WESTWARD GO YOUNG MAN

REMINISCENCES OF LES CHARLES

RETIRED CHIEF ENGINEER WESTERN REGION
CONSULTANT CANADIAN NATIONAL RAILWAYS;
MAJOR ROYAL CANADIAN ENGINEERS

VOLUME 1

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HELENA VIOLET CHARLES
Née Hamilton, Born at Hamilton, Ontario

Canada has been good to me - these recollections are a token of love and gratitude to Helena, my wife, and to our family, and of heartfelt thanks to the many 'good fellows' who also influenced my life.

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The author appreciates very deeply the assistance and advice so generously given to him by his long-time friends and fellow workers of the Canadian National Railways -- especially Mrs. M.G. (Peggy) Payne, Co-worker at CN in Winnipeg; Mr. K.H. Hand, former Manager, CN Photographic Services, Montreal and Mr. V.R. Cox, President, CANAC Consultants Ltd., Montreal.

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PART I

(1892-1938)

1. BOYHOOD IN ENGLAND

During the last decade of the nineteenth century, the town of Weybridge, Surrey, England, my birthplace, 15th December, 1892, was a delightful community situated at the confluence of the River Wey with the Thames, twenty-five miles southwest of London. There was excellent boating and an outstanding annual regatta. My father, Robert W. Charles, was the proprietor of a high class drapery business. Unfortunately, he died at the early age of forty years. My mother, Alice Priscilla (née Poulton), survived to a good age, eighty-four years. There were two other children in the family; an elder brother, Norman, had many Australian associates during World War I and subsequently emigrated to "Down under"; he died during the Second World War; and a younger sister Doris, who resided in Surrey and Sussex until her death a few years ago.

My school was Edward the Sixth Royal Grammar School at Guildford, founded in 1509; an impressive old stone structure with huge oak beams black with age, on which the names of outstanding ex-scholars were commemorated in gold lettering. There was a central quadrangle, paved with stone flags, complete with a ghost. The chain library contained priceless ancient volumes decorated by hand; they were chained to the oaken shelves. This collection is said to be one of the finest in existence. The science master made the most impression on me, he was a friendly person with the name of Sam Weller.

My thoughts, however, often wandered to the out-of-doors. I spent the long summer holidays with a bachelor uncle, Harry J. Baker of Frensham; he was an expert wing shot. Although only thirty-five miles from London, we had good shooting...rabbits, pigeons, partridges, pheasants and, during extremely cold spells, ducks.

To ride with the hounds, fox hunting, was for the wealthy only. Others, however, could observe the meets and the hunt from vantage points, to sight the colorful riders, splendid mounts and hounds and, sometimes, the fox; then hear the stirring horn and tally-ho. For those with less means, but with strong legs and wind, there were the Harriers, with a pack of beagles, to hunt hares during winter on foot. Also, during moderate weather otter hunts with a pack of specialized shaggy hounds at home in water. The followers had to be prepared to be waist deep in water much of the time. Harrier and Otter hunt meets were usually on Saturdays, so I was able to participate and in the

evening just about crawl home, after strenuous cross-country runs.

Rifle shooting took more of my time from school than it should have. I was on the Guildford town rifle team and on the battalion team of the Fifth Royal West Surrey Regiment (Territorial) in which I enlisted primarily for shooting, with an opportunity to fire at Bisley and enter for the King's Prize.

My mother engaged a governess, Miss Gladys Silcox, for my sister. During this period Miss Silcox's elder brother, Leonard, a Welsh International Rugby player and civil engineer, paid his sister a visit at our home. Upon graduation Mr. Silcox emigrated to Canada to enter the service of the Grand Trunk Pacific Railway, west of Winnipeg. He had abounding energy and it was soon recognized that he had aptitude for railway location. He was given charge of a survey party locating the main line through Saskatchewan. Aptitude for location has to be "naturally built in". Not too many have it; some otherwise talented engineers, have not made good on location.

As mentioned, Mr. Silcox took a holiday and visited his sister. He was a friendly person, especially patient with children and my questions about the Canadian West...Indians, buffalo and all! At the age of about twelve years, his descriptions of his professional work through the "wide open prairies" impressed me very deeply and I determined to endeavour to emulate him. This set the course for my life; and I have much to be grateful for, especially the example set by this fine gentleman, with respect to work and life in general.

After passing the standard examinations set by the University of Cambridge, I left school to become a pupil with Messrs. Hardy & Co., contractors and engineers, of Woking, principally on water and sewer projects. Following a period of instruction, my duties were to set reference points and levels for guidance of the foremen and to assist the project manager to prepare his weekly cost sheets, etc. The company secured a new contract, to install a water main in a suburb of Croydon and, to my surprise and delight, I was sent there as Company representative together with an old experienced foreman. The municipality had its "clerk of works" on the job. My duties now expanded to making up the weekly payroll and to go to the bank, each Saturday morning, to draw the cash to pay the gang at noon.

The term "lodger" was then in vogue. My lodgings were with a young family who provided me with a comfortable room and good meals. There was a racing stable nearby; I met the trainer and talked myself into being given the privilege of riding, early in the morning, with the exercise string. Saturday evenings I would go to the Croydon Empire...a seat in the "Gods" cost sixpence. Some famous variety artists played there; Marie Lloyd was one.

I enjoyed this job and the environment, but dreams of Canada continued to attract me, so I again contacted Mr. Silcox, through his sister who had become a family friend. He very kindly suggested that if I emigrated he would endeavour to have me taken into the engineering service of the Grand Trunk Pacific at Edmonton. I discussed this with Mr. Hardy; he was of the opinion it would be a mistake as it appeared there should be a good future for me with his firm. However, I had made up my mind, so thanked him for his kindness and arranged to leave.

I look back with love for my Mother and with gratitude for her determination to maintain our way of life following the sudden early death of my Father and to ensure that we three children should attend first class schools and develop healthy minds and bodies. My sister, a pupil at finishing school in Switzerland, just managed to reach home during the early days of World War I.

There are happy memories also of long summer and Christmas holidays at our maternal Grandmother's beautiful home, in an ideal environment, at Frensham, where she and her bachelor son and two spinster daughters resided until, one by one, they passed on. The walk over a footpath, with stiles and a narrow bridge across the River Wey, to the picturesque ivy clad church, built in the thirteenth century, and its peal of bells ringing a cheerful welcome, is a lasting memory. As a memorial to their Mother, our uncle and aunts installed a beautiful stained glass window. They all rest in the churchyard.

2. AN EMIGRANT AND AN IMMIGRANT

A prized memento of service in the Territorial Army is my discharge certificate -

"Private John, Leslie, Charles, 5th Batt. "The Queen's" R. W. S. Regt. is discharged at his own request on leaving for Canada, dated 11th. January, 1910."

Early in March I booked passage on the old Allen Line S.S. Tunisian, from Liverpool to St. John and via the Canadian Pacific, through to Edmonton. It was near the spring equinox, the Atlantic crossing was very rough; I was horribly seasick. My cabin mate, an older man, said, "Boy, swallow hard or the little brown ring will come up". The first port of call was Halifax, for a half day. This enabled an excursion to Citadel Hill and some exercise, then I ate "like a horse" during the trip around to St. John.

A C.P.R. train, made up of colonist cars, with wooden slat seats which could be made up into lower and upper berths, a heater and cook stove, and washroom at each end of the car, was marshalled along the dock side. The first formality was to go through Immigration and Customs. It was during this procedure that I first heard the currently popular slogan - "Go west young man, go west", and the train conductor's shout, "All aboard", and away we went with great excitement. More and more immigrants were arriving from the British Isles and Continental Europe.

The journey through Lower and Upper Canada and across the Prairies was uneventful. Meals were of sandwiches, etc., with tea or coffee brewed on the car cook stove; one could have a fairly comfortable night's sleep and keep clean. At Winnipeg there was a change of trains and over-night stop, spent at the Bell Hotel on Main Street, where I had my first experience of a Canadian barber shop but saw little else of the city.

On arrival at Edmonton, I put up at the Castle Hotel, then quite a respectable house but long since deteriorated to a "dump", where I was to meet Mr. Silcox. I learned that he was expected in a few days. This caused me a little anxiety, but I still had most of the twenty pounds sterling I had left home with and a good outfit of clothing. When Mr. Silcox arrived, he explained to me that he was unable to place me on his party at this time, so I would be assigned to a party on the prairies. I rather think he considered it would be better for me to be broken in there, than to go directly into more tough conditions in the mountains.

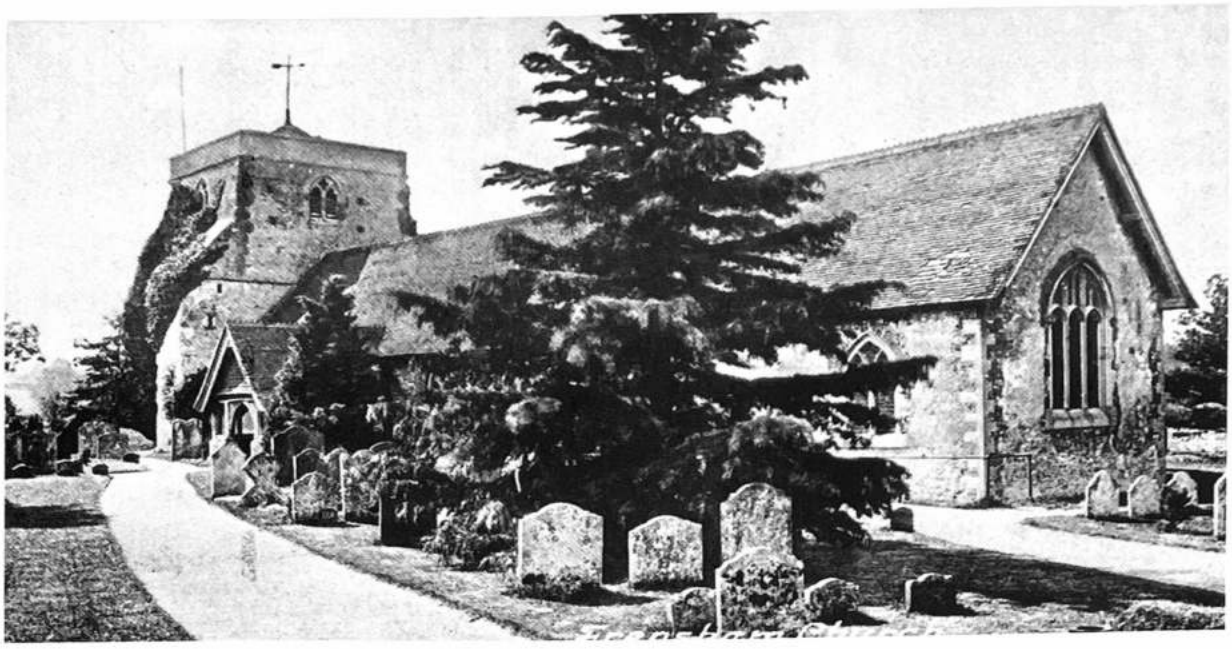


Photo 1. Frensham parish church built in the Thirteenth Century, heavy bells pealed a cheerful welcome to services.

