

LOGGING of the BLACK & WHITE WATERSHEDS:

THE PRE-MECHANIZATION ERA 1890 - 1950

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T A B L E

of

C O N T E N T S

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FOREWORD:

The primary purpose of this report is to present the research that has been done on the logging history of the White River Division so that the blueprint of a logging exhibit for White Lake Provincial Park may be adopted. An attempt has been made to be as comprehensive as possible. Undoubtedly there is much information relative to the history of this area that has not been uncovered and those who have the opportunity to read this report are invited to point out any grave errors or omissions.

In the course of researching this report, the author has tried to be precise with respect to dates and figures. In as much as many of the records of the companies involved and the provincial government have been destroyed, many of the dates and figures are supported only by the memories of those interviewed. Both Abitibi and Ontario Paper have been obliging in supplying information we have asked of them and it is quite understandable that they should not wish to make public certain economic facts and the reasoning behind many decisions they have made with respect to their operations in this area. This type of information, while very often interesting, colourful, and intriguing, is not essential to the skeletal outline of the history of logging operations in the White River Division.

An attempt has been made to capture the style of life in the logging camps prior to the era of mechanization which begins in the late 1940's and to relate it to life in the "outside" world. Anecdotes are included in the report to add a dimension - the human one - which serves to compliment the factual and present a more colourful sketch of an era. It is hoped that more anecdotes will be forthcoming when the project is more widely publicized.

As stated earlier the purpose of this report is to furnish background information for a logging exhibit. The report was not researched with the idea of establishing or making a specific point. As the research information was compiled it became evident that certain themes were developing and it was decided at the end of October that the area of concentration should be from the late 1930's to the mid 1940's, the period during which the area adjacent to White Lake Park was logged. As such, the preparation of this report has placed primary emphasis on this period and the development of the companies that took part in it and gives a very superficial treatment to the period from 1947 to the present.

While objectivity has been a goal in the report it has been the policy not to leave out a comment where a preoccupation with objectivity might have warranted it's exception. "We must not forget that the writing of history - however dryly it is done and however sincere the desire for objectivity - remains literature. History's third dimension is always fiction".¹ Without the third dimension - anecdotes and comment on events by the historian - there is no animation that provides a link, however mythical, between the past and present.

The first exploitation (utilization) of the forest resources of the White River Division took place in 1890 when the Whalen Lumber Company took out logs and pulp along the Pic River. 2. Although the specific area cut over and destination of the wood is not known for certain, it is presumed the cutting was done in the proximity of the mouth of the Pic River and that the logs were probably boomed across Lake Superior to pulp mills in the United States. Another reference has been made to logging in the area in the 1890's. The district made the news about 1896 with a double-murder story. Two American hunters had disappeared and an Indian family by the name of Moses was suspected. Provincial Constable James Whalen of Port Arthur was sent to investigate. With two other Port Arthur men as assistants, Whalen accompanied the Indian agent on his visit to the Pic Reserve to pay the Treaty Money. When the party reached Heron Bay, the constable represented himself as a lumberman looking for help in a timber operation and the other two men posed as his clerks. 3. This story would seem to lend credence to the report that there was logging in the area in the 1890's or the disguise adopted by the police would have been suspect. However, the similarity between the name of the constable and the name of the lumber company believed to have been here and the fact that the constable chose the disguise of a lumberman might also be the source of a rumour, and nothing more, that there was logging in the area at this early date.

The next record of a logging operation in this division is that carried out by the Lake Superior Paper Co. Ltd., which at this time was owned by Spanish River Pulp and Paper Mills Ltd. In the area of the Pukaskwa River, this operation commenced in 1919 and was terminated in 1931. A cut-over map of the area made in 1930 indicates that most of Homer Twp. at the mouth of the Pukaskwa River was cut. Although cutting was restricted to the river valleys on account of the rough terrain, cutting extended some 18 miles up the Pukaskwa River, on which seven dams were built to facilitate the driving of logs. The East Pukaskwa, the Pipe and the Ghost (Floatingheart) Rivers are also known to have been logged. The logs were boomed to the mill in Sault Ste. Marie, and all supplies were brought to the area by boat. Two interesting points were picked up from the 1930 map. First, communications with the outside were maintained in winter by the "White River Trail" which is indicated on the map of the area. There were several "mail shacks" marked along the trail which ran over frozen rivers and lakes. The second point of interest is the appearance on the map of the name of a jobber, E.J. Frappier, whose name also appears in the Crown Timber Agent's records for cutting carried out by Austin Lumber Company in this district from 1939 to 1943.

In 1923 Austin and Nicholson Lumber Company opened a saw mill at mileage 18½ west of White River on the C.P.R. The mill was operated by two foremen in succession named Bertrand and Allard (Allaire) until 1933 when it closed. The site that grew up around the mill is still known today by the name of the first mill foreman, Bertrand. The mill had circular saws run by steam power and belt drive, cutting mainly ties for the Montreal tram system. The fuel used to heat the steam was the waste from the mill-sawdust and slabs. There were no nails, only oak pegs, in the frame of this

mill. The Bertrand mill was a single carriage mill which also cut some lumber that was shipped by rail to the mill at Dalton for 'finishing'. The Dalton mill had a double carriage operation capable of handling 4,000 logs per day.^{4.}

The Pigeon River Lumber Company operated along the Pic and Little Pic watersheds in the early 1920's and was "superceded by the Pigeon Timber Company, formed by the late E.E. Johnson of Port Arthur".^{5.} From 1932 to 1935, the Pigeon Timber Company cut pulpwood from the Black River watershed, not far from the joining of the Pic and Black Rivers.^{6.}

"In 1936 Marathon Paper Mills of Rothschild, Wis., were anxious to acquire a constant supply of wood from Canada. A subsidiary company, General Timber of Port Arthur was formed. It was managed by Alfred Johnson, a nephew of E.E. Johnson, and Burton Stewart. They bought out the rights of Pigeon Timber Company and operated on the Black River during 1937".^{7.} From a report of the Ontario Paper Company Ltd., dated Feb. 18, 1937: "The operation referred to is located along the newly constructed Trans-Canada Highway and the Canadian Pacific Railway between Pringle Siding and Hemlo Station. It was originally planned that the operation would yield 40,000 cords of four foot wood this winter to be driven and rafted from the Black River into the Pic River and to be boomed and rafted from the mouth of the Pic across Lake Superior. The Marathon Lumber Company are purchasing the wood".^{8.} There were six camps in the area operated by contractors named Bell and Sinclair. A warehouse (18' x 24') at Pringle Siding was valued at \$200., a toteroad at \$400/mile, and a camp for a gang of 60 men at \$500.^{9.} In 1938 General Timber (later known as the Marathon Corporation and presently known as the American Can Company) was given the cutting licence on the Pic River watershed with the proviso that a pulp mill be eventually constructed somewhere in the area.

In the latter part of 1937 the Black River watershed, an area of 781 square miles, was acquired by the Ontario Paper Co., and has been operated by same since then. In that year Abitibi Power and Paper Co. commenced a salvage operation of the 1936 fire in the Hayward-Herrick Lakes area. In 1939 the mill at Bertrand was re-opened by Austin Lumber and operated continuously from then until 1961 when it was closed and moved. Abitibi returned to the area in 1941, commencing the operation of the White Lake and Shabotik areas out of Regan. This operation closed in 1964 at which time Abitibi moved to the eastern part of the division, logging in and around Obatanga Provincial Park until 1971.

Austin Lumber, Ontario Paper, and Abitibi shall be dealt with individually in the remainder of the report. An attempt will be made to trace not only their operations in this particular area but the developmental period of each in other areas prior to their operations here. As mentioned in the foreword, the period of emphasis will be the late 1930's and early 1940's and the period after this will get light treatment.

Austin Lumber Company:

Austin and Nicholson Lumber Company was started in 1901 by two Chapleau men, James McNeice (Jimmy) Austin and G.B. Nicholson, a C.P.R. engineer. The three sawmills that Austin Lumber operated were situated along the Canadian Pacific Railway at Nicholson Siding (1910) and Dalton Mills (1920-21), west of Chapleau, and at mileage 18½ west of White River, known as Bertrand".

The mill at Bertrand lies within the division under examination. It was closed during the depression years from 1933 to 1938. Re-opened in 1939 with Sid Olsson as foreman, the mill cut mainly ties for the C.P.R and mining timber for International Nickel in Sudbury. The ties were 7" x 9" or 6" x 8", eight feet long, and were hand-loaded into box cars at Bertrand and shipped to the creosote plant in Sudbury. The mining timbers had a minimum dimension of 8" x 8", varying in height from 5'6" to 6'7". 12. The mill operated on a seasonal basis from early May until late October, as, like other woods operations of the era, cutting was done in the fall, hauling in the winter, and the driving of logs down the streams and rivers to the mill in the spring. Logs were boomed in Government Bay (or Allard's (Elora) Lake) and then lifted by jack ladder into the mill. In the early 50's the mill was cutting 150,000 - 200,000 pieces of mining timber and 80,000 - 120,000 ties per season. 13.

Austin Lumber had a third party agreement with Abitibi, which held the cutting licence for the area, by which it cut only jackpine (which Abitibi could not use) and large spruce. Austin's jobbers used cross-cut saws, working in 3 man gangs, 2 cutting and one man skidding with a horse. Logs were cut into 17'6" bolts with a minimum diameter of 8" at the top. In 1940, rates of pay for cutters were 10¢ - 18¢ a log, depending on the size, a man being able to average about 75 logs per day. 14.

In the years from 1939-43, Austin Lumber cut in the Bertrand Lake (now Bouchard Lake) area, having small camps on Bertrand Lake, Tie Lake, and several on Bertrand Creek. There were two dams on Bertrand Creek to help the driving of logs to the White River come spring. The site of one of the larger camps which cut for Austin is still visible just north of the M.N.R. check station on the Regan (Kenshoe) Road. The camp was run by a jobber named George Natsuk (Nanchuk), 40, 162 logs having been cut in 1940-41. 15. By far the largest jobber - by jobber is meant a man who contracted to cut and deliver so many logs to the mill - was E.J. Frappier (who once cut for Lake Superior Pulp and Paper). He was in charge of a camp on Flood Lake which contained 210 men 16. and from which 90,807 logs were cut in 1939 - 40. 17. and 78,438 logs (all jackpine) in 1940-41. 18. In 1941-42 operations moved farther north and although the Regan road had not been built, a tote road ran into the Atlkameg.

Cutting was at one time carried on by Austin down Whitehead (Okoko) Creek, the Bremner River, and in the Leslie Lake area. There are no supportable dates or figures for cutting in these areas although camp locations and old tote roads appear on some maps.

There were four or five families living at Bertrand in the early 1940's and there was also a bunkhouse and cookery which housed and fed the 100 men who worked in the mill during the summer. In the summer of 1940 there were twenty-two Japanese P.O.W.'s working at Bertrand. 19. They were reputed to have been excellent workers and were allowed all the freedom afforded others working at the mill. They received a nominal wage. There was little worry that they would escape to a larger centre and assimilate themselves with the native population.

The original mill at Bertrand burned in 1950, (saw mills seemed to be plagued by fires, the mills at Dalton having burned in 1939 and 1949,.20. which leads one to think that perhaps collecting fire insurance was more profitable than the lumber business) and was replaced the same year. In 1955, Wm. Plaunt Lumber Co. of Sudbury bought out the Austin brothers (Allan and Bill, who had taken over from their father after the death of G.B. Nicholson) but retained the name. In the 1950's, Austin cutters followed Abitibi in the Mikano and Joseph Lake areas, cutting whatever was left. The agreement between the two companies was such that Abitibi gave Austin large spruce logs (over 8" at the small end) and Austin gave Abitibi the smaller logs and tops of trees which it could not use. Rented trucks hauled the logs to the mill in the 1950's. Austin never abolished the jobber system in favour of company run camps. The mill closed down in 1961 and most of the buildings were removed from the site in 1962.

Paper

In as much as the cutting done by Abitibi and Ontario Paper was conducted for the express purpose of supplying paper mills a brief discussion of paper and the use of wood as a raw material is in order.

Man has used many media for communication since the beginning of time. Carving in stone or clay was followed by the use of symbols written on papyrus or parchment. Papyrus was manufactured in Egypt as early as 2400 B.C. 21. by stripping the coarse fibers from the papyrus plant and crisscrossing them on a hard, smooth surface to form a sheet. Parchment was made from the skins of animals. The Chinese are given credit for inventing the art of papermaking around 105 A.D., making use of the inner bark of the paper mulberry tree and to a larger extent from bamboo. The bamboo was soaked in mud and water for two weeks and then pounded into a pulp with large wooden pestles. This pulpy mass was put in tubs of water after the coarser parts had been removed and when it had sufficient consistency to form paper, was placed on a frame constructed of small wire-like strips of bamboo. The water drained, leaving a sheet of felted fibers which was placed on a clay stove to dry. 22. The Arabs brought the art west (having substituted linen rags for bamboo fiber) and the Moors in Spain introduced it to Europe. The invention of the printing press about 1450 was probably the most significant factor in stimulating the growth of paper making.

Until 1797 and the invention of a small paper machine by Nicholas-Louis Robert, 23. all paper had been made on small hand molds or frames. In 1803 two London stationers named Fourdrinier financed the building and development of Robert's machine. 24. The main principle behind this machine was to form paper on an endless wire screen which would retain the matted fibers and allow surplus water to drain through the wire, thus allowing the manufacture of sheets of paper of great length as opposed to all previous paper manufacture which only permitted the production of small rectangular sheets.

"To newspapers the development of a paper-making machine was of little value without an inexpensive material containing fibers that could be used in machines. Paper remained so scarce that, as late as 1818, it was a criminal offence in England to make a newspaper larger than 22 by 32 inches ! In the early years of the nineteenth century several experimenters worked with wood fibers but it was not until 1840 that Frederick Keller, a weaver in Hainichen, Germany, obtained a patent on what probably was the first successful wood-grinding machine. It was simple enough, merely a device holding a block of wood against a wet grindstone. Paper makers mixed Keller's pulp with rag fibers to give it strength. Charles Fenerty of Halifax, N.S., working independently along the same lines, produced a groundwood sheet of paper in 1841. Several years later, in England, wood chips were cooked in a caustic soda solution to make pulp for paper and in 1865 an American chemist, Benjamin Tilghman, discovered a sulphite process for the cooking of wood. Tilghman's process was perfected in Sweden. Thereafter, sulphite pulp could be combined with ground wood pulp to make a strong newsprint sheet and the use of rags could be discontinued. 25.

