>
<tr>
<td></td>
<td>E. Hopkins</td>
<td>600</td>
</tr>
<tr>
<td>1932</td>
<td>E. Moxie</td>
<td>4356</td>
</tr>
<tr>
<td>1933</td>
<td>T.1,R.7 &amp; T.1,R.8</td>
<td>960</td>
</tr>
<tr>
<td>1938</td>
<td>T.19, R.11</td>
<td>973</td>
</tr>
<tr>
<td>1941</td>
<td>T.1,R.8 &amp; T.1,R.9</td>
<td>3800</td>
</tr>
<tr>
<td></td>
<td>T.2,R.8 &amp; T.2,R.9</td>
<td>2300</td>
</tr>
<tr>
<td>1944</td>
<td>Medway</td>
<td>1210</td>
</tr>
<tr>
<td>1950</td>
<td>T.2, R.9</td>
<td>864</td>
</tr>
<tr>
<td></td>
<td>T.2,R.4 BKP WKR</td>
<td>1500</td>
</tr>
<tr>
<td>1952</td>
<td>E. Middlesex</td>
<td>700</td>
</tr>
<tr>
<td></td>
<td>T.6,R.15, T.6,R.16, T.7,R.16</td>
<td>2400</td>
</tr>
<tr>
<td>1968</td>
<td>T.12, R.12</td>
<td>4100</td>
</tr>
</tbody>
</table>

There was another large fire, not listed, which occurred on Lawelltown in 1908. This was started by a Canadian Pacific Rail-
way engine, and the Company and others brought suit for damages and in an effort to force the C.P.R. to convert its locomotives on the run across Maine to oil. This resulted in a settlement in 1912, of which the Company's share was $41,832, but there is nothing to indicate whether the railroad changed to oil at that time.

A considerable amount of merchantable timber must have been lost in these fires, but little information on this is available. There was of course always a certain amount of salvage, but some loss had to be accounted for. However, in all the record of purchases, sales, trades and cuts over nearly 70 years in the summary of the timberland account, there are but two mentions of loss of pulpwood by fire, one of 43,000 cords in 1938 in the Millinocket account; location or locations unspecified; and one of 5,000 cords in 1952 on Pierce Pond in the Madison account, although the above list says nothing about a fire on Pierce Pond. There are no doubt good reasons for this, but our experience in trying to get explanations of this kind of thing discourages any effort.

In a general way, blowdown, either isolated or massive, is salvageable, and we will neglect it as a source of loss, but insect damage is another matter. Perhaps no trees in the Maine woods have so many bugs chewing on them as the spruce and fir. The wooly aphid, the spruce gall aphid, the spruce webworm, the spruce beetle, the hemlock looper, which also eats spruce; the spruce and fir sawflies and the spruce budworm are all busily at work on Great Northern trees. All of them cause damage, but most can be tolerated. The sawfly is dangerous, but to our recollection, there has been only one big outbreak. This began in the middle 1930's, and lasted perhaps five or six years. At its height, it
promised to be a real threat, did a lot of damage, particularly to spruce, and caused a lot of worry, to the point where about 1937 a parasitic wasp was imported, we believe from Hungary, and was turned loose in the most badly infested areas. However, the larvae of this insect developed a fungus disease, which by 1940 had about wiped it out, and there was little evidence that the wasp had done much good. The spruce budworm was and is something else.

We have no information on what damage may have been caused by this insect before the massive infestation -- there had been several others, back into the 1700's -- that started about 1910 and continued unabated until around 1920. At that time there was no effective means of control -- there is really none yet, for that matter, and the budworm chewed its way almost unmolested from Quebec through the northern and central part of Maine and across New Brunswick and Nova Scotia, destroying, it is said, some 27,000,000 cords of wood. There are several sets of figures on the amount of spruce and fir killed on Company lands. An estimate by the Division of Forest Engineering in 1920 indicated a gross kill of 1,205,964 cords. This of course represented a tax loss, and meetings were held in that year with the I.R.S., as a result of which the Company in that year and the next charged off 586,000 cords. In each of the years 1926, 1927, 1928 and 1929, another 197,500 cords were written off, the total from 1920 to 1929 amounting to 1,276,800 cords. However, in connection with another go-around with the Internal Revenue Service in 1930, we find a deposition from William Hilton that the gross kill amounted to 1,008,252 cords, of which about 218,000 cords had been salvaged; a net loss of some 890,000 cords. Salvaging, incidentally, was for some reason not started until around 1918,
when almost everything that was going to die was dead, and the amount that could be reclaimed had been greatly reduced. Anyway, it appears that something in the neighborhood of 1,000,000 cords were lost in this episode.

The budworm has been around ever since, and in the last few years another outbreak of epidemic proportions has again struck large areas of Quebec, Maine, New Brunswick, Nova Scotia and Prince Edward Island. Spraying from aircraft has met with some success, and the Company has begun salvage operations, but the final result in the way of loss may not be known for a long time.

We deliberately leave this part of our story on this sour note. Henry David Thoreau, who predicted in the 1850's that Maine would be a treeless wasteland, was wrong. F.J.D. Barnjum, who in the 1920's said that there would be no pulpwood left in the eastern United States and Canada was wrong, but we write this at a time when not only the caterpillars but Federal and State governments and numberless environmental, ecological and conservationist groups are nibbling away the capacity of Maine's woodlands and rivers to sustain its greatest industry. Yes, the writer is biased. A naturalized citizen, Maine is his home by choice. He loves its woods and rivers as much as anyone, but he maintains that they are a resource as well as a playground, and that, since the days of the old lumbermen, those who have owned and managed them have, in spite of some mistakes, done a creditable job, and do not deserve the abuse being heaped upon them, nor many of the restrictive measures in effect or proposed, which, if carried to the extremes that some people have in mind could seriously damage Maine's in-
Except for what is contained in other chapters, this is it. Our research of the mass -- perhaps we should say mess -- of information has in many ways been superficial. We have left out much that might be of interest, and we have put in a lot of things that probably are not of much importance. There is much more that could be said, but one has to draw the line somewhere. The writing of the full story of the old Spruce Wood Department; the Woodlands Department as it is now, would require more patience than the writer, who has lived more than his three-score and ten, possesses. So that's all she wrote, and we will turn our attention to the things that happened as the old Company changed into the Greater Great Northern.