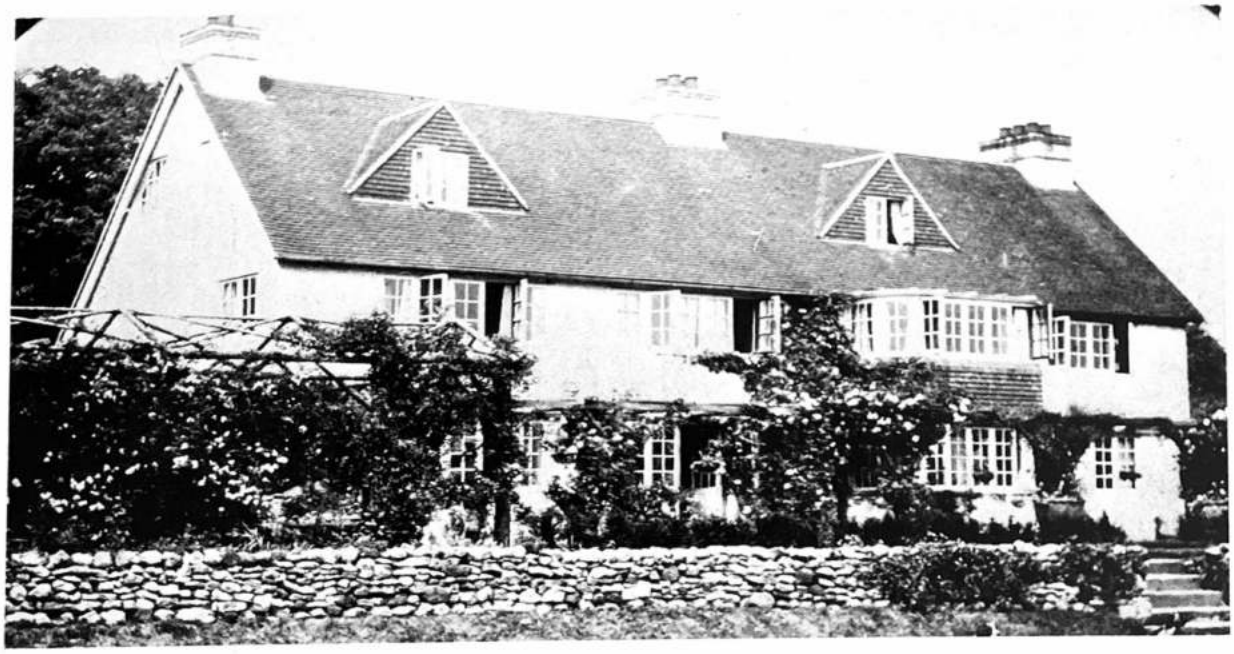


Photo 2. "Crosslanes" Frensham, Surrey, Circa 1908, roses were prolific, it faced south towards a magnificent expanse across the valley of the River Wey.

3. RAILWAY LOCATION ON THE PRAIRIES

My service with the G.T.P.R. commenced 1st April, 1910. I was instructed to proceed, via C.P.R., to Alix, Alberta, and report to Locating Engineer L. C. Gunn who was engaged in surveying a branch line between Tofield and Calgary. Fortunately, Mr. Gunn happened to be at the station when the train arrived. He took me in hand saying that he would be leaving for his camp right away and I should accompany him. Mr. Gunn had an excellent team of drivers and set off over prairie trails. Although I had had some experience with horses, western style of harness was new to me and so were the improvised style of barb wire gates I was required to open for Mr. Gunn to drive through, and to close them and hop back into the buggy. This was a happy experience. We arrived at camp about supper time.

The party was typical for location on the prairie, consisting of the chief, transitman, levelman, draftsman, topographer, rodman, head chainman, rear chainman, rear picket man, two axemen, four teamsters, cook, cookee and bullcook...18 men. I was classified as chainman, rate $35.00 per month and board.

The camp, five 16' x 16' pyramid type tents, was by a beautiful little lake in pleasant rolling country with numerous small lakes and pot holes and bluffs of bush, small aspen and willows, sufficient for firewood and for making stakes to mark the proposed railway centre line.

Work was Monday through Saturday, 7:00k to 18:00k on line; Sunday was left to clean up, review maps, sharpen axes and adjust instruments, etc. We drove from camp to working points with teams and light spring wagons; the Chief had a buggy and there were two or three saddle horses with the party. Noon lunch was taken out on line, supper time was 18:15k; meals were excellent.

As the location progressed, camp was moved relatively. Moving days were long. Breakfast was at 5:00k, so that camp was struck and loaded in order that the line party left for work as usual at 7:00k; and, after a normal day drove to the new camp site and pitched tents. The cook tent, however, would be set up earlier, so supper was not much later than usual; this was all well organized.

Where the line was projected through the numerous small lakes and sloughs, there was no fussing about triangulating around the water. The chainman and rodman waded straight ahead, often up to

the armpits. During early April the water was somewhat cool! On emerging, they might remove their boots to pour out water.

After supper there were camp and office duties to be performed. The transitman and draftsman together calculated the courses and distances run during the day, also the geographical position of each, by "latitudes and departures", preparatory for the draftsman to plot the map, scale 400' to 1", the following day. The levelman and his rodman checked their readings and plotted the profile. The topographer clarified his field sheets, showing contours with 5'V.I., or in rougher country 10'V.I., and turned in his day's work to the draftsman for transfer to the master map. The Chief studied the overall results and projected the line to be run the following day and instructed the transitman accordingly; the transitman, as the Chief's deputy, was responsible for the actual staking of the line on the ground and for the efficiency of the party at work. The Chief's time was mostly taken up in reconnoitring ahead and in general organization. Chainmen and axemen made stakes after supper and cut firewood. Teamsters had their horses to water and feed. The cook, cookee and bullcook were up by 4:30k and did not finish until about 21:00k but were able to take a rest during the day, although they had to prepare lunch to be taken out on line. Also, they were required to serve lunch in camp for the draftsman and themselves and for whomever else might be in camp.

So the working day, Monday through Saturday, was not less than fourteen hours, including one hour for lunch on line and one hour for supper in camp. Sundays, the Chief, transitman, levelman, draftsman and topographer would spend at least one half of the day reviewing the work to date and planning ahead. Others washed clothes, by lake or stream, with tub and washboard. The cooking staff worked seven days a week. No wonder some cooks were prone to go on a drunk whenever an opportunity presented itself!

A party would work through, month after month, except for a break of a few days for a Christmas-New Year Day holiday, until the respective survey was completed. However, parties far from bases would be in the field without a break for over a year or more.

Keen competition existed between parties and within a party. Each member was expected to prepare himself for future advancement in the field. If the Chief, say, was moved to another pro-

A Metis hunter

Photo 3. Location survey G.T.P. Tofield-Calgary Branch 1910.

Photo 4. Pot-holes, breeding grounds for myriads of ducks -- veritable paradise.

Photo 5. Frame of Indian "sauna" to be covered with skins or canvas, stone in centre would be heated and water poured onto it.

ject or left for some other reason, the transitman should be competent to take over and the levelman take on the transit and so on. Also, in this respect, seniors were expected to tutor juniors. The Chief would take a personal interest in those who showed willingness; others were soon weeded out. All maps, profiles and estimates of cost to construct a line, as located, were completed and traced on linen in the field. The Chief affixed his signature and assumed full responsibility that all was in readiness for construction to proceed, if and when it might be decided upon by management. Life on location was happy, interesting and rewarding.

Some location engineers supplemented their monthly pay cheque, $150.00, by owning the teams on the job and renting them to the Company. This was a satisfactory arrangement to both parties.

These conditions and efficient procedures continued until after World War II when the employment of aircraft on surveys became general for ease of transportation, reconnaissance and mapping. Aircraft, at times, however, cause hinderances and disruptions to camp life.

Location of the Tofield-Calgary Branch was completed in May and the members of the party were assigned to resident engineers appointed to supervise construction, to commence immediately.

4. RAILWAY CONSTRUCTION ON THE PRAIRIES

The G.T.P. Tofield-Calgary Branch was typical of railway construction on the prairie. General administration emanated from the office of the Chief Engineer, Mr. D. B. Kelliher, at Winnipeg, to the Division Engineer, Mr. W. E. Mann, at Edmonton and his assistant engineer, who exercised direct supervision on the job. Mr. Gunn assumed the duties of assistant engineer for a short time, until there was need for him on location of the main line through the mountains. Mr. R. W. Graves then took over and established his office at Alix; under him there were resident engineers camped on line to cover "residencies" of twenty miles each.

The resident was responsible for restaking the centre line, as had been located, where necessary; then to cross-section the excavations and embankments, also culverts and bridges, by staking the respective dimensions on the ground, for the direction of the contractor and for the inspection of the work as it progressed to ensure that it was up to specifications; making measurements monthly for preparation of progress estimates for payment of a percentage of the value of the work performed to date and, on completion of the contract, for final payment; also for drafting as constructed plans and profiles to accompany the final estimate showing, in detail, all items of work.

I was assigned to Resident Engineer Eric West. He set up camp, four tents erected on lumber frames over floor boards, on a well drained site overlooking a lake, near the future village of Bashaw. The working establishment was, resident engineer, instrumentman, rodman, chainman, axeman and cook, also a teamster and team with light spring wagon and two saddle horses.