Spruce (black and white) and balsam fir have been the prime species used to make pulp for newsprint because the length of their fibres permits a stronger bonding of the pulp and a stronger

paper. Jackpine has been used only in the last twenty-five years in any quantity as the pitch from this tree has gummed up many grinders. In 1885 the newspaper on which the Chicago Tribune was printed was 40% rags, 40% ground wood, 10% straw, and 10% chemical pulp. 26 The newsprint produced at the Thorold mill of Ontario Paper today " is made from 75% groundwood pulp which gives body to the sheet and 25% sulphite pulp which gives strength because of its long fibres". 27. It takes approximately 1 cunit (100 cu. ft. of solid wood) to produce 1 ton of newsprint, which is sufficient "to print 5,630 copies of a 64 page issue of the New York Daily News, a tabloid-type newspaper". 28. During the Second World War, by using various fillers, the mill at Thorold was able to produce a ton of newsprint from .888 cord .29. (a cord being 128 cu.ft. but only 94 cu.ft. of solid wood, the rest being air space.) 30.

Ontario Paper Company Ltd.

The Ontario Paper Company, a wholly owned subsidiary of the 'Chicago Tribune' was brought into existence in 1912 by Col. R. McCormick, the editor of the Tribune. A very astute man, he saw that it would be advantageous for a newspaper to have its own assured supply of newsprint rather than be dependent on a volatile paper market which at times experienced grave shortages, making newsprint very expensive, while at other times, because of inefficient functioning of the market system, provided vast surpluses. In 1911 he asked the Tribune directors to invest one million dollars in a paper mill. 31.

Thorold, Ontario was the site chosen for the new mill. The most appealing factor about the site in 1911 was the availability of great quantities of cheap electricity from the Niagara Falls hydro-electric development. The Thorold area also had available a source of experienced paper makers as there had been a newsprint mill in operation nearby since the 1860's. An added bonus not fully realized at the time (as for the first years of operation newsprint was moved from the mill to Chicago by rail) was the proximity of water transportation - the Welland canal and the Great Lakes.

The Thorold mill had no timber limits in Ontario. Originally wood was bought from timber companies, some coming from as far away as Anticosti Island in the Gulf of St. Lawrence. In 1919 the New York Daily News was founded and as a member of the Tribune chain placed more pressure on the Thorold mill. Timber limits were acquired in the same year at Shelter Bay on the north shore of the St. Lawrence in Quebec. In 1921 the nearby Franquelin limit was acquired and in 1923 the limits along the Toulousteok and Manicouagan Rivers were acquired. This latter limit was not developed until a mill was built in Baie Comeau in 1936.

With the Baie Comeau mill capable of taking a good portion of the wood from the Quebec limits, the Ontario Paper Company approached the provincial government of Ontario with respect to the acquisition of a licenced area to cut. The government suggested two watersheds, the Black and Pic Rivers, and Ontario Paper conducted a feasibility study under E.B. McGraw in 1936. In the study the Black River watershed was decidedly the more advantageous. In area it was roughly half that of the Pic, yet in merchantable timber (spruce and balsam fir) it had almost an equal amount. (Pic - 2½ cords/acre; Black - 4-5 cords/acre).32. The Black River was the easier of the two to drive as the Pic created great problems with ice and flooding in the spring. It would have been necessary to place the camps about 20 miles from the mouth of the Pic if it were hoped to obtain an average of 40,000 per year per camp. The camps could be built much closer to the mouth on the Black. A further consideration was the flatter, less rocky terrain on the Black watershed. In 1937 Ontario Paper, acquired the licence to cut on 781 sq. miles on the Black River, operations beginning on the Heron Bay limit in the summer of 1938.

Two comments of McGraw in the report are worthy of note: "The type of labour that is available is chiefly composed of Finns, Swedes and Norwegians - there are a few French-Canadians, but not many. In handling the type of labour available in this district different methods are required than in the Province of Quebec as the lumberjacks have unions which are quite active. It therefore requires a bush foreman who is experienced with this type of labour. They all work on piece work, either as an individual or seven or eight of them unite together to sign one contract for the cutting of so many thousand cords of wood. They are very insistent upon having very good and well kept camps and demand such improvements as drying rooms and steam baths no matter where they are located."33.

Further: "Most of the contractors in this area have their own sleighs and own horses, but one or two of them, such as Cox and T. Bell of Port Arthur do not have their own horses and rent horses from farmers West of Winnipeg, at a usual rate of \$26.00 a month with found. The contractor furnishes the harness and sleighs, being responsible for the condition and life of the horses. The experience of the people who have operated in this area is that it is not very profitable to rent horses from the Western farmers as they arrive in poor condition, are usually not shod and are not of the right weight or size to permit heavy operations. The more successful contractors buy their own horses and keep them on farms during the summer."34.

The operational headquarters of the Heron Bay limit was a town on the west bank of the Pic River called Heron Bay South. Construction started in the summer of 1938. This company town had several interesting features. The bunkhouse had hot and cold running water and partitioned rooms accommodating two men. Quite a contrast to the bush camp bunkhouses of the same time - log dormitory-like structures with no running water and outdoor facilities. Electricity was supplied to the town until 1960 by a company built and operated power plant just below the Black River gorge.

The fact that the Black River runs into the Pic about two miles inland from Lake Superior posed a slight problem that was settled by the construction of a wooden flume to carry the pulp logs from the mouth of the Black to a storage ground and wharf on Heron Bay, a distance of $3\frac{1}{2}$ miles. There were three jack ladders on the flume - at the boom on the Black River, just west of the towmsite, and at the storage pond for taking the pulp logs from the pond and loading them into the boats. The jack ladders and pumps which filled the flume with wood and water respectively were run by power generated at the Black River power plant. It took three-quarters of an hour for a stick to go from the barker to the wharf and at peak periods there were 50 cords in the flume. 35. The flume had the distinction of making Ripley's "Believe It or Not," because it had a bridge over the Pic River which carried water over water. That aluminum bridge (300' long and 80' above the water). 36 is still standing even though the flume and the towmsite have since disappeared, the flume in 1965 and the towmsite in 1970-71. Mrs. Boulbee makes a reference to the solution to the problem of two companies driving on the lower Pic by stating that the Marathon Corporation paid compensation in the form of part of the cost of flume. 37. for the right to use the lower Pic exclusively. There is no official verification of this however.

The company quickly learned the value of being on good terms with the Indians of the Pic Reserve. As insurance against the breaking of the boom and other mischiefs, with the resulting loss of thousands of cords into Lake Superior, the chief of the Heron Bay reserve was put on the payroll as a guard during driving and loading season.

A dock of steel pilings (still standing and in good condition) was built on Heron Bay to accommodate the fleet of lake freighters owned by the Quebec and Ontario Transportation Co. Ltd., which had been founded as a subsidiary in 1914. It took 3 to 4 days on the average to load one of these boats, the boat being turned around while docked. Two of the boats often seen in Heron Bay during the summer were the 'Outarde' and the 'Heron Bay'. The 'Outarde' built in 1924 in Scotland, was 248 feet long, with a 43' beam and depth of 25'. Her permissible draft of 19' made the ship particularly suitable for carrying big loads of pulpwood - as much as 1,295 cords from Heron Bay to Thorold. Her regular paper load from Thorold to Chicago was 2,050 tons, and on northbound voyages from Chicago she carried as much as 124,969 bushels of wheat or 3,495 tons of coal. The 'Heron Bay' was an 'upper laker', so classed because her length of 376 feet did not permit her to go below Kingston, Ontario. She was able to carry 2,700 tons of newsprint below decks or 2,000 cords of wood, and she was much favoured as a grain carrier because her five compartments held 195,000 bushels of wheat. 38 Her load capacity was later increased 19% by putting newsprint on deck under tarps. 39 A unique incident occurred the first time a ship came to load pulp wood at Heron Bay. "The opening of shipping 1939 was marked by an unusually big seiche - a sudden rise and fall in the level of Lake Superior caused by winds and atmospheric change. A seiche normally changes the lake level some 12 to 18 inches, but on this day at noon hour there was a four foot rise and fall within a few minutes. The company ship, 'New York News', approaching the wharf, had some difficulty maneuvering, but no damage was caused to it or the installations". 40.

Some trouble was experienced with the barking plant situated near the mouth of the Black River. The sandy bank washed away in 1939 and the barking plant threatened to sink into the river. Fifty-foot piles were driven in at the base of the bank for a distance of 200' and sand was back-filled. The drainage at the top of the bank was improved and along the bottom of the river spruce boughs and tree tops were bound together with galvanized wire to form a mattress which was weighted with rocks. The rescue cost \$26,000.41, but no more problems arose.

Ontario Paper cut 4' rough (unpeeled) logs as these were easier to drive and load aboard the lake boats. From 1960 on they have cut 8' logs. Cutting in the early years of the operation was carried on in the Mussy Lake, Little Black River area. Gradually the company moved up the Black watershed, cutting in the Gowen (Doyle) Lake and Cedar Creek area in the early 1940's. Many dams were built on small creeks to facilitate driving of logs in the spring. Although the company operated a few camps in the 1940's it is not until 1950-51 that the accent shifted completely in favour of company camps as opposed to jobbers.

In 1943, 75 prisoners of war .42. were cutting out of Camp 2 (about 2 miles north of Manitowadge corners). These men were from the P.O.W. camps at Neys and Angler, having been members of the Africa Corps. There was no quota in 1943 and the men averaged about $\frac{1}{4}$ cord per day. The next year a quota of $\frac{3}{4}$ of a cord per day was set and those failing to achieve it were restricted to rather uncomfortable disciplinary quarters. The prisoners received 50¢ a day and could achieve their quota for a month, then just sit around. The prisoners also helped with the loading of boats in the summer. Two of the prisoners decided this was not the life for them and pretending to be natives were en route to Hemlo when they met Ted Summers. The latter, having been born and raised in Austria and therefore fluent in German, suspected something was awry and asked the two men a question in German to which they inadvertently replied in the same tongue. The game was up.43.

Due to the over-expansion of the paper industry in the 1930's a proration plan was instituted in 1937-38 by which paper mills were only allowed to produce a set percentage of the total output. The Ontario Paper Co., being a private operation which placed no newsprint on the open market, was exempted. Many of the mills restricted by this system were angered at the exemption of this 'foreign owned' company. When in 1940 Col. McCormick wrote an anti-British, anti-lend lease, isolationism for the U.S. editorial in the Tribune he left himself open for much criticism. Canadian newspapers adopted a nationalistic and pro-British approach in editorials and many paper mills agitated the government to impose a quota on Ontario Paper. It is fortunate that the issue blew over without injury to any party, especially as the spark of the fire was a man merely exercising his right to state an opinion in an editorial Ontario Paper was never placed under the quota system.

The Ontario Paper Company has been very innovative in its approach to logging. They were the first company to make extensive use of tractors for hauling wood in place of horses. Ontario Paper started using gas powdered chain saws in 1947 and was using them almost exclusively by 1951, while other companies in the area, such as Abitibi, did not complete the switch until 1956-57. In 1948 Ted Summers designed the 'Summers' or Trudeau sloop, a metal sloop pulled by a tractor that could winch a cord of wood onto the sloop bed and be used summer and winter for hauling to main roads. Much pioneer work was done by the company with mechanical skidders in the early 1950's. Ontario Paper, operating out of Camp 70 northeast of Manitowadge is the only major logging operation in the White River Division..

Abitibi Power and Paper Company

A brief history of the operation of Abitibi's Sault Ste. Marie Division will give a proper framework to the Regan operation. In 1894, a pair of Philadelphia financiers, Francis H. Clergue and Edward V. Douglas obtained a timber concession from the province contingent upon the forming of a company and erecting of a mill to manufacture pulp and paper at Sault Ste. Marie. The Lake Superior Corporation was formed and in 1896 the actual operation of the pulp mill known as the Sault Ste. Marie Pulp and Sulphite Co. commenced production of groundwood pulp.⁴⁴.

The original concession given to the new company "consisted of 50 square miles of unoccupied Crown Land on one or more rivers draining into Lake Superior west of Sault Ste. Marie, and lying within three and one half miles of the river or rivers. Cutting could also be done along the shore of the Lake within the same stipulated distance of the water. Rights to cut spruce, poplar, tamarac, and banksiana or jackpine were granted, but areas containing patches of pine were specifically excluded."⁴⁵ A further right granted that was to be very important in determining future cutting limits was the permission to cut any areas mutually agreed upon by the Crown Timber Agent and the Company, provided that not less than one twenty-first part of the entire cut came from the concession in any one year.

In 1911, Lake Superior Paper Co. Ltd. took over the Sault Ste. Marie Pulp and Sulphite Co. and on March 1st of that year came to an agreement with the Algoma Central Railway which gave the company the rights to pulpwood on lands to be granted to the railway by the Ontario government. The lease is for 99 years and still holds even on that portion of the grant that has been returned to the government for back taxes.⁴⁶.

In 1913, the Spanish River Pulp and Paper Mills gained controlling interest in Lake Superior Paper, yet did not change the latter's name. At this time the company was cutting along the Goulais, Chippewa, and Batchawana Rivers, and on A.C.R. land close to the Sault.

The concession gradually increased in size as Lake Superior Paper made liberal use of the right to cut any land agreed to by the Crown Timber Agent and themselves so long as they cut at least one twenty-first of the concession annually. The purpose of the conditional clause was to prevent the paper company from tying up too great an area of land, but it is interesting to note the government's lack of concern about forest management, as the cycle here would be every 21 years as opposed to most modern cycles of 100 years. It is only many years later (1952, Crown Timber Act) as the government and pulp companies began to realize that resources were not unlimited that a forest management program was initiated.