The contractor's camp, with large marquees for the cookhouse and stables and tents for the office and bunkhouses, resembled a circus. It housed the superintendent, timekeeper, foremen, teamsters (skinners), labourers, cookhouse staff, horses and mules. Equipment consisted of elevating grading machines, wheelers, fresnos and slip scrapers (forerunners of the modern huge diesel powered scrapers), wagons, horse powered pushers (the original bulldozer) and pile drivers. There was one distinctive feature - a strong tall pole, erected near the cook tent, with a pulley attached to the top, for the purpose of hauling up quarters of beef above the range of most flies, so that a hard shell would form in the hot sun, in lieu of refrigeration.

Photo 6. Construction G.T.P. Tofield-Calgary Branch 1910. Resident engineer's camp near future Bashaw.

Photo 7. The office tent, Eric West, Res. Engr. in front of door, to right Luke Lindoe, instrumentman, teamster and axemen, to left Bill Seabrook, cook and J.L.C., chainman.

Railway Construction on the Prairies

Elevating graders were the principal producers, powered with twelve horses, eight hauling and four pushing; the top skinner with hands full of reins was boss of all he surveyed from his high seat; he was a real professional. The plough, the key part of the grader, cast earth onto the elevator which deposited the ploughed material into wagons, moving alongside, to be driven ahead for placement into embankments. It was a grand sight to see this all working in unity.

To open up an excavation, the first furrow was ploughed around the top, in line with slope stakes set up by the engineers, showing the depth of cut at the corresponding distance out from the centre line. Each succeeding furrow was inward and deeper, until the final round was parallel to the centre line and at the depth called for, resulting in a completed cut with true slopes and bottom width, without necessity of further work excepting minor trimming of the actual roadway on which track would be laid.

The adjacent embankments were built up with equal precision. The first wagon loads of earth were dumped alongside the slope stakes showing the height to be built to. The succeeding loads were dumped inwards to form the correct slope. This was accomplished by the dump boss. As each wagon load was driven forward, he shouted, "Hi", for the skinner to dump his load at just the right spot. If the skinner drove carelessly and dumped too soon or too late, he received a wonderful line of poetic abuse. An artistic vocabulary could be learned from the dump boss. Although he kept a shovel in hand, he did not intend to work with it...that would show incompetence in directing the skinners. The resulting fill would be to the correct height (plus an allowance for shrinkage) and width. Cuts and fills were all built to horizontal line and vertical height. God help an engineer's instrumentman if he made an error in setting a slope stake to height and distance out, the dump boss would spot it pretty quickly and his sarcastic comments would sizzle.

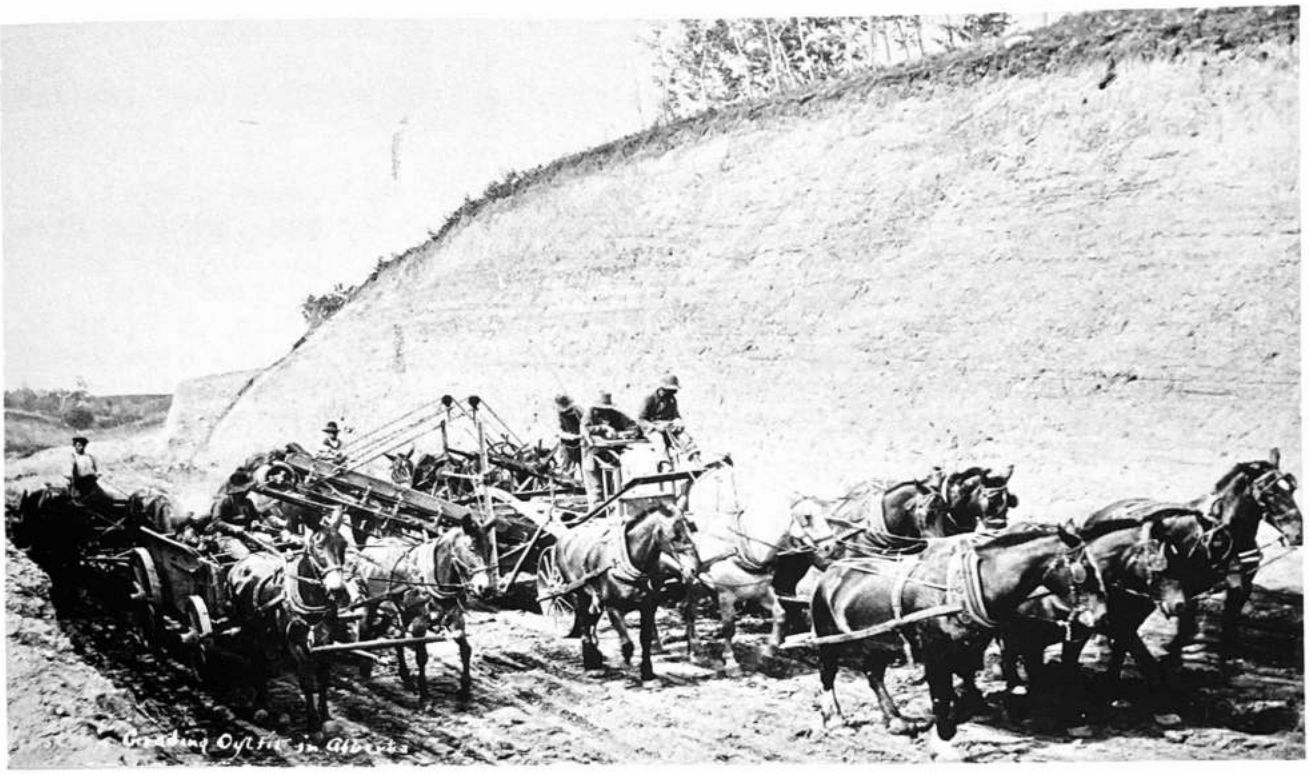
Light work, embankments not to be built with materials from adjacent excavations, was usually sublet to "gypo outfits" operating with slip and fresno scrapers, borrowing materials from pits parallel to the toe of the slopes of the fills.

The main contractor for grading, culverts and timber bridges on the Tofield-Calgary Branch was H. J. Webster, of Calgary.

The resident engineer, Eric West, was a well qualified professional man and a good fellow to work under. Monday through Saturday breakfast time was 6:15k. At 7:00k sharp we left camp in the spring wagon for the working point, had lunch on line and returned to camp by 18:00k for supper in fifteen minutes. Occasionally a full day on line was not required, then, for the balance of the day, we made stakes and cut firewood in camp. I missed much of the work on the wood-pile. Not that I had an aversion to it, actually I was keen to become a passable axeman and was delighted one day when the instrumentman complimented me for felling a tree, admittedly a small aspen, with two blows - one from the right and one from the left - without moving. As I was knowledgeable in basic mathematics and a fair draftsman, I was often called into the office to work with the engineer and instrumentman. This gave me valuable experience which was very helpful towards being retained in employment during periods when work was slack and others might be laid off.

Sundays breakfast was at 8:00k. We normally had the day off. I walked miles, or rode, to become familiar with the countryside and discover the best habitats of game birds, prairie chicken (sharp-tailed grouse), partridges (ruffed grouse), ducks and geese; also, curlew and Wilson snipe were then common and I was thrilled with a flock of pelicans. When I had saved a little money, I bought a Savage twenty-two rifle and, in the fall, a twelve gauge Remington pump-gun. Eric supplied me with ammunition to shoot for the table, then legal, with no bag limits. When Mr. Graves called during his periodical inspections, I would be delegated to be the guide on hunting trips; Mr. Graves was a keen sportsman and gave me some very happy times. This, to me, was a veritable paradise - wide open range, with none but a few cattlemen and nomadic Indians. They, the Indians, constructed small bath-houses, a dome shaped frame of willows to be closed in with a covering of canvas or hide, just large enough to accommodate one or two persons and some hot rocks, over which water would be poured...a simple and effective steam bath; years ahead of the saunas presently being built into apartment blocks and health clubs.

The cook, Bill Seabrook, an old Imperial soldier, was excellent and a friendly, happy fellow. Not all cooks are. His rate was $60.00 per month and he was allowed an extra $15.00 for supplying milk and cream from a cow he kept in camp. He also kept chickens and a turkey. And, a dog and a cat. I met Bill some years later; we laughed over old times. He said, "You know, I used to deliberately put food in front of you, just to see how much you could eat".



Photos 8 & 9. Cuts were excavated with elevating graders; earth being ploughed and loaded into dump wagons for haul and building up embankments.

Luke Lindoe, instrumentman and former dairyman, assisted Bill with milking, and he was very helpful to me in becoming a Westerner.

Eric West decided that we should all have a break on the 1st of July, by attending a rodeo being organized by the ranchers. There were expert riders and ropers, but I failed to understand the attitude of the spectators booing riders thrown from bucking broncos, for it appeared none of the "booers" would venture to mount those steeds. It seemed unfair.

The roadbed of the Tofield-Calgary Branch was completed by freeze-up, 1910. It was an "open" fall, conditions were ideal for tracklaying which commenced without delay. A "Pioneer" machine was employed - a converted flat car with a boom and crane leading - with cars of ties, rails and fastenings following, all being pushed, slowly but steadily, ahead by two locomotives. Trams and roller conveyors were attached to both sides of the flats, for passing ties and rails to the Pioneer and to be positioned on the roadbed. Up to one hundred men were employed in this operation; daily production was one mile of track.

There was a noteworthy timber bridge on this branch line, said to be the largest such structure ever erected. It crossed the wide and deep valley of the Battle River near Camrose. Cost of maintenance was heavy, so during the period of the great depression, the "dirty thirties", this bridge was eliminated by a line revision with considerable increase of "rise and fall" and curvature. This, too, presented future difficulties, with land movement on sidehills.

Some analysts have been critical of the Grand Trunk Pacific's policy of such a high standard of location, directly across wide and deep valleys, with heavy capital expenditure and future costs to maintain large timber structures or replace them with steel. Perhaps this criticism was justified with respect to branch lines with light traffic potentials. The G.T.P. policy, however, to locate and construct the most practical direct route, with minimum rate of curvature and ruling gradient for its main line, is certainly proving to be economically sound with the introduction of unit trains, particularly for transport of grain and coal through the Rockies to Pacific ports. It is a heritage Canadian National can be justly proud of. The location engineering on the Grand Trunk Pacific through to Prince Rupert and, on the Canadian Northern to Vancouver, is of the highest order.

As the resident engineers completed their field measurements, Mr. Graves closed the individual camps and consolidated them at his headquarters, where calculations, maps and profiles were finalized. Thousands and thousands of sums had to be figured and checked to ascertain the huge volumes of earthwork, classified into common (earth), hardpan, loose rock and solid rock, to the closest one cubic yard; also the relative overhaul, a unit based on cubic yard - distance. This had to be all done by longhand, no calculating machines yet being available to simplify this gigantic task. I was given some pleasurable breaks, however. Mr. Graves had a clay pigeon trap shooting machine and he would call for me to shoot with him and, too, he loaned me a pair of skates to enjoy the clear ice on the lake by camp. All in all, the work demanded very close application but, on the other hand, there were enjoyable diversions.

All was wound up in time for us to move into Edmonton for Christmas and for reposting. The weather was so mild, with almost no snow, that an overcoat was not necessary.

So terminated the year 1910.

I cannot overstate how fortunate it was for me to have come under the influence of such fine, understanding gentlemen as L. E. Silcox, L. C. Gunn, R. P. Graves and Eric West, and also to have lived in camp with Luke Lindoe and so expert a cook as Bill Seabrook. I found work on railway location and construction to be all that I had expected and had looked forward to. My future course was to lead me to further guidance from Mr. Silcox and Mr. Gunn for many years ahead.

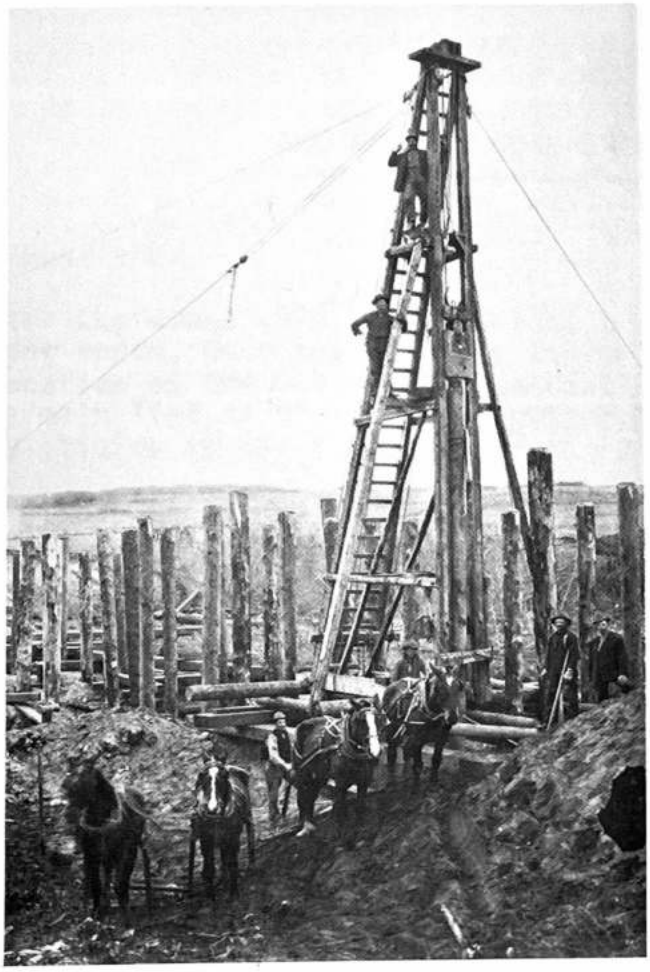
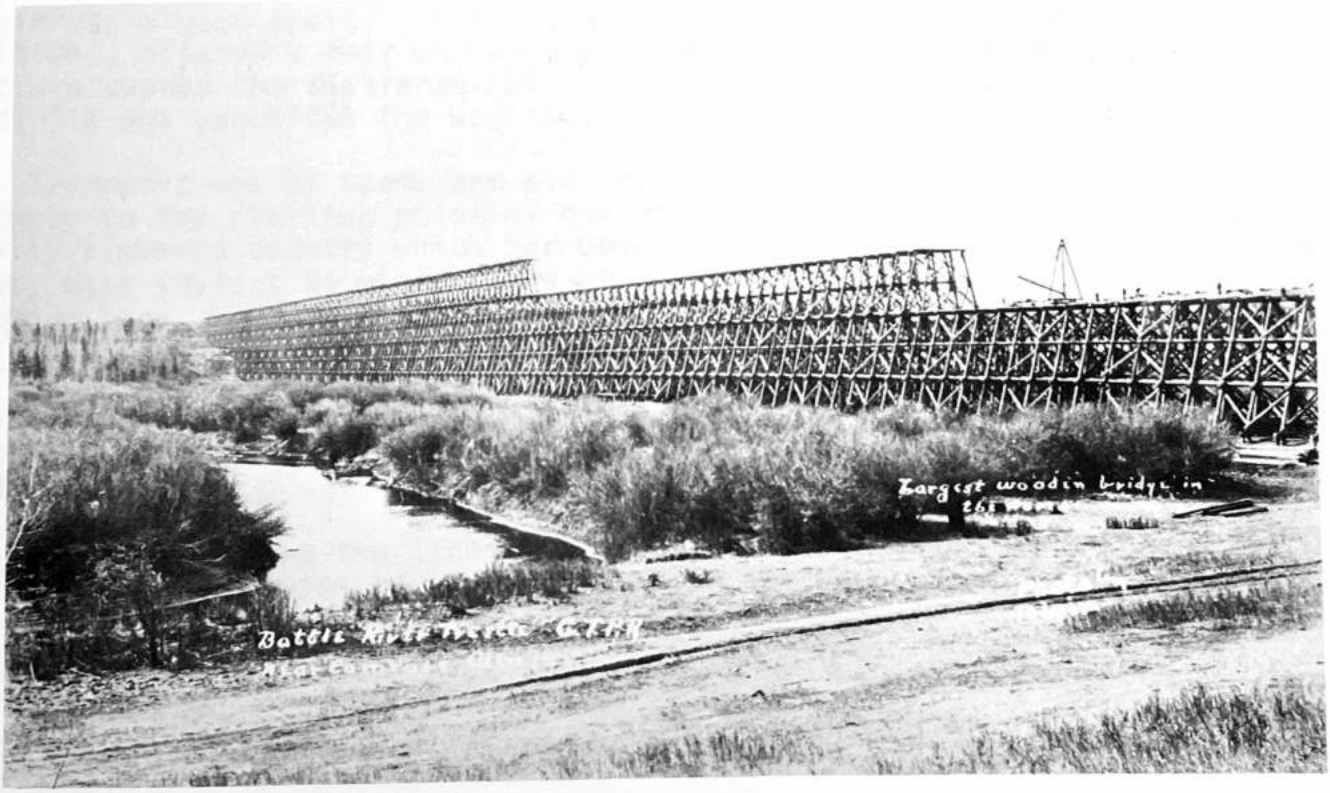


Photo 10. Driving piles, with drop hammer and horse power, for timber bridge.

Photo 11. Pile and frame trestle crossing Battle River, 1910, near Camrose on G.T.P. Tofield-Calgary Branch, said to be the largest timber bridge ever erected.



5. THE ALBERTA COAL BRANCH

Winter Experience

After Christmas 1910, at Edmonton, I was assigned as rodman, $45.00 per month, on a survey party to run some revisions for the final location of the G.T.P. Alberta Coal Branch which turned off from the main line at Bickerdike, west of Edson, to the Mountain Park coal fields in the foothills of the Rocky Mountains.

First of January 1911, we travelled by train to the end of steel, then approaching Edson, the first divisional point west of Edmonton. Then we walked, crossing the spectacular timber bridge nearing completion across the Sundance Creek by the Big Eddy of McLeod River. From there one could view the Rockies...a magnificent expanse. The stringers were in place but the ties had not been laid. It was a new experience to walk the stringers, 9" wide, at a considerable height. Some who chose the alternative, to walk down the steep slope and up again, were considered "chicken"!

Bickerdike was a ramshackle community of log shacks and tents housing general stores, restaurants, laundries and bunkhouses, with a goodly number of gamblers, bootleggers and sporting ladies.

In all such communities there are special characters. One was an engineer who bent his elbow too frequently. He had a double deck bunk and occupied the upper when in condition to climb up to it, at other times he flopped into a sort of bugs' nest below. Martin was a good sport. Once a travelling pugilist staging exhibitions, offered a fair sum to anyone who could stand up to him; Martin accepted the challenge but had a rough time and, after, said, "It was beautiful the way that fellow hit me".

Transport was by teams and sleighs. We travelled southwesterly to the starting point of our work. It was through heavily timbered country which had been burned over by forest fires, then subject to wind. This windfall was of large diameter and long logs, badly criss-crossed; walking through it required agility. The only practical way was to walk along the timbers and jump from one to another as necessary to keep direction. It was tough at first, especially with snow on the logs, but a new, exhilarating experience. Snowshoes were useless under those conditions.

After completing the line revisions, we were engaged in building log shacks for one of the resident engineers to come on

construction; this included excavating a cellar for the cookhouse. Fifty below zero temperatures had frozen the earth to depths of five to six feet. We had no explosives so had to thaw layers about six inches deep by fires, then pick it out - and so on; another new experience!

The transitman very kindly helped me to become accustomed to life in the bush and the work too, particularly in the mathematics required on the survey.

Staking Coal Claims

Towards the end of April, Mr. Silcox showed up at Bickerdike and I was instructed to report to him. He, together with two well known prospectors, Bill and Mort Tier, was interested in a coal field they had discovered. A coal claim was one mile square. They wished to stake four claims, so I was taken along to fill in. The snow was just about gone and we travelled on foot into fairly high country and staked four claims. However, there was a heavy fall of new snow. We had no snowshoes or snow glasses; the reflection of the bright spring sun made conditions very difficult. Mr. Silcox became snowblind, so much so that we had to help to maintain direction. The only remedy was to apply damp tea leaves in a bandage about the eyes. Fortunately the trip ended without further mishap but it was not successful financially. Years later, though, this field was proved up and mined. The town of Mountain Park was established as headquarters of this industrial enterprise, at an elevation of 5815 feet above sea level. The G.T.P. constructed a spur to serve it. This attains highest elevation within the Canadian National System.

Photo 12. G.T.P. Alberta Coal Branch turned off from the main line at Bickerdike, winter 1910/11.

Photo 13. A rough and tumble joint, with bootleggers and all.

Photo 14. Mounted L to R. Engineer i/c Construction, C.E. Ewart and the principal contractor. Standing, J.L.C., rodman; L.E. Silcox, locating engr. and Jimmy Moors, general store proprietor.