By 1917, however, the Company was claiming the rights to all rivers draining into Lake Superior west of Sault Ste. Marie in Ontario. The second part of the original concession was open-ended enough that such a position could be maintained provided that the conditional clause of cutting one twenty-first of the concession was maintained. In the public interest the government redrew the concession such that the border of the Pic River watershed became the western boundary. In 1934 the Black watershed was removed and in 1954 the concession was reduced to its present size.⁴⁷

On August 1, 1928, Abitibi Power and Paper Co. Ltd. took over the Spanish River Pulp and Paper Mills Ltd. With the decline of the paper market during the depression there was no cutting from 1931-34. When cutting operations resumed in 1934-35, the areas of the Agawa River and lower Michipicoten and Magpie Rivers were worked, and in 1936 cutting commenced in the Manitouwik Lake district. "Up until 1937 some wood was taken from the Nicholson area on the C.P.R. east of the A.C.R."⁴⁸ This would have been cut by Austin Lumber under contract. In 1938, Agawa operations were closed and by 1940 all the above except the Magpie area were closed.

In 1937 Abitibi opened a salvage operation of a 1936 burn in the Hayward Lake area. The supply depot was at Herrick on the C.P.R. In the one year of this operation 47,158 cords of pulpwood were removed, some 30,000 cords of it being burned trees.⁴⁹

The Regan depot on the C.P.R. was opened in 1941 with the first cutting beginning in the fall of 1942 at the north end of White Lake. As headquarters of Abitibi's operations, Regan became a very busy place with all supplies, men, horses, and machinery passing through here on the way to the logging camps. The only connection with major centres like the Sault, Sudbury, and the Lakehead was the railway. At the peak of operations in the early 1950's there were over 50 buildings at the site. Residences for the officers of the company, bunkhouses for boatmen and workers, a large warehouse, a freight shed, garage, laundry, power plant, saw mill, cookery, hospital and a small school were among the structures erected.

All the tugs and workboats operated from Regan. At the peak of operations there were three tugs and many alligators, winch boats, warpers, and numerous small wooden craft. Some of the names of these boats were Pokei, Moberit, Regan, Radville, Boomalong, Esnagi, and Rocket. It took quite a fleet to keep the camps north of White Lake supplied and to haul the wood down White Lake to the head of White River for their journey to Lake Superior. The camps were supplied by 2 scows and 2 LST's (landing craft), the latter having been bought from the government. The scows were towed by tugs, the LST's being self-propelled. During the winter tote sleds were hauled on the lake, at first by horses but later by tractors and trucks. Supplying the camps during freeze-up and break-up was a touchy operation. Boats were kept continuously running up and down White Lake in late October and early November to delay freeze-up as much as possible. During the period between freeze-up and the time when the lake became usable as a road, a tote road up the eastern shore was used. It commenced at Regan and passed through Marie and Rowe Lake camps, through Camp 22 on Clay Bay, and crossed the Shabotik about a half mile west of Camp 32. About halfway between the Shabotik River and Camp 23 at the mouth of Pickle Creek, the road split, continuing west to Camps 20 and 23 and north to Camp 24 and Lower McGill Camp. The bridge across the Shabotik River was an interesting structure. It consisted of seven cables $1\frac{1}{2}$ " in diameter stretched between cedar logs which were buried deep along the shore. Logs were laid across the cables to permit vehicular traffic. The bridge was used from the mid - 1940's until 1952, when several cables snapped under a heavy load. 50 . As Abitibi was finished logging the area at that time no attempt was made to repair the bridge.

The first camps in operation in the White Lake area were: Camp 20 at the top of North Bay; Camp 22 east of Clay Bay; and Camp 23, north of Shabotik Bay on Pickle Creek. These three camps were in operation in the fall of 1942 and cut through the winter into 1943. The system of denoting a camp was usually by number, by location (lake or river), or by the name of the foreman. Numbers were given to camps as they opened in succession. Note that in the Regan area there are Camps 20, 22, 23, 24, 25. Camp 21 would be on one of Abitibi's other limits, probably in the Manitowik or Magpie area. Many camps were known by the foreman's last name (i.e. Lampi's camp, run by Charlie Lampi), or the location of the camp (i.e. Olga Lake Camp).

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In driving the wood to Lake Superior, winch boats pulling rafts or more often the wind and current, moved the logs across small lakes. On White Lake, Abitibi had diesel tugs and many small work boats that it used to pull the rafts down from Shabotik Bay where the logs were boomed. A boat would leave the "banding area" where the crews stayed in a tent camp in White Lake Narrows and pick up a raft at Graveyard point about an hour later and proceed at one mile an hour down the lake. The crews of tugs slept on board (3 on day shift, 2 on nights) and therefore only returned to shore (Regan) for fuel. The smaller boats tied their booms up to an island (Tent or Rock Bolt Islands) and returned to the banding area to change crews. Small boats helped 'guide' the booms through the Narrows, cables (usually 2, sometimes 3) being stretched across the raft to keep it narrow. It took 24 hours to take a raft from Graveyard Point to the C.P.R. bridge where they were spilled, the boom logs being returned to Boomstick Island opposite Regan, from which place when 8 or 10 booms had been gathered, they were returned to Graveyard Point by one of the larger tugs. A raft consisted of seventy spruce boom logs.51. held together by end chains. Spruce boom logs were cut in the spring, two strips of bark being peeled off. For preservative purposes, the logs were left to sit in the water all summer and were completely peeled the next spring for use in the drives. The last river drives in this area took place in 1964. The wood was again boomed at the mouth of the White River and towed the 200 miles to Sault Ste. Marie by the tugs 'Abitibi and 'Magpie'. The booms used on Lake Superior were of Sitka Spruce 30" in diameter and 20' long, connected by 1 1/8" diameter chains 13' long.52. There were 400 logs in two strings around each raft and with no wind or a favourable wind the rate of progress was 1 mile/hour. There were 10,000 - 14,000 cords per raft, 53. causing quite a mess on the shoreline when spilled in heavy seas.

The concrete dam at the head of the lower White River was constructed in 1948 to alleviate the congestion of logs at Umbata Falls.54. Abitibi cut 8' rough pulp and therefore needed more water than Ontario Paper, who cut 4' rough, to float the logs past certain obstacles. Wood was sluiced through from eight in the morning until four in the afternoon at which time a stop log was placed across the gate to prevent more pulp from going down, while the flow of water remained uninhibited.

Abitibi also made use of P.O.W.'s as cutters to allay the labour shortage caused by the war. Some 300 P.O.W.'s were in the camps in the winter of 1943-44. 55. They had a quota (1 cord cut and piled) to meet every day and were given a 50¢/day credit to buy what they wished from the van. Although most prisoners had been soldiers, some were off ships that had been seized when war was declared. Some of these were avid sailors, who built dugouts and sailed on Clay Bay during their off days in the fall and spring. 56.

Abitibi logged in the Regan area until 1964, the headquarters having shifted in 1960 to Copper Lake Camp from Regan. In recent years the operation has been mechanized, all wood being hauled either to the Shabotik River or Regan landing on White Lake by truck. In 1965, cutting was started out of Camp No. 1 at Cotton Lake in Obatanga Provincial Park. This camp was mainly of portable trailers with a few of the old frame buildings from Copper Lake. Operations ceased here in the summer of 1971 and are at present being continued at Camp 101 near Hawk Junction.

Logging operations prior to the mid 1950's depended on great quantities of manpower with the aid of nature (snow roads and torrential rivers) and that dependable beast of burden, the horse. The seasonal aspect of logging began to disappear in the mid-fifties and by 1960, full year operations were the rule rather than the exception. Prior to full year operations the construction of log camps and haul roads commenced in August, with actual cutting and skidding beginning in September and continuing until sometime between Christmas and February when the emphasis turned to hauling the cut logs by horse and sleigh to the frozen creeks, rivers, and lakes. There the logs sat until break-up around the middle of May when they were driven down the rivers to Lake Superior. Without the aid of nature - snow and ice packed to make excellent roads for hauling by sleigh and the torrential rivers and streams in May and June which provided an efficient mode of transportation - this area would never have been logged. The cost of transporting pulpwood via road and rail was prohibitive in an age when labour was cheap and mechanization, in its infancy, very expensive in comparison with today's standards.

Buck saws (Swede saws) and cross-cut saws were used to do all the cutting in the era of the log camps. Each cutter was given a strip sixty feet wide adjacent to a haul road and of varying length (usually $\frac{1}{4}$ to $\frac{1}{2}$ mile in depth) ⁽⁵⁷⁾ to cut. If he was clear cutting, as in a black spruce swamp, a cutter would be required to 'swamp' out a road down the centre of the strip as he worked in. This involved cutting all stumps very low so a sleigh could be pulled along the road without being 'hung-up'. If the snow was deep, he would pack it down (as high stumps meant a loss of wood) and depending on the size of the tree, might make a notch with an axe on the side to which he wished the tree felled. There was quite an art to felling a tree where desired, not only with respect to safety but also with respect to efficiency as cutters were paid on a piecework basis. Once the tree was felled, it was limbed with an axe, the top cut off (usually at 3" - 4" diameter) and if the method of cutting was cut and pile, the cutter would then buck up the tree into 4 or 8 foot logs as required. These logs would be piled by the cutter in piles of roughly one cord along the swamped out road. The cutter could average 1.5 to 2 cords a day at approximately \$3.00/cord in 1943. ⁽⁵⁸⁾ From this it was required that he pay board of .95¢ a day.

If a cutter were doing more selective cutting (the pulp companies took only spruce and balsam until the late 1940's when they began the utilization of a little jackpine) he would work with a teamster and horse which would skid the logs (topped, limbed, and bucked into 16' lengths) from the bush to a skidway near the haul road where they would be bucked again and piled for hauling. With extremely large white spruce a cross-cut saw was used in preference to a Swede saw as the latter was not long enough to permit the teeth to take the sawdust out of the cut. Austin Lumber in cutting larger logs for the sawmill made more extensive use of cross-cut than buck saws. Horses skidded singly, a well-trained horse being left to follow the trail to the skidway himself, the teamster merely hooking chains to the logs to be skidded and the roller at the skidway unhooking them and sending the horse back. The horse wore a harness which had a log attached behind it (called a whiffle tree or single tree), with chains dangling to which the logs to be skidded were attached.

In studies done in 1943 by the Pulp and Paper Research Institute of Canada it was found that a cutter spent an average of 0.95 hours per working day walking to and from work, and 1.28 hours for meals and snacks while in the bush. 59. In a four foot wood operation a cutter used a saw about 40% of the time - for the felling cut, marking, and bucking. The rest of the time he was notching and limbing, with an axe, piling, or clearing away brush. Besides skill at notching and cutting at a slight downward angle into the notch, a knowledge of how the bridge formed between the area notched and that cut by the saw when the tree cracks affects the falling tree was essential. The 'bridge' in breaking tends to act as a hinge and guide the falling tree at a right angle to the undercut, if the bridge is uniform in width, or 'draw' the tree to that side on which the bridge is considerably wider. 60. Another rule was never try to fell a tree into the wind.

Of utmost importance to the cutter was the sharpness and condition of his tools. The company supplied the saw frame and one blade per month, 61. However the cutter was required to file his own blade, and were he inexperienced, he was better off to get one of the more experienced hands to do it for him as sharpening a Swede saw requires considerable skill. The grindstone outside the blacksmith's shop (or in the washrooms in winter so that water in bottom container won't freeze) served to keep axes in trim. Should a cutter break a blade or any other equipment, this was taken off his wages. Gas powdered chain saws began to appear shortly after the war and were in use in the early 1950's, although Abitibi still had some buck saw cutters until 1956 as early model chain saws were heavy, hard to start, and broke down often.

Once the wood had been cut and piled the task of hauling it to the rivers and lakes for the spring drive began. This was done by horse and sleigh in early years with trucks and tractors used in later years to haul sleighs in tandem over great distance. Abitibi owned 50 or 60 horses that it kept stationed in the Regan area all year. 62. Ontario Paper similarly owned horses that it kept pastured near Camp 36 and the site of the recent Rous Lake depression, when not in use. These horses were used in the hauling, skidding and any toting that had to be done. In December and January car loads of horses (Clydes, Percherons, Belgians were brought in from the west by rail for the haul. These horses were rented from D.V. Rumsey, who also ran a general store in White River. He had an agent in the west who picked up suitable horses and shipped them east. On such horse dealer was the late Senator Horner who built a personal fortune running a livery stable in Saskatchewan and renting horses to the logging companies in Ontario during the winters when they weren't needed on the farms. 63. A deposit of \$100. was placed on each horse, refundable if the horse was returned in good condition, and a rental of \$30. per month was charged. 64. The companies supplied hay and oats (in the late 1930's it cost 77¢/day to feed a horse as compared with 61¢ to feed a man). 65. and also bought harness equipment. Every large camp had a boss for every 30 horses, a teamster being responsible for a team of horses in the bush. The horses were usually well-cared for, however often got an infection or cold which caused a stoppage of the bladder known as blackwater. The horse had to be prevented from lying down or it would die. A medicine called 'sweet-nitre' which came in tall brown bottles, looked like syrup and usually proved effective, was given to the sick horse. It was not beyond the barn boss to remedy his own ills with a few swigs of 'sweet-nitre' either. 66. The horses were not to be ridden or run, and any teamster caught doing this was quickly dismissed. During the hauling season there was an O.P.P. constable from the Schreiber detachment going continuously from camp to camp checking the horses. There was one incident in the Pickle Lake Camp where the O.P.P. constable found that some of the horses had been beaten. The camp foreman had an argument with the officer, and the company, on hearing of the incident promptly replaced the foreman. 67. In the bush, the teamster was boss of his horses. A young strip boss, trying to make a name for himself, objected to a teamster resting his horses during a haul and brushed them with the back of his axe to get them going. The teamster jumped down and beat the strip boss so badly that he had to be carried back to camp. The camp foreman had no sympathy for the strip boss and the latter left camp shortly thereafter in humiliation. 68.