Photos 15 & 16. Location survey for the Alberta Coal Branch was through vast areas of bush and windfall difficult to travel, winter 1910/11.

6. SURVEYS TOWARDS GRANDE PRAIRIE, ALBERTA

After returning to Bickerdike, May 1911, Mr. Silcox went to Edson to assemble a party to run a preliminary location survey from a nearby point on the G.T.P.R. main line, towards the Grande Prairie-Peace River country which was being opened up by the influx of settlers. I was to be one of the instrumentmen-levelers, $75.00 per month.

Walter Groat, of the well-esteemed old time Edmonton family, was engaged with his pack train, 40 horses, for transport. Walter was excellent and so was everything about him, assistant packers, horses and equipment. We were also favoured by an experienced bush cook, Frank Dickinson. Not only was he a first class cook, he was a fine fellow to be with. Walter and Frank worked together as a team, moving camp, etc. Walter was an excellent shot. I saw him bring down a Canada Goose, on the wing, with a single round from his 30/30 carbine. This was not a fluke, he could do it!

The general procedure to conduct a preliminary survey during this era - before the advent of aerial photography and photogrammetry - was:

The Chief reconnoitred ahead to select the general route and then instructed the transitman to direct the axemen, usually four, to cut the line through the bush, a series of courses in relation to the topography and other controlling features, such as the maximum rate of gradient, to be maintained. As each course was cut the transitman would move forward with his instrument and measure the angles between courses. Two chainmen, and one axeman to make stakes, followed to measure the length of each course. A stake was driven every 100 feet, termed a station; the stakes were numbered progressively showing the accumulated distance.

The leveller then, with his rodman, established the elevation of each station above mean sea level and at intermediate points where abrupt changes might occur. At every tenth station, or so, the leveller left a note showing the elevation of the respective stations.

These notes were picked up by the topographer who followed, with his rodman and chainman, to take notes to plot the topography for a width of 500 to 1000 feet, both sides of the survey centre line, to be shown with contours at five feet vertical intervals, or ten feet V.I. in particularly rugged areas. This was indeed a

busy job. It required a man of exceptional ability to maintain direction and judge elevations in the bush. His only instruments were a hand level and a fifty foot tape. If he measured everything, he would never be able to keep up with the transitman and the leveller. He plotted his notes on sheets in the form of sketches to scale, showing all pertinent features - contours, streams, lakes, etc.

The draftsman worked in the office tent in camp. He, too, had a busy job, to calculate the data turned in from the field daily, and to plot maps and profiles. In addition to keeping the original maps and profile up-to-date, the draftsman was required to trace each, showing the proposed location as projected by the Chief, together with an estimate of cost to construct; all this was completed in the field.

The cook was assisted by a cookee, and a bullcook cut wood. "Roll-out" was called at 5:45k and breakfast was at 6:15k. After finishing breakfast, each man made up his own lunch, usually bread, ham, jam and cookies or cake; if he did not have sufficient, it was his own fault. Lunches and a tin cup were carried by each man on his belt. During winter, lunches quickly froze solid. At noon they were thawed by a fire and a large pail of tea was brewed in the field.

The field men left camp promptly at 7:00k and walked through the bush to and from the working point. The distance varied from one to six miles, relative to the respective position of camp and the daily working point.

Life was good. There was something of new interest over each hill and around the river bends. Food was restricted to what could be transported by pack train without spoiling; this meant no fresh meat, vegetables, fruit or eggs, excepting when fortunate to secure game or other wild products. However, there was one treat, canned fruit for Sunday supper, otherwise, it was considered wasteful to pack watery, canned goods.

Trips to town were unheard of. Personnel remained on the job until the project was completed unless one resigned or was fired. In the case of resignation, it was up to the person concerned to find his own way out; if discharged, it was the company's responsibility.

Photo 17. G.T.P. preliminary survey northerly towards Grande Prairie, 1911, used a pack train of forty horses for transport.

Photo 18. Walter Groat, head packer - note method of carrying rifle under saddle flap.

Photo 19. Fording a creek.

Photo 20. Camp by the Athabasca River, where the writer was lucky he was not fired.

Surveys Towards Grande Prairie, Alberta

During the course of the summer, I had three memorable incidents. Mr. Silcox received word that the Western Region Chief Engineer would shortly be at the end of steel. I was sent, by walking via the pack trail, to take an up-to-date map, profile and report to the Big Chief. This was my first meeting with a senior railway executive in his ornate business car and I was duly impressed.

Considering my return trip to camp, I observed an alternative to walking; the ferry operator at Wolf Creek had a small, home-made row boat. He was willing to sell it for $5.00, so the deal was made. It was late in the evening and cool when I started out. The kind old fellow noticed that I had no coat and he gave me a tattered jacket without buttons; he soon remedied this by giving me a couple of nails. I rowed off down the McLeod River. I had no knowledge of its character, excepting it flowed northerly and nearby our camp. During darkness, which was not long, I held to the centre of the current and passed through some rapids. In the morning, about nine, I recognized a point which I thought to be near our camp, so landed and only had about a mile to walk into camp, by a tributary creek. I was later able to sell the boat.

The other incident I remember, I came close to being fired for a damn fool stunt. At the time, camp was by the Athabasca River. We finished the particular day's work some miles upstream from camp; the swift flowing water was fascinating and it appeared that to ride on it would be better than walking five miles through the bush to supper. John Gladue, Jim Brown and I improvised a crude raft, cut poles and boarded, and were quickly into the current. Jim was a bit slow and was left behind, shouting abuse to John and me, but our move was quite uncontrollable. We were powerless in the current. All went well for some distance, until we came up to a "sweeper", a tree leaning out from the bank just above water level. There was no avoiding it. John, in front, was able to jump over the sweeper and regain the raft as it passed under, but being on the stern, I was swept off and clung to the upstream side of the sweeper. The current was so strong at my back that it took considerable effort to climb onto the log and work ashore, only to discover I was on an island and had to swim to the main bank and walk, not far, to camp. In the meantime, John had come opposite camp and swam ashore. The Chief and others were scanning the river upstream for me when I arrived. Mr. Silcox really gave me a working over; there was no mistaking what he thought of such an ass.

Surveys Towards Grande Prairie, Alberta

On another occasion the Chief was again very forcible. Somehow or other the subject of working hours came up - why I do not know, for I never cared how long I worked. Mr. Silcox looked me straight in the eye and said, "Leslie, I will give you to understand that you will work whenever I want you to". What a difference from the present age of unions and labour contracts; I believe we were happier with individual initiative.

In September the project north of Edson was shelved and the survey party moved in. We said good-bye to Walter and his horses. It had been a grand summer. Frank baked delicious raisin buns; trout and grayling could be taken from the creeks.

Competitive Lines

Considering all the controversy there has been through the years with respect to rail service to the Grande Prairie-Peace River country, one ponders whether it might not have been beneficial for the G.T.P. to have built northerly from Edson, or from near there, to provide the shortest practical outlet for grain to terminal elevators at Vancouver.

During 1911 the Canadian Northern was also surveying towards Grande Prairie and in 1919 constructed from Edmonton as far as Whitecourt. More recently this line has been extended to Windfall, serving the Swan Hills' natural gas and chemical industry, and where a few of the great grizzly bears that ranged the prairies in the era of the buffalo herds are struggling to survive, as man is closing in on them.

The first railway into Grande Prairie country was the Edmonton, Dunvegan & B.C., during 1915, initiated and constructed by one of the leading contractors of that era, J. D. McArthur. This project failed financially and is now incorporated in the Northern Alberta Railways, operated jointly by Canadian National and Canadian Pacific, providing an outlet to Edmonton.

More about this subject will be discussed later.

Photos 21 & 22. Confluence of Wolf Creek with the McLeod River, where the boat was purchased for the overnight run downstream, through several rapids; below, the point it ended, July 1911.

7. G.T.P.R. - TETE JAUNE TO PRINCE GEORGE, BRITISH COLUMBIA

Final Location Survey, 1911-12

After moving in from the Athabasca River to Edson, Mr. Silcox lost no time in entraining his party to travel forward, over the newly laid track to the end of steel approaching Fitzhugh, since renamed Jasper. Grading was in progress to the Yellowhead Pass. We walked over the partly graded roadbed and through the Pass to the east end of Moose Lake, a magnificent expanse of clear water fed from mountains which rise steeply from the lake shores, particularly on the south where, during early summer, avalanches frequently thunder down into the lake. This caused both the G.T.P. and Canadian Northern to locate closely adjacent to each other along the north shore of Moose Lake. Now there is only one track, the Canadian National main line to Vancouver and to Prince Rupert. Westerly from Red Pass Jct., the C.N.R. was retained to Vancouver and the G.T.P. to Prince Rupert.

From the east end of Moose Lake, the Silcox party was able to travel by water to the outflow - the Fraser River - at the site of present-day Red Pass Jct. From there the Fraser is too turbulent for navigation through to Tete Jaune Cache, so that distance was covered on foot.

We arrived at Tete Jaune late in September, 1911. The only habitation was a camp of Indians. They were on the rampage, brought on by a visit of whisky pedlars who came in from the south, through the Albreda Pass. One man was shot that night. This was the point where we were to commence to survey the G.T.P. main line westerly through the upper Fraser Valley.

As it was late in the season, no time was lost to build scows and move down to a convenient camp site and get to work on the line. I was draftsman. As the timber and brush were heavy, including "devil clubs", daily progress on line was restricted to from four to five thousand feet, notwithstanding five excellent axemen. Some trees were so large in diameter that it was necessary to triangulate around them, this being quicker than endeavouring to fell them. Therefore it was not difficult to keep the maps and profile up-to-date, so the draftsman was required to assist about camp - cut wood, etc., especially on moving days when the cook, cookee, bullcook, draftsman and one or two axemen struck camp, loaded the gear and supplies onto scows, manned sweeps, fore and aft, and floated down river...very pleasant on a fine day...to the new camp site and set up camp. The line crew, after

packing their personal gear, went out to line by boat and came into the new camp for supper time.