The sleighs used in hauling pulpwood were two-bobbed sleds, varying in rack design depending on whether they were to carry 4', or 8' logs. Those used by Austin Lumber for hauling 16' and 17' logs were the same as 8' pulp sleds except they had no racks, the logs being held on by chains. Most of the bobs were constructed by the logging companies themselves, although a few were bought from a company in Winnipeg. These differed from domestic sleighs in that they had metal instead of wooden knees (the knees held in the bench to the runners). A Winnipeg sleigh cost \$180. for two bobs in 1948. 69. The bobs and tongues were made of oak or yellow birch the racks of tamarac or spruce. The steel for metal runners came from Algoma Steel and was shaped by the company blacksmiths who forged all the hardware for the sleighs. Small single bobbed sleighs called drays or sloops were often used for hauling on swamped roads or as tote sleds.

The sleighs were loaded by hand in the bush, two men being adequate to load 4' and 8' sleds and five man gangs being used by Austin Lumber for 16' logs. In earlier years sleighs were hauled from the bush to the rivers by horse, but by the mid 1940's it was customary to haul them to a marshalling area from which 4 to 8 sleighs were hooked in tandem and hauled by a truck or tractor. By 1948 wood was hauled from the bush in sleighs and then transferred to truck bodies for the rest of the haul. Ontario Paper used metal cranes for the transfer. Abitibi used jammers, an A-frame of spruce logs 30' high mounted on skids. A small shack on the skids housed a winch which activated cables to lift the pulp from the sleighs to the trucks. Jammers were replaced by metal cranes in 1957. Sleigh hauling was phased out in the mid 1950's although horses were used in skidding until 1962.

A great deal of road preparation was required for the sleigh hauls. Steep hills had to be avoided and 'go-back' roads had to be constructed to prevent delays through traffic jams. After a snowfall the roads were ploughed by either factory - made Otaco ploughs (from Pembroke) or home-made V-ploughs. The road was then rolled by a large tin-covered wooden roller that was pulled by horses and the ruts that the runners were to follow were iced by water dripped from water tanks.

The water tank sleds were just great wooden boxes on two bobs which could be pulled from either end. Horses were used on the smaller water sleds but a tractor was needed to haul the larger ones. The tanks were originally loaded by barrels which were pulled up the side of the sled by a cable attached to an A-frame on top of the tank. The barrels had a flap in the bottom to allow the barrel to sink in the water. By 1944 pumps were being used to fill the tanks. A coat of ice would form on the inside of the water box to make it water-tight, but when this got too thick it was reduced by placing a kerosene lamp inside of the empty tank. The water tanks in this area did not regularly carry stoves to keep the water from freezing in the tank.

Hay or sand was placed on the downward slopes of hills to help brake the sleighs. During hauling season there was an average of one man per mile to make sure the roads were kept in shape. These 'road monkeys' or 'chickadees' also did the bulk of the road maintenance at night or on Sundays when there was no hauling. The name 'chickadees' comes from the fact that the men had to remove horse dung from the roads as it interfered with icing and hence were named after the birds that always appear around horse waste.70.

Preparation for the river drive in May began long before the break-up with the construction of dams to facilitate the floatation of logs on smaller rivers and streams. Most dams were built in the late summer and early fall when water levels are at their lowest. Ontario Paper and Austin Lumber made more extensive use of dams due to the fact that they were driving on smaller creeks and rivers than Abitibi, which was fortunate to have easy access to large rivers such as the Shabotik and the White.

Most dams in this area were of log construction in a crib style. Those not filled with rock usually had logs lying at a 45 degree angle (called sheathing) to the upstream side of the dam. These logs were placed almost an equal distance into the ground as they extended above the water, being covered at the base by woven balsam fir boughs before being back filled.71. The boughs prevented the seepage of water and gravel under the crib which would gradually undermine the dam and wash it away. Woven fir boughs were found more effective than cloth or any other material for this purpose. The smaller dams had a single gate which was closed by stop logs and an apron on the downstream side of the dam to prevent jams.

Men were stationed at various points along the river with pike poles to break up jams and keep logs off the shore. During a drive of the White River, one man was missing from the supper table. Two men were sent to find him and spotted him sitting on a 'barber chair' (stump which when cut left one side so as to form the back of a chair) with his pike pole extending from his lap. He had an eerie smile on his face but failed to answer their calls. He had suffered a heart attack.72.

The tent camps used in early days of driving were replaced in later years by permanent frame camps. Boats called pointers (at first rowed and later fitted with outboard motors) were used on the river to break up jams. 'Pointers' (so called because of the bow and stern) had a flat bottom and shallow draft which made them very stable. Dynamite, and hooks called 'jam dogs' which could be attached to a winch, were used to break up jams. In later years communication between crews working on the river was maintained by radio so that jams could be quickly disposed of. Between 3%-5% of the logs were lost due to sinkage or damage in a drive.73. Men working on the drive averaged \$6.00/day in 1946 for a 12 hour day.74.

In river driving it was necessary for companies to mark their logs in case they were lost or mixed with someone else's. This was done with a stamping hammer when the logs were being scaled. Austin's mark was A & N, Ontario Paper's O.P., and Abitibi's was called a 'snowflake' - *. Wood which Austin passed on to Abitibi as pulp was marked with an X.

Labour Force

Because of the seasonal nature of logging in the forties, the bulk of the labour force was migrant workers. Most companies had hiring agents in the larger centres - the Sault, Sudbury, the Lakehead, and Montreal. Early in September the camps began to fill up as the cutting commenced. Being broke was no problem as the company would pay your rail ticket to their depot, to be taken off your wages at a later date. Almost like being indentured. One was supposed to be 16 years of age before hiring on however no one was particular. George Mitchell came from a farm near Prince Albert, Saskatchewan to work in the Regan area camps at age 14. A great many workers, particularly those of Anglo-Saxon and Central European background spent their spring and summer months toiling on farms out west during the 1930's and 1940's. Most of the Scandinavians hired came from the Lakehead - Sault - Sudbury areas while those of French heritage came almost equally from Quebec and New Brunswick. An ethnic breakdown of Abitibi's labour force for the 1953-54 season shows:

Scandinavians	27.7%
French Canadians	25.3%
English Canadians	20.8%
Central Europeans	14.1%
Indians	7.5%
Balts	4.6%
	.75.

The peak number of workers would be in camp during cutting in the fall. In the fall of 1951 Abitibi had 1,175 men in the Regan area.76. Turnover was high, and it was a common joke to refer to 3 crews operating in each camp - one coming, one going, and one working. Production per man was low as many men never acquired any skill in logging techniques. All three companies that operated here in the 1940's experienced the same problem, especially after the war when jobs were plentiful and fewer people had to work in the logging camps to make a living. At Christmas, the numbers of men needed for hauling being less than that required for cutting, many men left the camps.

At the end of March when the haul was finished, the camps closed and many workers headed west to the farms or back to the cities. A certain number of men returned in mid-May to work until the end of June on the drive. A small core was kept on all summer with camp and road construction. "Migrant labour, comprised of men who worked on Prairie farms during the summer, fall and who moved to the logging camps in the winter, provided the essential employment force on which the logging camps of central and northwestern Ontario depended from the turn of the century until about 1950. In the ten years or so following the end of World War II many a woods manager in Ontario worried about his labour supply from post-harvest operations on the prairie and as this supply diminished to a trickle, spoke strongly of the need for increased immigration from central Europe to provide the type of workmen willing to work in the camps. The labour shortage foreseen by these managers never occurred because mechanical power replaced muscle power to an extent compensating for reduced availability of labour."77.

After a 1946 strike in the woodland operations in Ontario most companies employed union labourers. Where the rate for cutting and piling a cord of 8' rough wood was \$2.85 in 1943, 78, it had increased to \$4.35 in 1948 and to \$8.50 in 1963. 79. Coincident with the dramatic rise in wages has been a rise in productivity. "In the 1951-52 season, for example, it required 1.192 man days of woods labour to produce and deliver one cord of wood, at the camp level. By the 1961-62 season this requirement had been reduced by 46 per cent to .640 man days. This decline in man power requirement can be attributed in part to the power saw but to an even greater extent to changes in operating techniques which reduced manhandling of wood - the change from cut and pile to cut and skid methods, the production of longer length wood and the forwarding and loading of wood by mechanical means are in this category. 80.

Life-style

The lumberjack's day began about 5:30 a.m. when he rolled out of his bunk to wash in the washhouse situated between two bunkhouses. If he desired hot water he heated it over a wood stove and poured it into a porcelain pan. No such thing as hot and cold running water.

The gong sounded breakfast at 6:15 bringing the men forth from the bunkhouses to the dining hall where pans of hot food waited on the tables. The cooks and cooks had been up since 4 a.m. getting the breakfast ready and putting out the food to be packed in lunches. At breakfast one could have porridge or cold cereal, eggs, pancakes, potatoes, sausages, bacon, cold meat, toast, canned juice, tea, coffee, and powdered milk if desired. Every morning there was a similar variety as the logging companies realized that a man works in proportion to how he eats. Board was provided for those on daily wage until 1946-47 when the unions came. Those on piecework paid .95¢/day in 1943-45. 81.

Immediately after breakfast the cutters and anyone who would not be back to camp for the day packed a lunch. By 6:45 they were on their way to the bush, usually walking the distance to their strip (which could be up to $1\frac{1}{2}$ to 2 miles), buck saw over the shoulder, axe in one hand, lunch pail in the other. In the bush all day with temperatures often - 30 degrees to -40 degrees great attention had to be paid to warm clothing. If one were too hot, clothing could be removed, however, if one were cold, it was a long walk back to camp. Longjohns, 2 pair of wool pants and at least two warm shirts formed the foundation. Two pair of woolen socks and an insole fitted inside leather boots or rubber boots with leather tops to prevent frost bitten toes. A lined canvas parka was worn with woolen mitts placed inside leather ones which came well up the sleeve to prevent snow from getting in. Gloves were not nearly as warm as mitts and were seldom worn. In the 1940's there was little safety consciousness and hard hats were not worn. A fur cap or toque sufficed.

The bush worker was free to take breaks whenever he wished, usually taking his lunch at around noon, several cutters on adjoining strips getting together to build a fire for warmth and to heat tea. Lunches in the bush consisted of bread (made by cooks in each camp), salt pork, ham, beef, garlic sausage, and bologna, often made into sandwiches. For dessert one had canned fruit, molasses, and cookies or cake. Those who were fortunate enough to get back to camp for lunch got a hot meal-soup, and something a little lighter than supper such as beans and cold meat.

The men seldom returned to camp before 5:30 or 6 p.m., supper being at 6:15. Supper was the big meal of the day, with potatoes and other vegetables, and roast beef or pork as the meat dish. On Friday, fish was always served at supper. Pies were plentiful and popular for dessert. There was a rule that there was no talking in the cookery as the cooks wished to clean up as quickly as possible. One evening at supper a rather large man was asked to refrain from talking by the cook in Camp 24 (Abitibi), Mrs. Ranta. The next morning this man persisted in talking and at supper Mrs. Ranta sent one of the cooks to ask him to be silent. He became quite indignant and when he rose from the table to articulate his objection the camp foreman, Pete Mosey, interceded and asked the man to appear at the office after supper. He was not at the breakfast table next morning. 82.

After supper the men returned to the bunkhouses. Recreation halls came only with the advent of portable frame camps in 1948. Various card games, -cribage and one called 'Regan rummy' being quite popular, helped to pass the time. The occasional newspaper found its way into the camps and in 1948, Frontier College sent magazines to the camps. This practice was continued until 1955. There were gas generators which supplied electricity in most of the camps in the 1940's but a coal oil lantern often came in handy. Movies were shown once a week in each Abitibi camp in the cookery by an operator who carried the equipment (an R.C.A. Victor 16 mm projector) around with supply sleighs. The films were rented from Sawburn Films in Toronto, westerns, Fibber McGee and Molly, and such extravaganzas as "The Road to Utopia" starring Bob Hope, Bing Crosby, and Dorothy Lamour being very popular. 83. Each winter a jeweller from the Sault visited the camps selling watches, rings, tie clips, belts, etc. If the men had not the cash to pay, they could get a cash order from the camp clerk to cover any purchases over \$10.00 in value. The cash order was converted into a cheque at Regan. Although alcohol was forbidden in the camps for reasons of maintaining order, some of the travelling salesmen did quite a business in bottled goods. The closest liquor stores were in Peninsula (Marathon) and Chapleau. Many thirsty lumberjacks caught the train to Peninsula from Hemlo or Heron Bay and walked the distance back to Heron Bay (8 miles) loaded in one fashion or another. For those stationed at Hemlo, Regan, and Bertrand it was quite common to hop the way freight to Heron Bay or White River and after an evening in the Nor Shore Hotel or the Green Gables, return by No. 1 or 2, the C.P.R. passenger trains. The train ride was 45¢ each way, beer being 25¢ a bottle. 84.

The logging companies bought goods from wholesalers in Toronto, Sault Ste. Marie, and the Lakehead, and had them shipped by rail to their depots at Regan, Hemlo, and White River to be redistributed from warehouses at these centres. Meat and eggs were bought from Swift's and Canada Packers, quarters of beef being wrapped in cloth and paper and butchered meat being rapped in paper and shipped in wooden boxes. Camps did not employ butchers, that job being done by the cook or second cooks. Vegetables, such as potatoes were bought from National and Western Grocers and shipped to the depots by the carload. Many vegetables such as peas, beans, etc. were bought in cans and all fruit was canned until 1947 when some fresh fruit began to appear, particularly on special occasions.⁸⁵ Seventy pound boxes of dried prunes and apricots were bought and canned juice was supplemented by tea, coffee, and powdered milk, which was bought in one hundred pound drums. Fresh milk appeared in Abitibi's camps for the first time in 1957.⁸⁶ Very little company business was done with retailers such as Spadoni's or D.V. Rumsey in White River.