Winter Cracks Down

Time passed quickly. Freeze-up was soon upon us and it was necessary to change our mode of transport. Suitable birch was cut and carved into hand sleighs. From then through to spring break-up moving camp and freighting supplies was by hand sleighs. All members of the party, from the Chief down, took a hand in this slugging work, usually two men hauling and one pushing each sleigh. Snow was deep and, at times, wet. This snow condition was very hard on snowshoes. Repairing snowshoes was a nightly chore. Babiche was made from moose hides, easily obtainable. Caribou hide makes superior babiche but it was scarce. Temperatures dropped to minus forty degree Fahrenheit.

Camp Accommodation

Camp was very comfortable. Ofice tent, 16' x 16' with 5' walls, housed the Chief, transitman, draftsman and leveller, always in their respective corners; the Chief and draftsman on each side of the drafting table and the other two at the front corners. A Queen heater (tin stove) was set near the centre and an improvised wash stand near the door. Beds were made of spruce or balsam boughs and the floor was covered with boughs excepting close to the stove. This arrangement for the office tent was about standard.

Lighting was important for the office and cook tent. It was impractical to use other than candles, the large diameter tallow type commonly used for carriage lanterns. Coal oil was out for, when moving frequently, it might come in contact with supplies. Flour was particularly susceptible to tainting if anywhere near to coal oil. Gasoline lamps were not yet on the general market. About six candles on the drafting table gave fairly good working conditions. When there was a shortage of candles, we improvised with "bitches", a tin saucer of melted tallow with a wick. This was somewhat messy but served the purpose.

The cook tent and dining tent, pitched hard together, were both 16' x 16'. The cook stove was of sheet metal. Table tops were made of canvas nailed to lathes; they could be rolled up for

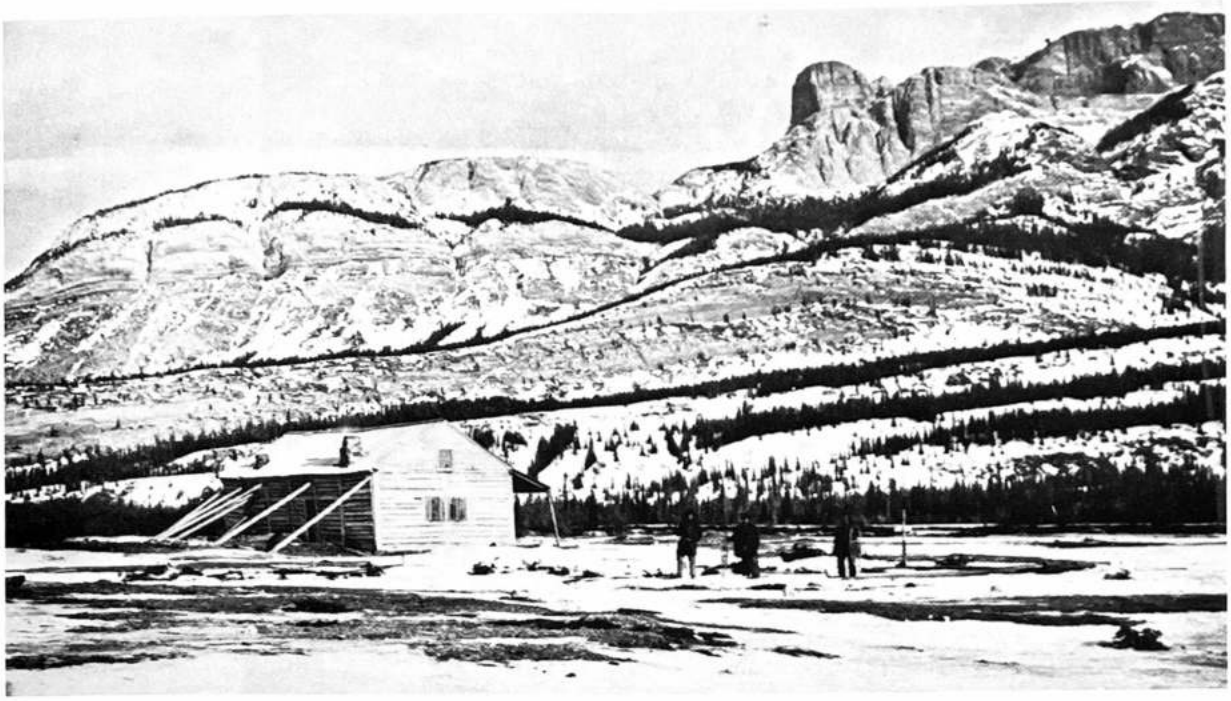


Photo 23. Enroute of Sir Sanford Fleming's survey, east of present day Jasper, approaching the Yellowhead Pass, January 1872. From the Public Archives of Canada.

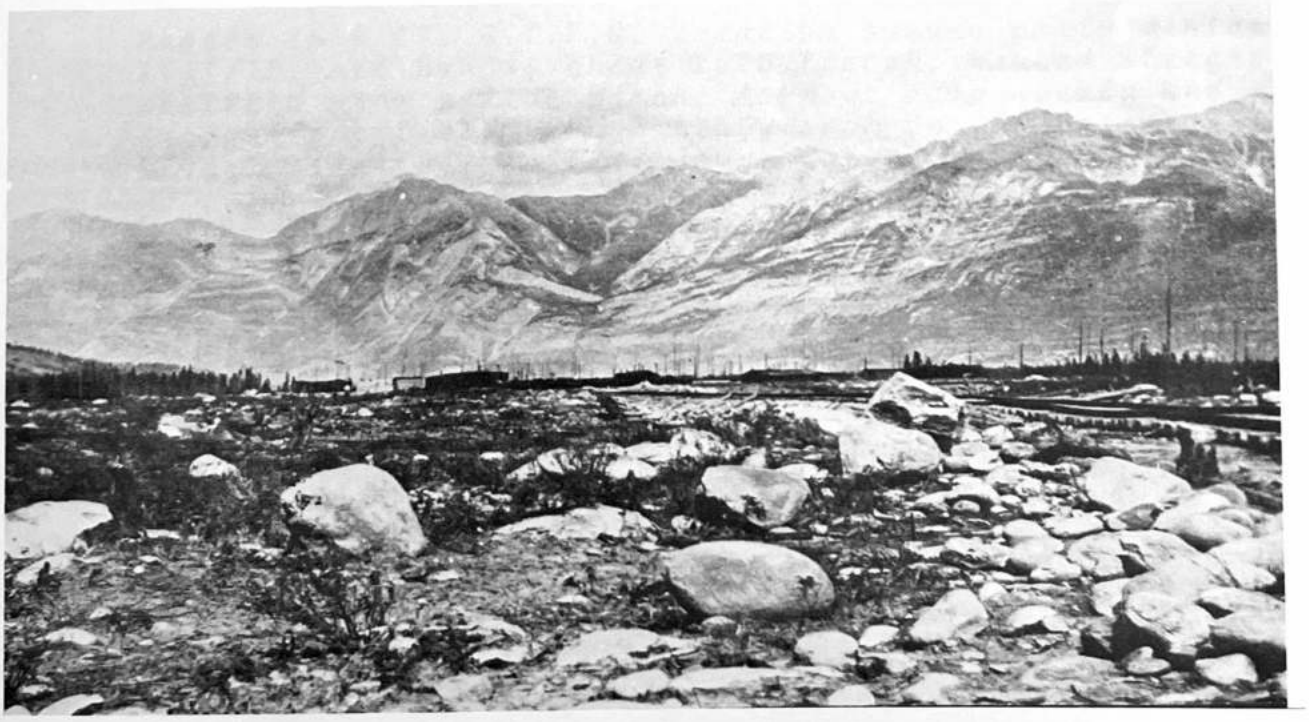


Photo 24. Site of Fitzhugh, fall 1911, re-named Jasper.

Photo 25. At Tête Jaune Cache

Photos 26 & 27. G.T.P.R. location survey party winter 1911/12. All hands, chief to bullcook, hauled sleighs, whittled from native birch, to move camp weekly and freight supplies through heavy snow on the Fraser River westerly from Tête Jaune Cache, B.C.

moving. Table legs and benches, etc., were cut from the bush at each camp site. Meals could be taken in comfort, summer and winter. The cook and cookee slept in the cook tent. They had to be up by 4:30k to light fires, thaw out food which had frozen overnight and prepare breakfast - generally oatmeal porridge, hot cakes and bacon with pure maple syrup and coffee...very appetizing.

Also, there were three bunk tents, 14' x 14', to accommodate the others of the party. No fires were kept going overnight. The occupants of each tent would take turns to make dry kindling before turning into bed and, in the morning, jump out, in bare feet and shirt tail, to ignite the fire; in a few minutes it would be roaring hot.

Sanitation in camp was limited to a pole set over a hole in the ground; in winter there was no hole. Toilet paper was unheard of; leaves and moss were very handy. After some years of this treatment, hemorrhoids was a common complaint among old time engineers and surveyors. Sitting on frozen logs and cold rocks contributed to this unpleasantness.

To pitch camp during winter, it was necessary to clear each tent site of deep snow, cut poles for tents and tables, cut firewood for the cook stove and heaters, also cut brush for beds and flooring. After getting settled in with a good fire and fresh fragrant brush, however, it was solid comfort.

Mr. Silcox Took Leave and Mr. Gunn Arrived

Early in December, Mr. Silcox took leave to spend Christmas at his home in Wales. Mr. L. C. Gunn took over. Although they had quite different backgrounds - Silcox graduated in London, whereas Gunn commenced in the western U.S. as a packer - they were very similar in many respects. Both had natural aptitude for making appreciations of the country and conditions which would affect railway location and they had further developed this to a very high degree. They were excellent mathematicians. They were somewhat small of stature but wiry and quick of movement, proficient in all crafts required to conduct surveys on the prairies, in the forests and in the mountains. They were men of high personal character and highly esteemed. Each took a keen interest in all members of the party and gave much time and patience in tutoring any who were keen to advance. Therefore the direction of the party proceeded in much the same happy manner.

Moose and beaver were plentiful so we were seldom without fresh meat. Roast beaver, in appearance similar to a suckling pig, is delicious. Some of the fellows made extra cash by trapping martin, mink and weasels (ermine).

Dugout Canoes Were Fashioned

With the approach of spring, 1912, the snow became increasingly wet and heavy. The river ice commenced to rot and break up, became unsafe for travel, and stalled progress until the river opened. During this period, we built dugout canoes from cottonwood logs for summer transport. The only tools we had were axes and crosscut saws. With no adze to finish off the interior, our star axeman conceived the idea of sharpening the blade of the one round-mouth shovel on hand; this worked to perfection. The largest canoe was thirty feet long, finished to true lines and balance. John Gladue and I teamed up to carve out a sixteen footer, our pride and joy. Paddles were carved from birch and poles from spruce.