Under the Public Health Act, Ontario Regulations 14/44, it was required that employers of labour in camps in territorial districts must provide medical care for their employees. Both Ontario Paper and Abitibi had company doctors, in the latter case .50¢/month was deducted from employee's wages to cover medical expenses.⁸⁷ In a pre-company doctor year (probably 1943) in a Regan area camp a Finnish cutter decided a visit to the doctor was necessary after a bottle of whiskey failed to allay his pains. The closest doctor was at Peninsula. Arriving there in the early evening, the Finn and a couple of friends decided to adjourn to the hotel, the doctor being out on call. Well lubricated, they returned to the doctor's quarters around midnight. The Finn, being in a somewhat less than rational state, felt that the doctor was shirking his duties and assaulted the doctor, for which effort he ended in jail. Tragically, he died that night in his cell of a heart attack, not having received the medical attention he had come to Peninsula to get.⁸⁸

The men worked a six day week as it was not permitted to work the horses on Sundays. Cooks, barn bosses and watchmen worked seven days a week. Many of the cutters would file saws and axes or check their strips in preparation for Monday morning. On Sundays the horses were allowed out of the barns to roam around the camps. The story is told of one teamster who although a good worker was cross with his horses. To save the embarrassment of not having his horses come when he called them on Sundays when all the men were sitting around camp, he got the blacksmith to round up his team and take them to the barn.⁸⁹

In retrospect the era of the log camps seems romantic and sadness is felt that a life style is gone, never to be repeated. The ringing of axes, the sounds of falling trees, the snorting of horses as they pulled sleighs through the silent snow conjure up beautiful images in the mind. On the other hand the frustrations of isolation, the hard physical manhandling of wood, the dangers of a fast flowing river in spring, the cold and the pay serve to juxtapose a hard and brutal life to the serenity of this mellow land. For few people are the memories of those past days all black and white, there having been many colourful moments in the spectrum. For many the transience caused by the seasonal nature of logging placated the spirit, and brought a longing for the bush life every fall. To others camp life provided an escape from the unreality of civilization.

For those who were permanent employees of logging companies and who lived in Hemlo, Heron Bay, or Regan the year round life in the north took on a completely different perspective. Life in the camps had a transience about it, whereas those in the permanent towns experienced the community spirit found in all fairly isolated small towns. In Heron Bay South there were bridge nights, curling in one of the horse barns, billiards in the basement of the staff house, broomball games on the Tremblays' rink, hockey and baseball games with White River, and the annual Mardi Gras dance. One kept in touch with the outside world by reading the papers that arrived daily by train. A small chalet in which one could enjoy a lunch of beans and buns was built between the Pic and Black Rivers for avid skiers.90. The summers were passed swimming, fishing, and berry-picking - with a bottle of Mc Curdy's handy of course! A shopping trip to Chapples in Peninsula sufficed until one was able to load the family car on a flatbed and get off at some larger centre on the C.P.R. for a holiday. For certain this life was pleasant and had few of the drawbacks of camp life.

The camps of the late 1930's and early 1940's were of log cabin style. Unpeeled logs (camps were constructed to serve for short duration, maximum of 4 years) were notched to fit together to form the walls, the roofing being either of sawn lumber, (there were several portable mills in the area), or small logs covered with tar paper and held down by lathes. Tar was shipped in containers the size of soup tins. The floors and doors were of sawn lumber and the inside of the walls was often covered with heavy paper or "ten-test" for insulation, although in many camps the insides of the logs were just peeled. The spaces between logs were chinked with oakum, moss, or old mattress filling. Windows (usually 4 or 6 small panes per window), were double and placed in the walls or gables. Barns or stables were of the same type of construction save that there were no windows and the floors and stalls were of peeled logs. The barns were not chinked with as much care as the cabins for human habitation, small sticks being tacked on the outside between the logs. The bunkhouses and cabins, the dimensions of which were usually determined by the size of the trees at hand, were heated by barrel-type stoves which burned green birch. Most camps had electricity supplied by diesel generators.

The cookery was usually the largest single building in the camp, often being required to serve 180 men at a sitting. Meals were prepared by the cook (often a Finnish lady) and the second cooks over wood stoves, the four or five long tables in the cookery being set and served by the cookees. Wood and water were supplied to the cookery by a man called the bull cook. He also did most of the cleaning in the cookery.

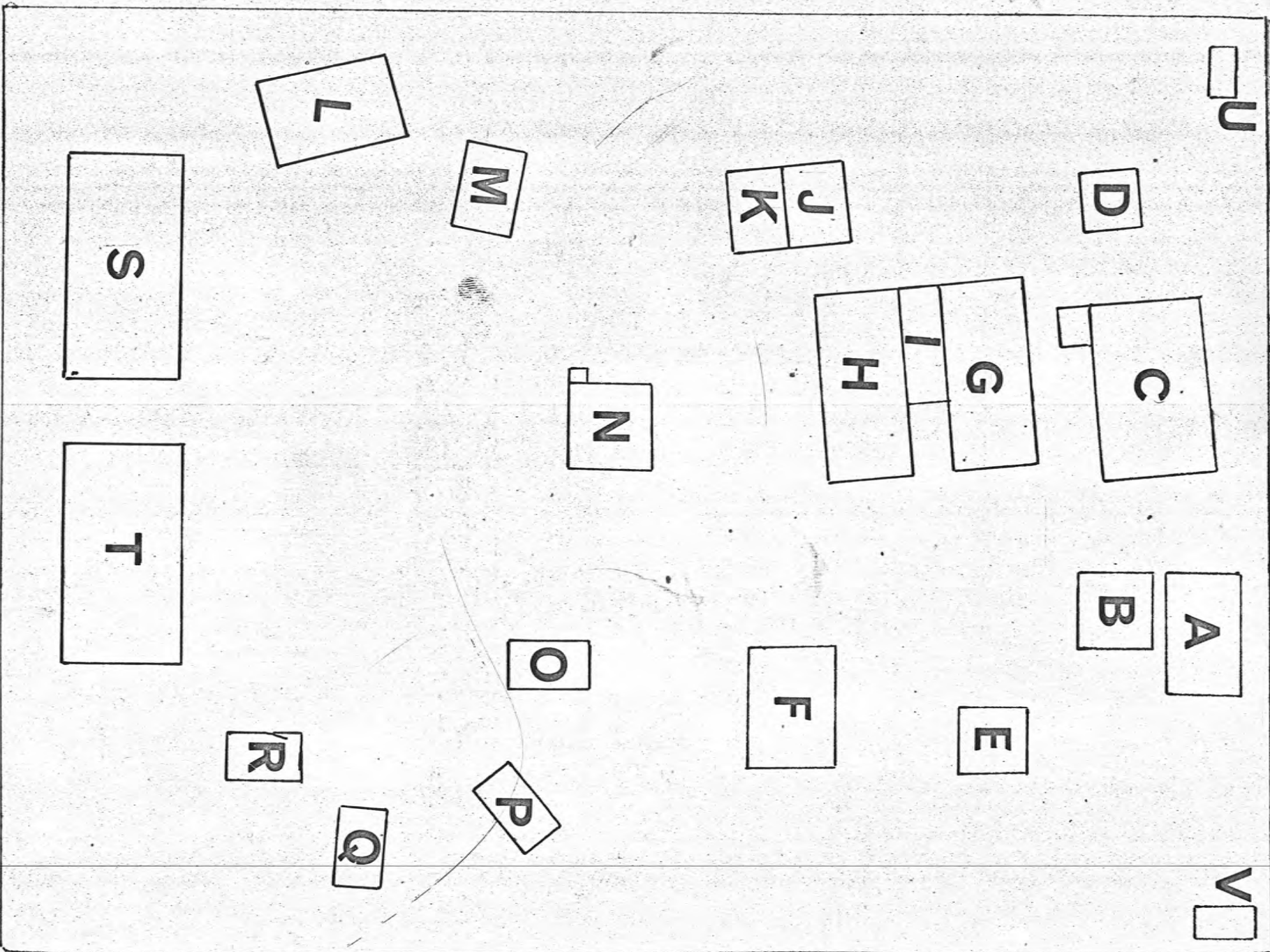
The meat houses were rather unique structures. As the camps operated in the fall and winter, the elements provided refrigeration. A long thaw in January could be disastrous as meat hung in a small building anywhere from 12 to 20 feet square covered by a cupola-like roof with a vent at the top. The walls were partially covered by lumber with spaces covered only with wire mesh to allow for circulation of air. Occasionally a hungry bear would stop by for a snack. Most camps had a root cellar for the storage of vegetables.

Another structure prominent in the camps (due to the large number of Scandinavian employees) was the steam bath. An outer room was provided to change in and inside the bath itself there was a rack (a stair-like affair) to sit on and a large barrel stove almost completely covered with small round rocks upon which one threw water. One could heat a pan of water in the washhouse but there was usually no other form of bath in the camps. Camp 24, to be discussed later, was one of the few exceptions. Sanitation facilities were unheated outhouses, usually 8 seats per house. How pleasant at -40°!!

One of the more important buildings in every camp of any size was the blacksmith's shop with its forge. The large number of horses used in logging operations were shod by the smith's and any metal work required such as that on the sleighs, the hardware on doors, and many tools, was handwrought by these hardy men.

The construction of camps was usually conducted by a crew of about twenty men in August. Sites near water, preferably a large lake or river, although occasionally only a stream (as in the case of Camp 24) were preferred. A sand or gravel area was sought although in as much as the early camps operated only in the fall and winter there was not too much care taken about soil type of sites. The last log camps were built by Ontario Paper and Abitibi in 1946 and 1947 respectively. Thereafter frame camps of sawn lumber were built on skids and towed about from one site to another.

A diagram of Abitibi's Camp 24, which operated from the fall of 1944 until the spring of 1948, accompanies this report. The camp plan and dimensions of buildings were taken from an aerial photograph and may be slightly inaccurate. All the other information was supplied by George Mitchell who worked out of this camp for a number of years. Each building will be discussed briefly and may be located by corresponding letter on the diagram.



- A-(20' x 32') - Cookes quarters; unpeeled log structure; ten-test, painted light green on the inside walls; three partitions of 2" x 4" and ten-test; basins for washing facilities, 10 gallon barrel to heat water over stove, which was located in centre of building; seven metal beds and mattress; occupied by 4 Nolan sisters, Thelma King, and 2 others.
- B-(20' x 20') - Camp office; camp foreman (Pete Mosey, later Joe Lefebvre) and clerk (Dave Leith) stayed in back; room in back partitioned by curtain, contained 2 beds and desk plus wash basin; counter desk, stove, and shelves for van in front office; shelves laden with shirts, pants, socks, cigarettes, etc. and usually boots and other articles on the floor.
- C-(32' x 48') - Cookery; cook (Mrs. Ranta) stayed in quarters just off kitchen (12' x 10') back part partitioned by counter, contained stoves, oven; 5 - 45 gallon drums for cold water, 2 - 45 gal. drums behind stoves with hot water; large stove near dining area door which always had 2 barrels of water on it; walls covered on inside with ten-test and painted light green; 2 sets of pillars to support roof in dining area; 3 long tables and one shorter one (all wood with moveable benches) and one small table for dirty dishes; porcelain dishes.
- D-(16' x 16') - meat house; of sawn lumber and wire mesh construction; counters along walls, many meat hooks and chopping block.
- E-(18' x 18') - strip bosses and scalers quarters; 5 occupants; metal beds; stove in middle; peeled log interior; small benches; Lumber floor and roof
George Stringer, Bill Robinson, John Kelly, Stewart Young, and 1 other.
- F-(24' x 32') - Bunkhouse; peeled log interior; stove in middle; 18 occupants; 18 metal beds; small benches; lumber floor.
- G and H (24' x 52') - Bunkhouses; peeled log interior built in 3 sections; support poles down middle; 1" x 6" on roof, 3 layers of tar paper fastened by lathes wooden bunks of 3" peeled poles, metal springs mattresses; lower bunk 12" from floor, upper 56" from floor (sawn lumber); bunks 34", 12" between each double bunk; 14 double bunks outside wall; 12 on inside wall; bench at foot of each bunk; 52 occupants per bunkhouse; 2 stoves, double elbow in pipe.
- I-(12' x 32') - Washhouse; stove in short end to heat water; tin sinks along walls; 2 - 45 gallon drums; peak of roof ran at 90 degrees to peak of roof in bunkhouses; 3 grindstones.
- J-(16' x 24') - 1000 gallon tank in ceiling heated by large wood stove covered in asbestos; 6 wooden shower stalls, big nozzles; tin sink along one wall; peeled log interior.

- K-(16' x 24') - Shed; counters around walls; 4 vices for sharpening buck saws; windows in gables.
- L-(24' x 36') - Garage; 3 large doors in long side; counter along back wall; peeled log floor; unpeeled walls.
- M-(16' x 24') - Generator house; 3 Shepard diesel engines; no windows; log floor
- N-(24' x 24') - Blacksmith's shop; large doors; lumber floor; forge against back wall; counters; coal bin adjacent.
- O-(12' x 20') - Driver's shack; 10 beds, metal; stove in middle.
- P-(12' x 20') - Tractor operators shack; 10 beds, metal.
- Q-(12' x 20') - Barn Boss' quarters; 6 beds.
- R-(12' x 20') - Harness storage shed.
- S & T(32' x 60') - Barns; unpeeled logs, 7 stalls per side in each barn; 2 stalls in T used for storage of oats; peeled log floor; troughs along walls; hay stored outside under tarps.
- U-(6' x 12') - Pump house; heated by stove; on bridge over creek.
- V-(8' x 16') - Privy; 8 seats

RECOMMENDATIONS for Exhibit and future steps

Of the two sites for a proposed logging exhibit in White Lake Park, site A has certain appealing factors. (1) It can convey an atmosphere of isolation which should be aimed for. (2) Authenticity is lent by the fact that the site is in and surrounded by a coniferous stand and is on a lake. The former allows room for expansion if so desired in the future. (3) It is close to the road to unit 4 and in the general direction of future development in the park. (4) Many of the trees in the stand can be used for construction of buildings.

Site B is 1) close to the road and amphitheatre, therefore central and within the interpretive unit.

2) it is flat land and has enough area for the initial exhibit, however lacks atmosphere and any room for expansion in the future.