Downstream travel was by the current and paddle, upstream by poling crossing from bank to bank as necessary to be on the shallow side of each bend; it was quite an art to make these crossings in the swift current without losing distance. Usually there were two men to a canoe, both poled on the same side; with experience, good time could be made. This proved the versatility of the party to meet changing conditions with whatever means were at hand - obtainable from native timber.

A Curious Bear Sniffs Odours from Camp

One fine spring day when we were enjoying lunch in camp by the Fraser River, Bill Rowe, a bit late, came to the table and said to me, "If you want to shoot a bear, there is one on the other bank, directly across. Take a canoe and slip quietly over." As this was my first opportunity to try for a bear, I lost no time in going for my rifle, a Ross .303 sporting model, and to cross the river. The bear presented a broadside target but I was so damned anxious, I missed and it bounced up the bank unharmed into the timber. Then, I had to return, red-faced and ashamed. Nine years later I met Bill in Prince Albert. He said, "Do you remember the bear?"

Photos 28 & 29. Following hauling sleighs through the winter, during spring break-up we carved canoes from huge cottonwoods, paddles and birch and spruce poles for summer transport on the Fraser River.

Photo 30. Moose were plentiful, this one was killed with an axe when swimming.

G.T.P.R. - Tete Jaune to Prince George, British Columbia

Economics of Railway Location

The location of a railway is its foundation affecting the economy of operation and maintenance throughout its life. The locating engineers on the main line of the G.T.P. were given guide lines, set to very high standards, based on the "Economic Theory of Railroad Location" by A. M. Wellington, published during the 1880's. To a locating engineer, this was about his bible. It discussed, in great detail, all the affects of train operation, maintenance-of-way and equipment per train mile, and capitalization of costs justified in construction expenditures to result in securing the principal controlling factors - minimum rate of ruling gradient, rise and fall, distance, degree of curvature and angles. For example, the guide lines stated, that it would be justifiable to expend up to $100.00 capital to eliminate one degree from the central angle of a curve, based on the estimated traffic and costs at that time.

The rate of ruling gradient is of paramount importance. The locating engineers, with skill, patience and determination, established the maximum ruling gradient against westward traffic through to Prince Rupert, 0.40%, compensated for curvature, and, also against eastward traffic, excepting for a short section of 1.00% on the "Tete Jaune Hill" ascending to Red Pass Junction. The Canadian Northern engineers were equally skillful in not exceeding 0.40% gradient against westward traffic to Vancouver, also eastward, excepting a section of 0.70% approaching the Albreda Summit, between Blue River to Red Pass Junction.

Therefore, Canadian National, with the amalgamation of the G.T.P. and Canadian Northern, has the advantage of the lowest rate of gradient through the Rockies of all railways on the North American continent and, also, the minimum "rise and fall".

Serious Controversy

Shortly prior to break-up we were camped a few miles down from the mouth of Dome Creek. The System Chief Engineer from Winnipeg, Mr. D. B. Kelliher, and the engineer in charge of the Mountain Division, Mr. John Calaghan, came to discuss a major line revision recommended by Mr. Gunn. Although Mr. Calaghan strongly supported Mr. Gunn, Mr. Kelliher did not approve this revision, which was on the opposite side valley and included a diversion of the Fraser

River. Mr. Gunn resigned, on the spot, and went to the Pacific Great Eastern Railway, between Prince George and Squamish, being surveyed under a charter granted to J. W. Stewart of Foley, Welch & Stewart - eventually, after many years of adversity, to become the viable British Columbia Railway. Mr. Calaghan also left the G.T.P. and became General Manager of the E.D. & B.C. Railway, now the Northern Alberta. Both these engineers were men of strong conviction. As draftsman who prepared the maps and profiles, I was present at the time of this controversy and it made a deep impression on me.

This section of line was constructed as originally planned. Until recently maintenance has been costly, due to landslides. As Chief Engineer, CN Western Region, 1945 to 1958, I have contemplated on what the condition might have been if Mr. Gunn's alternative line had been accepted...an unanswerable question.

Construction Commenced, Summer 1912

Mr. Gunn left camp immediately. After his resignation the transitman, Bill Rowe, took charge to complete the few remaining miles of location and make preparations for construction. Bill was appointed Resident Engineer and I instrumentman with him, on section 29; eight miles of exceptionally heavy work, immediately west of the second crossing of the Fraser River, which was just downstream from Dome Creek.

For the first month or so we continued to use the tents from location and Bill retained the fine dugout canoes. As the time became available, we built three log shacks - office, cookhouse and bunkhouse - from nearby cedar logs. They were large and not easily manhandled but the finest of material. Slabs of cedar were readily split for window frames, door jams, doors, roof shakes, flooring and furniture. This was a very comfortable home, manufactured on the spot, in a clearing facing the fascinating flow of the Fraser River. The only items brought in were window panes, nails and stoves.

The contractors' camps, of course, were much larger. Multitudes of common flies were a serious pest. In the large contractors' cookhouses, flies swarmed on all foods, particularly cakes covered with icing. These conditions brought on an epidemic of so-called mountain fever. Tent hospitals were set up but there were many deaths. Fortu-

nately, in the comparatively small engineers' camps, it was possible to keep this situation under reasonable control. Although often invited into the contractors' for lunch, we preferred to eat sandwiches out on the line.

As the right-of-way was cleared of the heavy timber, grading commenced. It was a series of very deep cuts and relatively high embankments. The contractor's principal items of equipment were steam shovels and dinky locomotives - fired with wood - and cars to haul the excavated materials to build the fills. This was accomplished by erecting temporary timber bridges in the gullies up to the height of railway grade for the dinkies and cars to run out on and be dumped. Culverts were also built of native timber. Accidents were not infrequent; the materials to be excavated were difficult to handle and subject to sliding. I recall a steam shovel being buried and a dinky ran over the end of a trestle, falling below.

The principal contractor, Foley, Welch & Stewart, established the base for work through the Upper Fraser Valley at Tete Jaune Cache. A large camp was set up; the cookhouse and dining room could accommodate 500 men. The end of steel reached there and, as mentioned earlier, the Fraser is navigable west of Tete Jaune. Two stern wheel river steamboats, wood fired, were built for servicing camps downstream, as far as the Grand Canyon. This service was supplemented with scows, manned by two men with sweeps. On arrival at their destination the scows were broken up for lumber to be used in camps. The crew then walked back upstream. The daily rate for a scowman was good - $4.00 per day, sunrise to dark.

The engineer's duties were similar to those described for construction on the prairies, but in the mountains the dimensions of cuts and fills, bridges and culverts, etc., were of much greater magnitude and staking on the steep side hill slopes called for considerable ingenuity.

Of course, we enjoyed some relaxation...hunting, fishing, swimming, canoeing and amateur mountain climbing. We became quite proficient at poling canoes, both for sport and work. It was fun to warn newcomers of the unique animal whose habitat was the steep slopes - the sidehill gouger - it was a somewhat unfriendly creature with a peculiar leg structure. Both the front leg and back leg on one side of its body were shorter than the corresponding legs on the other side of its body. This enabled these animals to negotiate

along slopes in an upright stance with considerable agility, but if they could be turned about so that their short legs were downhill, they could be easily captured.

Another little fun maker, with the very naive, was to talk about snipe hunting and, if the victim appeared interested, to offer to organize a hunt for him to take part in. He would be given a sack and a candle lantern, then, after dark, he would be taken out to a swampy area and instructed in much detail to crouch down with the mouth of the sack open and the light at the back, to await the game which would be attracted, like moths to light, and be ensnared in the sack. The instigators would then clear off back to camp, leaving the victim with the mosquitoes. If he did not have an amiable sense of humor, however, this sometimes backfired; when the victim found his way to camp someone might get a punch in the nose. Such diversions may appear to be childish to persons accustomed to sophisticated city life, but they had their value under the circumstances.

So summer slipped by to winter and to the new year, 1913. In the meantime, after Mr. Silcox went on leave Christmas 1911, he did not return to the G.T.P. but was engaged to run the location for the Hudson Bay Railway to Port Nelson. This was under the jurisdiction of the Department of Railways and Canals, Ottawa. The first of May 1913, I received a message that I was being transferred to be transitman, at a nice increase, from $75.00 to $120.00 per month, and to report at Winnipeg without delay. This required a walk from below Dome Creek to Tete Jaune Cache, under pretty tough conditions during the spring thaw. I went into one camp for overnight; the foreman enquired where I had come from that day. When I told him, he looked at me and exclaimed,"Lord, forty miles through that mud!" From the end of steel it was a train journey to Edmonton and on to Winnipeg...and exciting new horizons.

Tete Jaune Cache

Tete Jaune was about the last pioneer, end of steel, community of log shacks and tents to thrive on railway construction. There were general stores, restaurants, so-called hotels, poolhalls, gamblers, bootleggers and sporting ladies - almost anything to part a dollar from the unwary. In a way, this was an efficient system. It hastened workers with a stake to go broke and return to the job with the minimum loss of time, considerably more of which would

Photos 31 and 32. Construction of G.T.P.R. in the Upper Fraser Valley, heavy excavations were made by steam shovels and material was hauled, by dinky steam locomotives; to be dumped from high temporary trestles to build embankments.

Photo 33. Import of liquor was prohibited. Many ingenious means were taken to circumvent this, as shown by a police discovery of whiskey in hog carcasses, virtually "blind pigs", at Tête Jaune, a hive of bootleggers, etc.

have been required to go through to Edmonton. Occasionally this was expedited; the sharks floated downstream on scows and tied up overnight at the larger camps. This was frowned on, however, as it disrupted job production. The Mounties endeavoured to intercept inward shipments of booze, but they fought some very ingenious pedlars who got the goods in under many clever disguises. One shipment was discovered within the carcasses of hogs, an actual example of a "blind pig".

The life of such conglomerate communities was hectic but short. When the track advanced, Tete Jaune became a ghost.

8. THE HUDSON BAY RAILWAY

Historical Notes

During the 1880's western agriculturists and businessmen commenced to propound for a railway to Hudson Bay, the closest seaboard to the Prairies. The first real encouragement towards this goal came with construction of the Canadian Northern Railway from Winnipeg through Dauphin to Prince Albert by 1906. From a point on this line, named Hudson Bay Junction, where the direction changed from northerly to westerly, the Canadian Northern built to Le Pas by 1908; this was the initial step towards the Bay.