Rather than reconstructing a complete camp such as Camp 24, which would make a lot of buildings repetitive and also make either proposed site overly crowded, it is suggested that 6 or 7 selected, yet typical buildings of the 1940's logging camps be constructed. Suggested buildings for reconstruction are: an H-type bunkhouse (with washroom in middle), a cookery, an office, a meat house, a steam bath, a blacksmith's shop, and a barn. The meat house might be copied from those still standing at Camp 24 or Ravine Lake Camp. There is a steam bath in Camp 34 (Atigameg Lake) that is in reasonably good condition. The office, cookery and bunkhouse could all be copied from Camp 24.

In the spring someone should be sent to Ravine Lake Camp, Camp 25, Cps. 22, 23, and 31 to collect as many small metal objects, such as axe heads, as can be seen before the grass grows in. In the summer, J.R.'s can be used to strip the buildings in these areas of hinges, door latches, etc. Extreme care must be taken in supervising J.R.'s that valuable objects are not destroyed or lost in the recovery operation. The reconstruction of camp buildings should be done by a carpenter or skilled craftsman. J.R.'s can assist with labour jobs. If any information is needed re: the inside of buildings, George Mitchell, Sid Olsson, or James Makarchuk would be knowledgeable and probably most willing to be of assistance.

With respect to the display of logging tools many of these should be purchased as many of those recovered are in poor condition. It will be possible to buy most of these items on southern Ontario or Quebec farms. Articles that should be displayed are buck saws and cross-cut saws, file for these, axes, grindstone (Kenshoe), pike poles, peavies, cant hooks, picaroons, hookeroons, jam dogs pulp hooks. There is no reason that variations of the same piece of equipment, such as pulp hooks, should not be displayed. The same is true of sleighs.

Perhaps the main area of effort and expense in early stages of the exhibit should be the restoration of sleighs and other major exhibit items. This will require a man who is experienced in such work and a full time helper. Those items which should be exhibited: water sleds, 8' pulp sled, 4' pulp sled, Otaco snow plough, road rollers, jammers, a couple of tote sleds, and a pointer. There is a possibility that James Makarchuk will know of someone to reconstruct these objects if Stan Zwerschowski is not re-hired.

Horse harness may be purchased or possibly picked up at Fritz Lake Camp (Map 13) in the Hornepayne area. This was a camp run by an Ontario Paper jobber and he (Olafson) should be contacted before any attempt is made to move the harness. Another thing to watch for are some cross-cut saws in a camp on Osawin Creek where Ontario Paper will be cutting this spring. Bob McLean said he would try and recover these for the exhibit. |||

I think the J.R.'s might be incorporated into this project. Not only can they be sent to take metal off the sleighs and buildings, but can also be sent on canoe trips in the Shabotik, upper White Lake, and Black River areas to look for old camps and artifacts.

Watersheds - Mikano, South Regan Camp, Flood Lake. These will have to be completely rebuilt.

Snowploughs - 1 Otaco plough at Kenshoe, 1 at Bouchard and 1 on 2nd road on right up Dump Lake Road. Another at South Regan camp. 1 good one can probably be made from these.

Jammers - If nothing else, booms of Copper Lake jammers should be cut down and pulleys detached. They will have to be rebuilt from scratch.

Road graders - There are 2 of these - 1 at Copper Lake behind jammers and 1 at Bouchard Lake. All that is of use are the metal attachments and blades.

INTERVIEWS

Albert Constantineau, mill foreman 1950's, Bertrand, Austin Lumber
Sid Olsson, mill foreman 1939 - 43, Bertrand, Austin Lumber
Herb Riley, warehouse man for Austin Lumber in White River, 1940's also
worked for D.V. Rumsey, horse dealer and general manager.

J. D. Brophy, Forester, Ontario Paper, Manitowadge.

Alvin Bell, Ontario Paper 1940's & 50's.

Billy Comeau, barn boss, Ontario Paper, 1940's.

James Makarchuk, Ontario Paper, Manitowadge.

Buddy Whent, former wife of late Ted Summers, Ontario Paper superintendent.

George Mitchell, cutter and handiman, Abitibi, 1944-60.

Lee Fletcher, ass't. woods superintendent, Abitibi.

Andy Waluk, woods superintendent, Abitibi.

Dobi Desmoulin, Abitibi, 1940's and 1950's.

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MAPS AND PLANS

(35)

1. Pukaskwa cutover map 1928-31 - Abitibi.
2. Abitibi cutover and camp map - Regan area 1943-64.
3. White River Drive system.
4. Abitibi cutover 1965-72 - Cotton Lake camp.
5. Ontario Paper cutover and camp map.
6. Black River Drive System.
7. Heron Bay Townsight Plan.
8. Copper Lake Camp Plan.
9. Lower Black River and Flume to Heron Bay.
10. Camp 70 rules.
11. Camp 70 plan.
12. Camp 53 bunkhouse plan.
13. ? Hornepayne area - Map of Olafsson camp on Fritz Lake - Horse harness.

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90. Buddy Whent

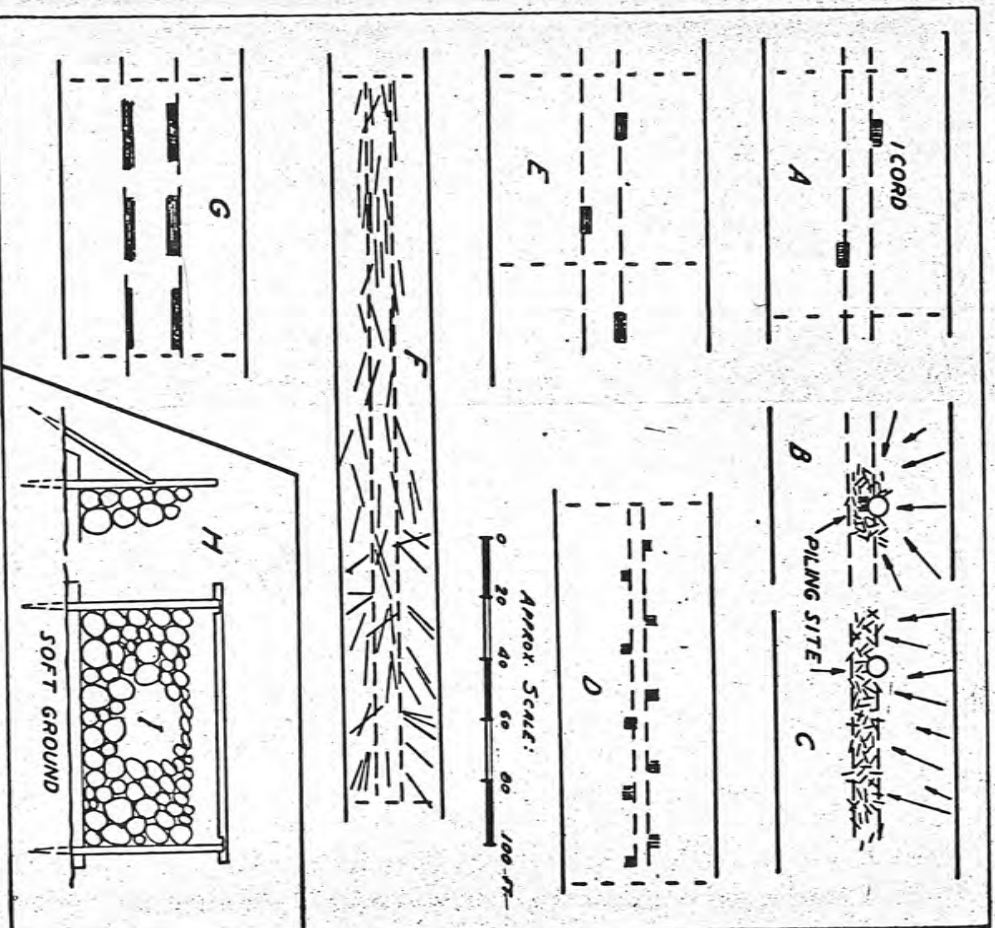


Fig. 34. Wood assembling and piling practices. (Approximate, diagrammatic presentation of these practices as related to subsequent transportation; rectangles show area cut per day.) A—Piling 4-ft. wood for sleight haul. B—Assembling wood to predetermined piling site; and C—to branch road, before specific selection of the site. D—Piling 4-ft. wood for skidding by drays. E—Piling 8-ft. wood for sleigh haul. F—“Swimpling” wood in log lengths for horse skidding with chain, on the left, maximum of swimpling done, and on the right, very little. G—Wood in log lengths bunched for sleigh haul with a team. H—Unnai supports for wood pile. I—Pickets with a top brace (soft ground).

the pile as soon as it is cut off. At any rate, bolts should not be allowed to become buried under slash. Moving of heavy bolts, being strenuous, should be done intermittently with other work.

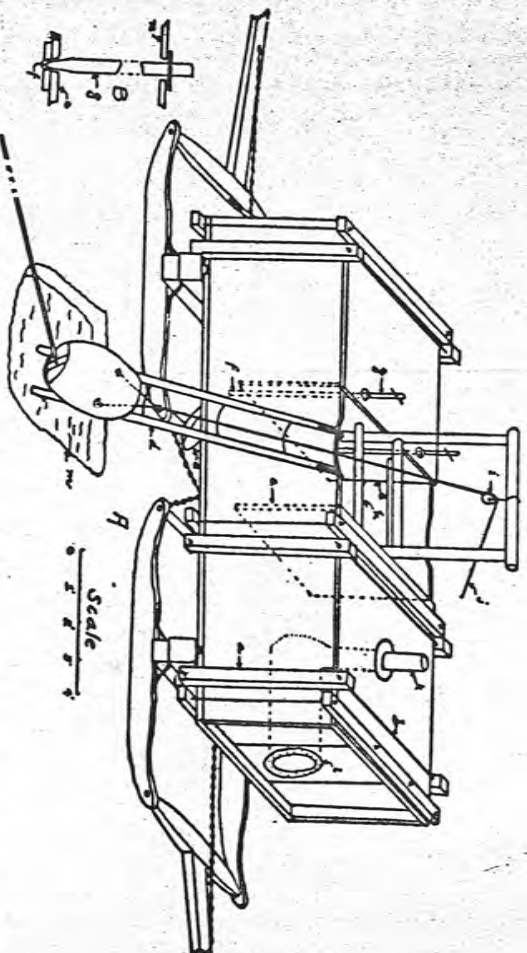


Fig. 15. A—Two-way, large water tank with a heater, for 4-horse team (Minnesota). This tank is 4' high, 7' wide and 14' long; capacity of 390 cu. ft. of water. It is made from $1\frac{1}{2}$ " plank. (a) Frame timber, 4" x 4" in cross section. (b) A $\frac{3}{4}$ " brace rod. (c) Interior partition to prevent splashing of the water. (d) Barrel ladder. (e) Sheet iron trough for deflecting water to the rear. (f) Holes in bottom of tank just over trough "e". (g) Plugs by means of which the holes "f" may be opened and closed. (h) A bumper which prevents the barrel from falling into the tank. (i) Hoisting block. (j) Hoisting cable, $\frac{3}{4}$ ". (k) Stack of tank heater. (l) Fuel door for tank heater. (m) Water hole. (n) Details of water plug "g". (o) Floor.

- 6) Icing during the day is practical if it can be arranged without interfering with hauling through the use of turnouts and a definite schedule. It is otherwise preferable to do the tanking during the night.
- 7) On heavy duty roads frequent, preferably daily, icing is desirable.
- 8) Vents for sprinkling are usually near the bottom at the rear of the tank. Probably it is equally or more practical to have them in the bottom of the tank so that the water will flow down between the front and rear sets of runners. The rear runners help to spread the water and shape the sleigh track. Vents so placed are easily controlled by means of long wooden plugs operated by a man riding on the tank roof. Adjustable splash boards — flat spouts of tin — permit a certain control of the direction of the water as it flows.
- 9) Accumulation of much ice on the tank, especially inside, greatly detracts from the efficiency of icing through reduction of tank capacity and increase of dead weight. Chopping out the ice inside the tank is slow, difficult and dangerous. The accumulated ice may be melted by placing a portable stove inside. Live steam may be used but is rarely available. Prevention of ice formation is the best policy. Always drain the tank thoroughly after using it. Permanent installation of a small

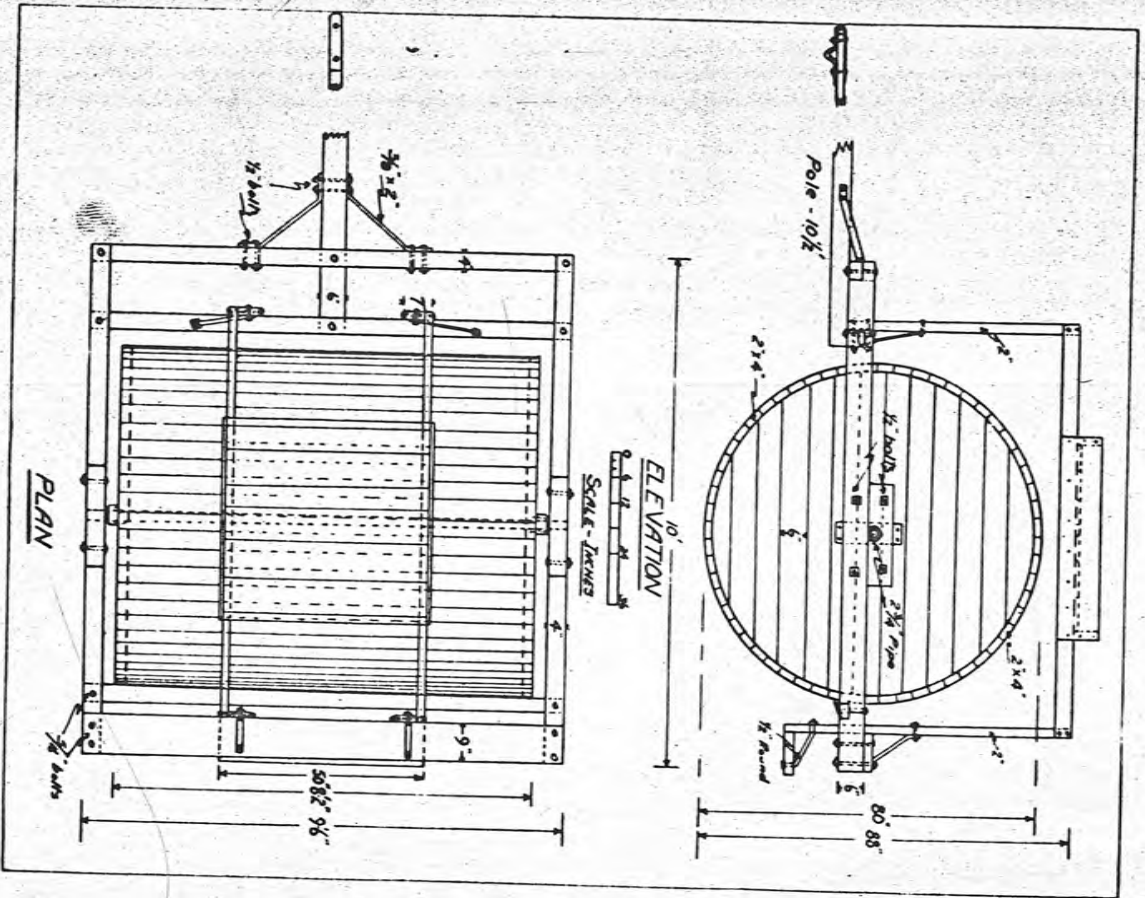


Fig. 17. Roller for construction and maintenance of snow roads (to prepare roads for tamping and to pack down the snow on landings) (C.I.P.Co.).

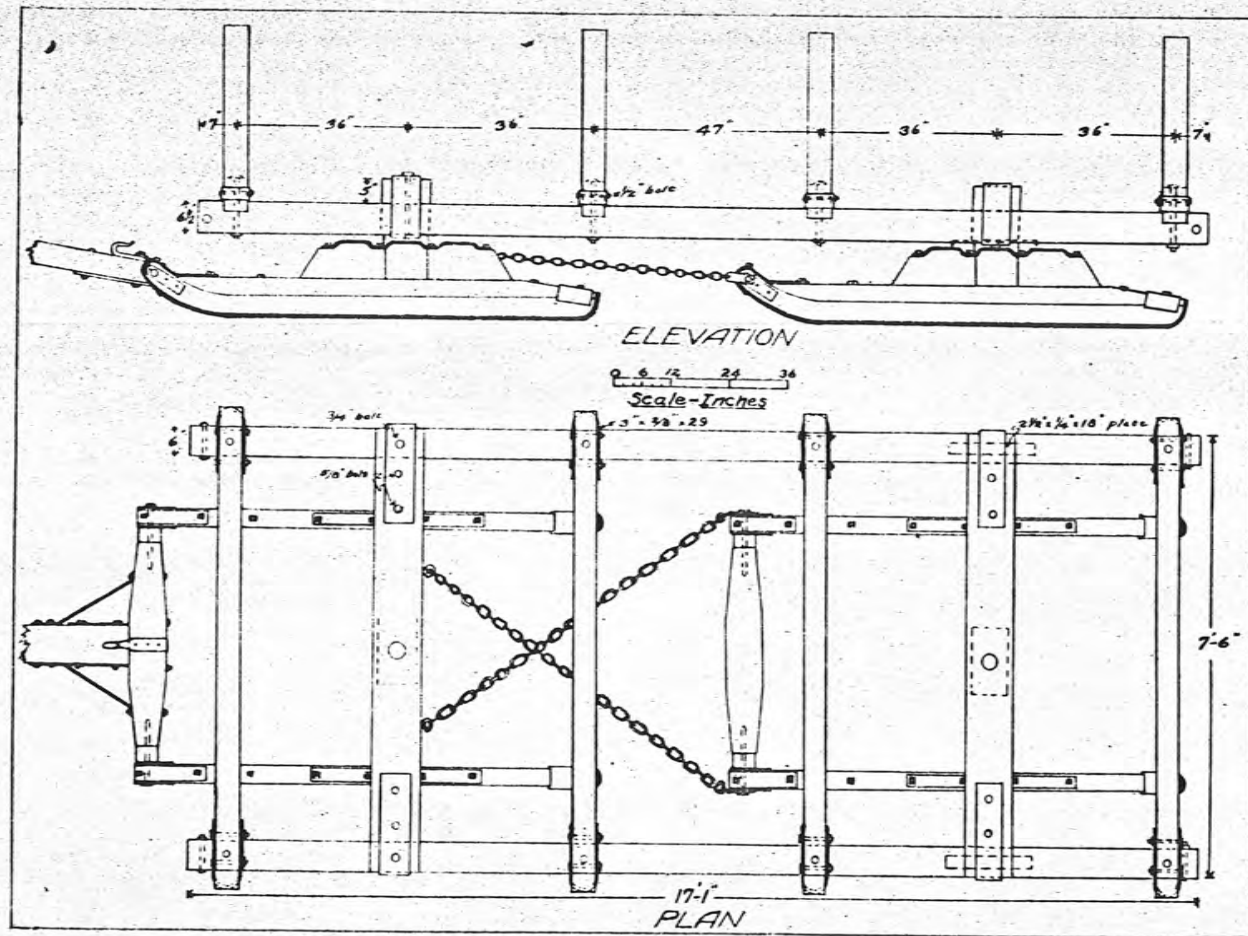


Fig. 35 Team sleigh with typical rack for eight-foot wood.

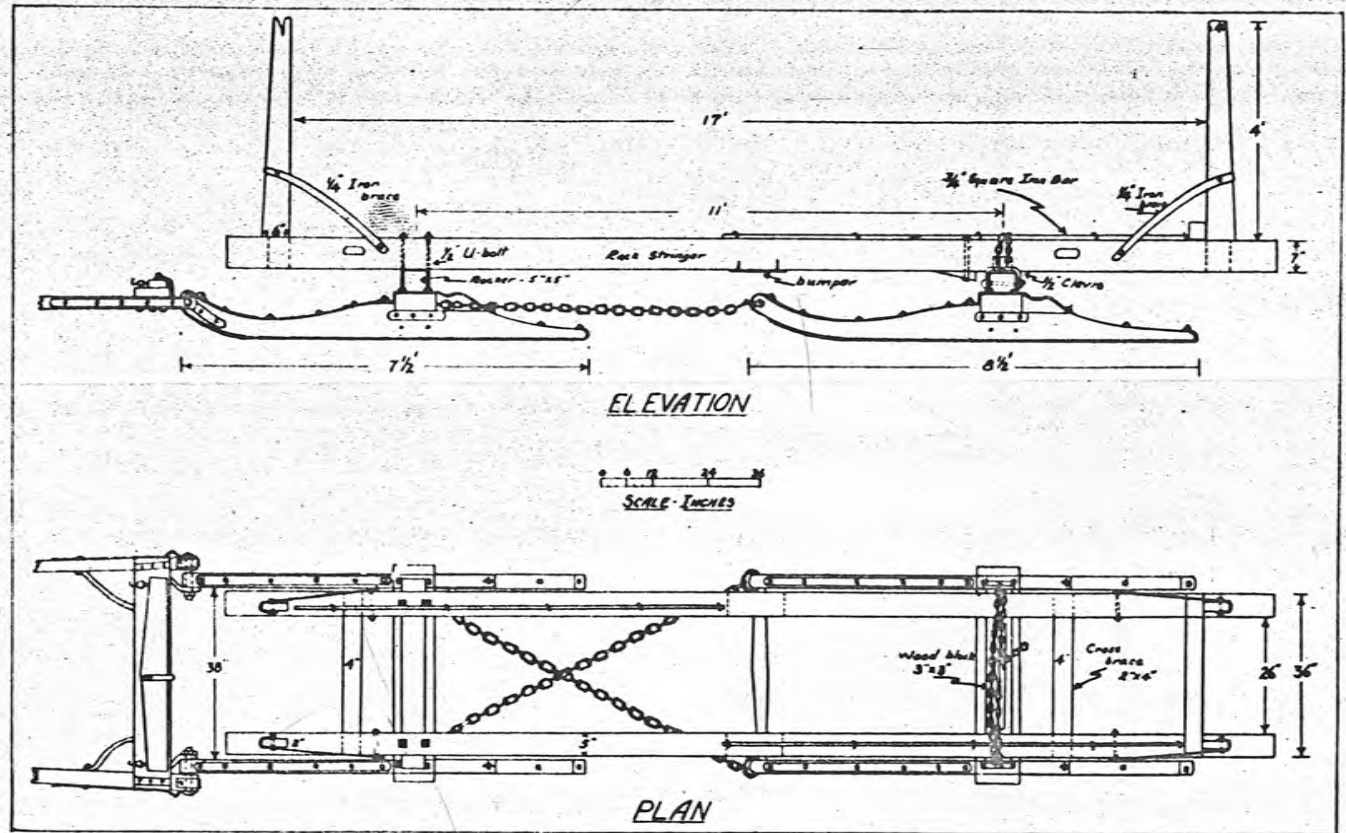


Fig. 32. Plan and elevation of sleigh with typical rack for four-foot wood.

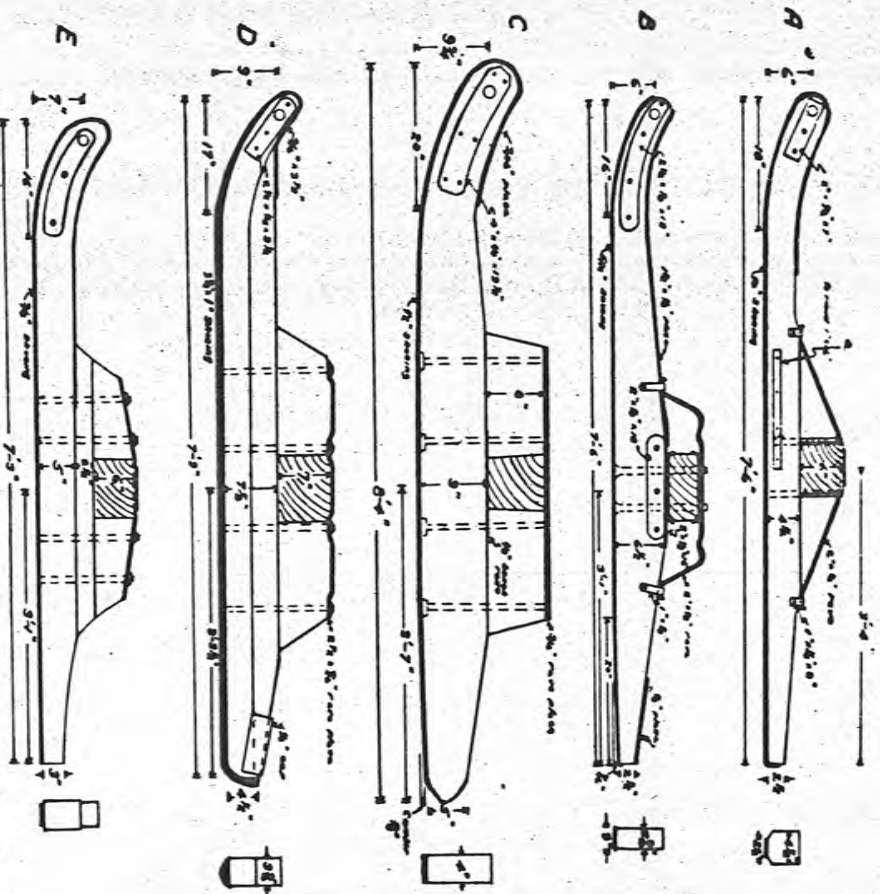
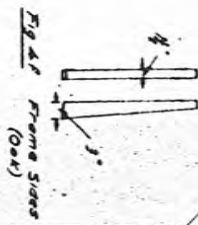
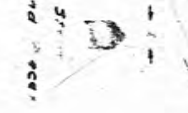
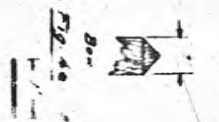
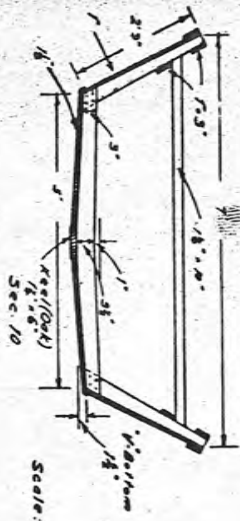
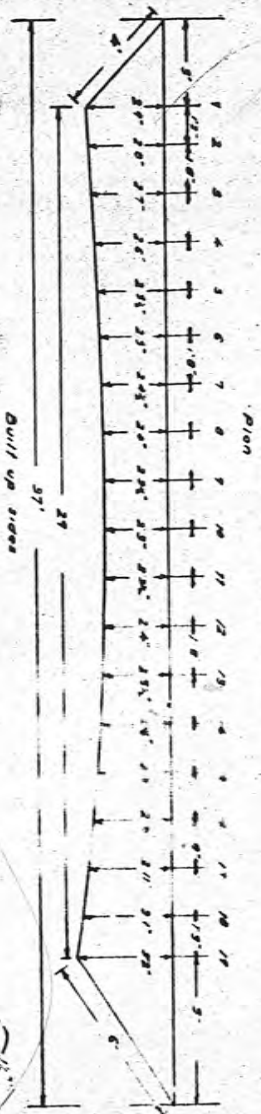
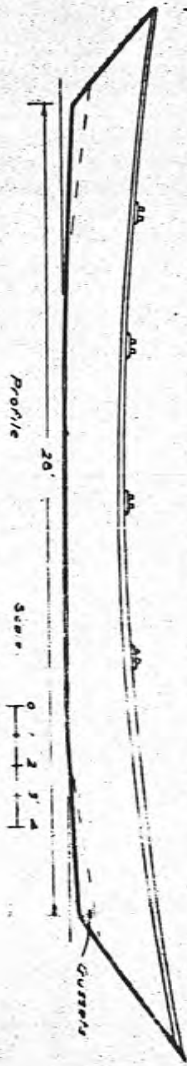


Fig. 22. Runner profiles: A—Light type of sleigh for steep grades. Raves attached to runner by metal straps; a—bridle chain wear plate; shoeing extends around nose and on top of runner. B—Light type similar to A. Iron plates on beam; runner brace under beam; continuous top plate on front end of runner; short top plate at rear of runner. C—Heavy duty sleigh with wooden knees and flat rive plate. Top runner plate extends around nose overlapping and ahead. D—Runner made up of two pieces. Knee bolts set in to provide clearance for bank. Top cap at rear end. E—Wooden knee sleigh with wood block on top of runner. Top plate extends between runner "laminations". Knee blocks sloped to provide bank clearance.

Side plates also may be used for strengthening (Fig. 22B). The height of the runner should be sufficient to give good clearance to the beam.

The rear end of the runner often receives much hammering in "breaking-out" the runners when frozen to the road. To prevent wear of the wood and consequent weakening of the runner, its heel is often covered with a steel cap from 8" to 12" long (Fig. 22D); a band of the same length may be fastened to each side and around the end of the runner; or the shoeing may extend up over the end for about 6" on the top.

The runner's camber or "crown" is the longitudinal curvature of the lower surface, which facilitates starting and steering. Too great a



DRIVE BOAT

BY THE WOODS DEPT., GATINEAU DIVISION
CANADIAN INTERNATIONAL PAPER CO.

Scale: 0' 1" 2" 3" 4"

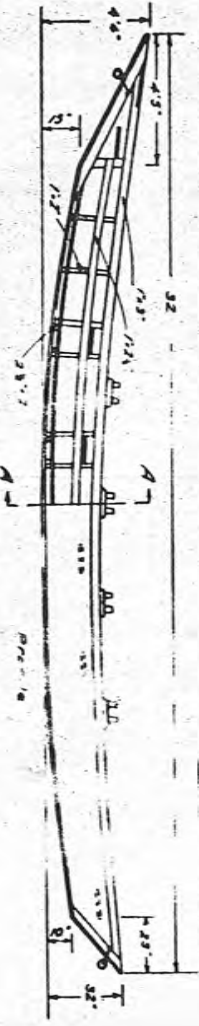


FIG. 48 2nd Section
FIG. 49 Frame Sides (Oak)

The sizes are 2-oar and 4-oar, which two and four men, respectively, can row. These boats are able to carry 10-12 men and they have a capacity of approximately 2,000 lbs. They are pointed at both ends, the front end less pointed, thus causing the boat to ride the waves easily. These boats are well adapted for all kinds of river work, such as breaking side jams and centre jams, as the men are able to stand up and work from each side of the boat. The man-power of the boat is sufficient for hauling booms, for placing them, making small rafts of logs, shooting rapids and moving camps from one place to another.

The dimensions for a 2-oar boat are given in Figure 73. The dimensions of a 4-oar boat are 27 ft. long, point to point, bottom 21 ft. 6 in., side 2 ft. 1 in. high x 6 ft. 2 in. wide.

DRIVE BOAT

BY THE ST. MAURICE RIVER BOOM AND DRIVING COMPANY, LTD.

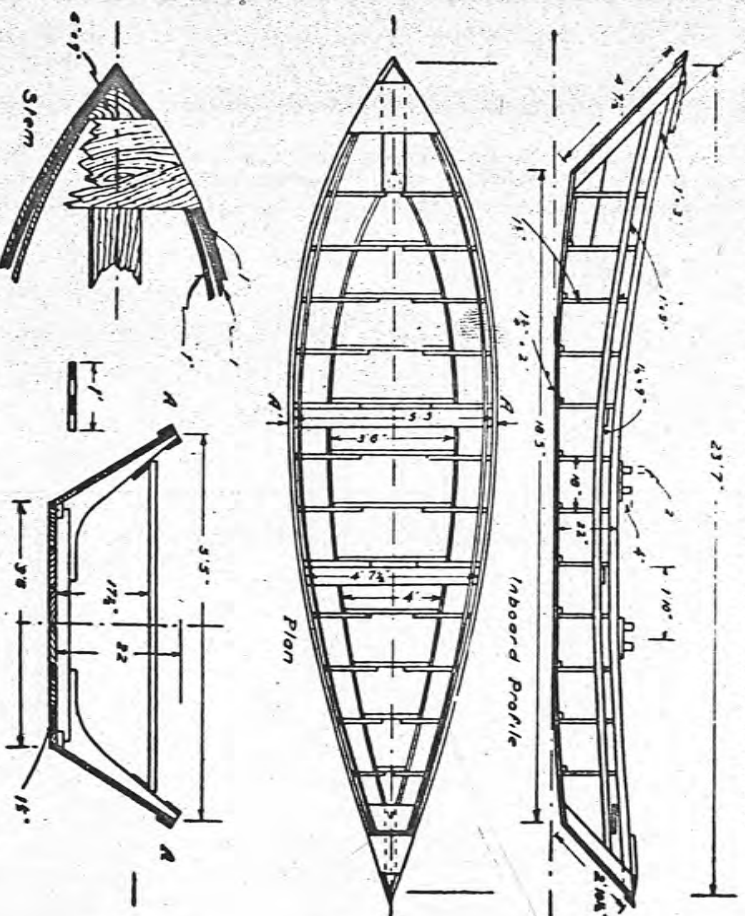


Fig. 73. Drive boat—St. Maurice River Boom and Driving Company, Ltd.

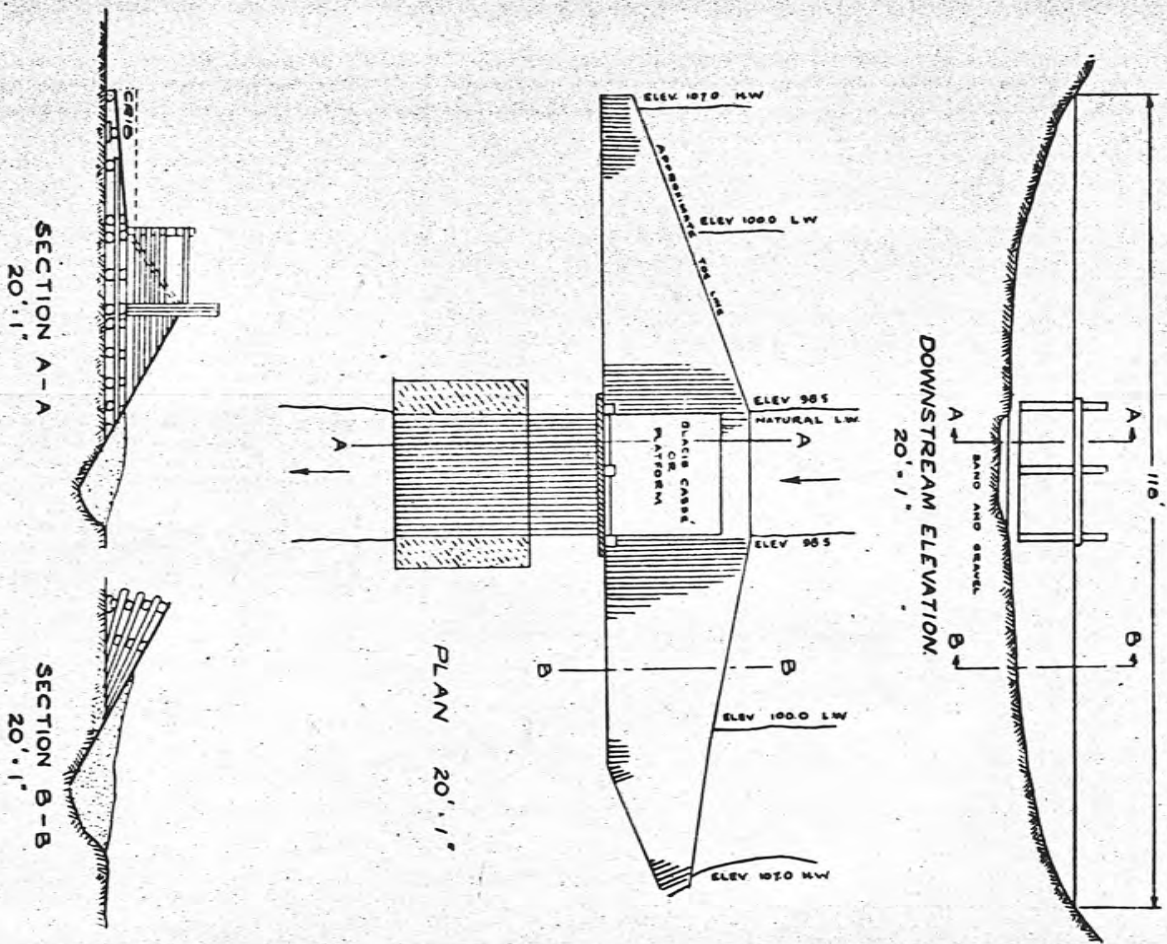


Fig. 9. Plan of Typical Driving Dam.

Example of Cost of Typical Dam:

It would be of advantage, perhaps, to cite the statistics of a cost analysis of a typical dam (built in 1942) in order to show the distribution of costs and labour.

Location — at discharge of small lake.

Over-all length of dam — 106 ft.

Type of Construction — Vertical face, rock-filled crib dam.

Expected Head — 10 ft.

Width of dam — 30 ft.

Length of apron — 25 ft.

Width of gate — 16 ft.

Type of gate — Horizontal drop logs.

Capacity—8-10 men sluice approximately 8000 logs per hour.

The total cost of this dam was about \$2,600.00. Of this cost, approximately 70 per cent was for gross labour charges (including board). A total of 460 man-days were required to build it. The following is the cost distribution for this job:

Labour — (460 man-days)	\$1,282.00
Meals — (1936 meals)	580.00
Building Materials	180.00
Tools	16.00
Supplies	47.00
Dynamite	135.00
Horse labour	76.00
Truck portaging — 3.7 days	96.00
Tractor operation — 6.3 days	184.00
Miscellaneous equipment	19.00
Miscellaneous charges	13.00
	<hr/>
	\$2,628.00

Mr. J. O. Wilson, in his paper "Post Dams" shows the following table to give some idea of operating costs and results experienced by his company in the construction and use of post dams:

Booms¹

Many types of booms are used in connection with the transportation of pulpwood by water, each differing in some respects from the others and having its own special application.

The cost of booms per linear foot varies from a few cents to almost \$20.00 depending upon the type.



Fig. 39. Sitka Spruce Log Booms.

sections held together by chains with a shackle or clevice. The shackle is made so that the pin cannot be taken out. A hole is drilled through the shackle and pin for a 4" nail to act as a key; the shackle pin must not project outside the shackle.

To prevent the chain from wearing the ends of the boom, birch or maple blocks, or "caps", 3" x 10" or 12" wide, are set into the boom-

¹Booms—A. Koroleff, (W.S. Index No. 261 (B-9-e).)

Some of the booms in the following section are specified as towing booms but all the booms thus described are suitable for holding wood also.

(1). *Sitka Spruce Towing Booms* (Fig. 39) These booms of simple design are used for long distance towing (Sault Division, Abitibi Power and Paper Co.) of large rafts in rough water. These have been used to tow 4-16' pulpwood in rafts of 4500 to 7000 cords in Lake Superior and Lake Huron over distances up to 150 miles.

Boomsticks are 20' long, averaging 30" in diameter, (not less than 26" small end) and are almost cylindrical, no butt logs being used. Booms are made with with the logs chained closely together, at first this gives a little trouble but after a few days the booms swing freely. Iron chains 1 1/8" to 1 1/4" are used, their ends connected by cold shuts of the same size.

Booms are chained together in sections of 25 pieces, the sections held together by chains with a shackle or clevice. The shackle is made so that the pin cannot be taken out. A hole is drilled through the shackle and pin for a 4" nail to act as a key; the shackle pin must not project outside the shackle.

¹Booms—A. Koroleff, (W.S. Index No. 261 (B-9-e).)

stick floats with the surface and spiked with 3/8" x 8" ship spikes. They are replaced when worn out.

These booms were still in good condition after 8 years of hard usage.

Cost of these booms per 25 - stick section (about 1922):

25 boom sticks	@ \$19.00	\$1,225.00
25 boom chains	@ \$16.25	406.25
25 cold shuts	@ \$1.75	43.75
1 boom shackle		4.25
Boom caps and spikes for 25 booms (100 @ \$0.40)		40.00
Labour: Boring, capping, and chaining, 25 logs @ \$4.00		100.00
		1,819.25
Cost per stick		72.77
Cost per linear foot		3.64

These booms are very strong and the loss of pulpwood small.

The Iroquois Falls Division of the same Company have used similar booms on Lake Abitibi, with boomsticks about 40 in. in diameter and 30 ft. to 40 ft. long. Their cost (1931) was \$65.00 per stick, with chains and hardwood blocks.



Fig. 40. Strip Boom.

over lakes 5-10 miles across.

The advantages of this type of boom is that it is relatively cheap and has better holding ability than ordinary one-log booms although inferior keel booms. They tow back more easily than keel booms and their maintenance is much less, consisting only of replacing strips as they wear out and re-boring chain holes about every 7 years.

(3) **Three-log Booms** — (Fig. 41) These have been used on Lake Abitibi for towing large bag rafts of 16 ft. wood over a distance of 80 miles.

These are made of 30 ft. spruce or jack pine logs, 12 in.-14 in. diameter. The logs are bolted together with 3/4 in. bolts. Near each end (Fig. 41) one bolt passes through logs "a" and "c" and another through "b" and "d" 10 in. from that end "a" and "b" and

(2) **Strip Booms** — (Fig. 40)

Boomsticks of pine, 30 ft. long by 15 in. diameter (average) having 3 or 4 spruce strips, nailed at 3 ft. intervals along the sides, parallel to the axis. These have been used successfully towing up to 700 cords of 4 ft. wood

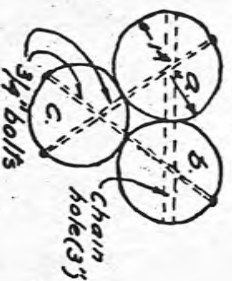


Fig. 41. Three log boom.