Then the Government, Department of Railways and Canals, ordered preliminary surveys to both Fort Nelson and Fort Churchill. Principally on account of the shorter distance, some eighty miles, to Nelson, it was adopted to be the railway terminal and ocean port.

Railway location surveys were commenced in 1909. The first major obstacle was the Saskatchewan River at Le Pas. It was bridged by 1911 and a contract for construction of the first 185 miles of rail line to Thicket Portage was awarded to J. D. McArthur; subsequently this was extended through to Port Nelson. There were two other major bridges to be erected, to cross the Nelson River from west to east at Manitou Rapids and to cross back to the west bank at Kettle Rapids. The reason for this was to avoid a circuitous route around the west side of Split Lake, a widening of the Nelson River.

Location Survey - Manitou Rapids to Port Nelson

Early in 1913 the Chief Engineer, Mr. John Armstrong, instructed Location Engineer L. E. Silcox to assemble a party and, as soon as spring break-up would permit, to proceed to Manitou Rapids and establish the railway location through to Port Nelson.

On my arrival from the Fraser Valley to Winnipeg, I immediately reported to Mr. Silcox and was introduced to Mr. Armstrong. Much to my consternation, I learned I had been expected some time earlier and, when I did not arrive, it was assumed that I was not coming. Apparently the first message sent to me had not been delivered and a second message had been seriously delayed. As a result, another transitman had been engaged, Jim Wilson. However, I was not to worry, both Jim and I would go north and a solution would be worked out.

The Hudson Bay Railway

On the morning of 24 May 1913, we left Winnipeg by street railway for Selkirk to embark on the S.S. Wolverine for Warren Landing, at the north end of Lake Winnipeg. The entire party, 21 men, and tents, canoes, supplies, instruments and all other necessary gear were carefully checked, for we expected to be away with very limited means of communication for up to eighteen months.

The Merchant's Hotel, with wide open bar, was, and still is close to the Selkirk wharf. It took much patience and all day to load everyone and everything aboard. Many wanted a last drink and would slip back to the bar. Our canoemen were Metis, of Scot-Indian ancestry; residents of the environs. One was about to go aboard when his wife spotted he had a "crock" and a spirited chase for possession ensued around the cordwood piles on the dock.

Correct use of the term "Metis" is to designate persons of mixed French and North American Indian parentage but, it would appear to have been extended in reference to all persons with mixed blood of any origin.

It was evening before all were aboard. The passenger list, in addition to the railway party, included two land survey parties going north to establish meridians and base lines, under Bruce Waugh, D.L.S. and George Herriot, D.L.S., respectively. George later became a highly respected professor of engineering at the University of Manitoba. It was quite a crowd; most were suffering no pain. The rays of a beautiful sunset were reflected on the water and spring foliage when the Wolverine cast off and slipped down the Red River, passing Old St. Peter's Anglican Church, where Chief Peguis, who befriended the early white settlers, rests in the churchyard, and on into Lake Winnipeg.

Towards the north end of the lake there was an extensive field of honey-comb ice, needle sharp; plowing through this wore through the ship's bow and caused her to take on water. Captain Vance was well qualified to counter this situation. He put us all to work moving cargo aft so the bow would lift, then he went over the side to plug the leak to the extent that pumps could handle the situation. When all hands were shifting cargo there was an amusing incident. One of our fellows, Ben, with the remains of alcohol in his blood, kept imploring to the Rev. Fox who was returning to Anglican Mission at Split Lake, "There is a hole in the but (boat)...Pray!"

At Warren Landing all passengers disembarked and the cargo was unloaded. From there to Norway House the journey was by a small steam tug operated by the Hudson's Bay Company and manned by an Indian crew in their colourful attire of that era. The following day I was sent back on the tug for the balance of our party's gear. All was ready to sail except for Mr. Hamilton, the Bay Manager, to come aboard. He walked down the long plank walk from the post to the wharf with much dignity. He was, however, a friendly person and later invited me to lunch with him. I anticipated something special; it was fat sowbelly and beans, but appreciated nonetheless.

Northerly from Norway House we were on our own, two or three men to a canoe with a part of the equipment and supplies. Our head canoeman, Luke Clemons, proved to be an excellent leader in this phase. Good progress was made except for being windbound at Sipiwesk Lake one day. The canoes were excellent, Chestnut 16 ft. canvas covered freight models. In due course we arrived at Manitou Rapids, the distance about 220 miles, including portages around a number of rapids. This was long before the introduction of outboard motors. Along the way we passed Split Lake Indians with York boats on their first trip of the season to Norway House for supplies. They were in a dire hurry for, as common in the spring, their stocks were very low; some years this was a serious situation, especially for the young children and the elderly unable to contend with short rations.

The Chief, Mr. Silcox, selected a camp site convenient for the commencement of the survey, just above Manitou Rapids and then found the end of line previously run to a point a few miles south. He decided that Jim Wilson would be set up there as resident engineer on construction, soon to start. Tragically this was not to be; Jim drowned running the Manitou. It is a deceiving rapid with a dangerous whirlpool. Fortunately his companion, who was not nearly so strong a man, swam to shore.

It was now early June. Mosquitoes and other pests were at full strength. "OFF" and other such lotions, had not yet come on the market. Bacon rind, rubbed on the back of the neck, was thought to be a deterrent but it was terribly messy, especially on a hot day when portaging - sugar tending towards syrup. It was preferable to accept the flies neat. It was not long before they got the better of one man, who had no previous experience. Watching through the transit, I could see him becoming more and more agitated, so much so that he threw his axe into the bush and ran. He had to be sent out.

Photo 34. Hudson Bay Railway survey party leaving Norway House, 29 May 1913, to establish the location to Port Nelson.

Photo 35. H.B.C. York boat sailing with a fair wind.

Photo 37. Portaging York boats

Photo 36. Rowing a York boat

Photo 38. Cree on a portage

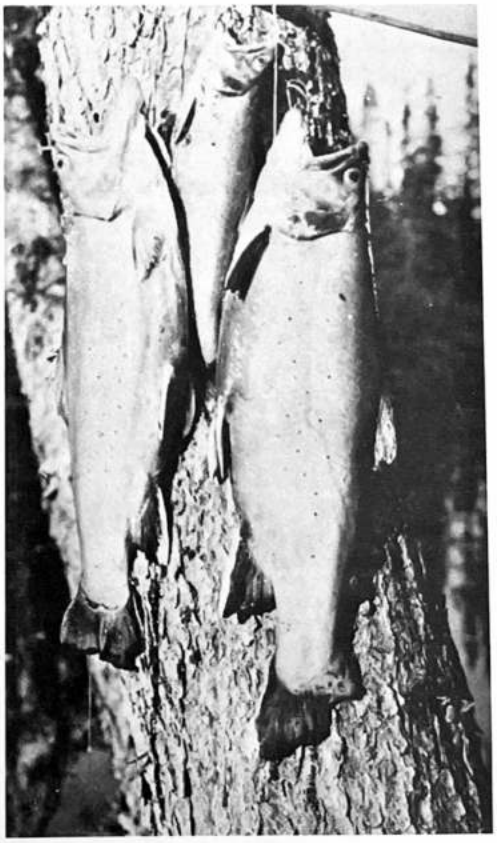


Photo 39. Kettle River trout.

The Hudson Bay Railway

The standards for location of the Hudson Bay Railway were of the same high requirements as on the G.T.P.R., excepting a maximum rate of gradient was permitted on the Thicket Subdivision to be 0.60% compensated, otherwise 0.40% was maintained.

Available maps showed only the main rivers and lakes. The Chief had to reconnoitre all other controlling features. The first line to be run was a preliminary one for the base of a strip map, scale 400' to 1", with contours 5' V.I., for a width of one quarter to one half mile, on which the location centre line would be projected and progressively staked on the ground, and map and profile plotted. The transitman was in charge out on the line, to run it as directed by the Chief.

Minor Revolt

As the direction of the survey from Manitou was some distance inland from the Nelson River, it was necessary after two days to pack out a minimum of supplies for a temporary "fly camp" to eliminate the daily time walking from camp to the working point and return.

Some of the crew, chainmen and axemen - who had been "recommended for employment" - on the second morning objected to the amount of packing, so I led them back to the main camp and reported to Mr. Silcox. He discharged the men involved on the spot, much to their surprise as they had the opinion that being so far away from town they were in a position to dictate as to what they would do. They had not considered the Chief's character. He immediately struck camp, leaving the insurgents on the river bank with a few days' rations to await Split Lake Indians enroute to Norway House. The Chief, with the loyal members, paddled off to Split Lake Reserve.

Manitou to Split Lake

Below Manitou Rapids there is a long, ideal reach. The current is swift but smooth flowing between high banks to Grand Rapids, where the river turns abruptly into a very confining channel, quite unnavigable.

Grand Rapids portage was not long, but it was over a rocky hill with very steep slopes. At the summit there was a windlass

for hauling York boats. There was a fascinating story about this spot. During the rivalry between H.B.C. and the Northwesterners, one laid an ambush here for the other's crew struggling up the hillside at great disadvantage. One could imagine what a fight it must have been!

Grand Rapids is now the site of Manitoba Hydro's Kelsey generating station, serving power to the International Nickel at Thompson. Downstream there is another rapid (it can be run safely), before the river flows into Split Lake.

Some Indians Were Hired

The Indian Reserve, H.B.C. post, Anglican Mission and R.N. W.M,P. were situated adjacent to one another at a commanding site on the west shore of Split Lake. It was a well administered community. The Rev. Fox preached strenuously that "cleanliness is next to Godliness", with good results.

As the Indians had made one York boat trip for supplies, Mr. Silcox had no difficulty in hiring some of the younger men as chainmen and axemen to bring his party back to strength. These men quickly learned what was required. They were fine fellows to have in camp, clean and mannerly, thanks to the influence of the Reverend gentleman. Indians do not like to be regulated entirely by the clock. The best method to gain their co-operation was to institute a modified form of "piece work", by stating daily that we would run a definite distance, estimated to be a fair day's work in relation to the timber to be cut through, and to strictly honour the deal. This was fun to the Indians. They would go all out and perhaps be through by mid-afternoon. We would then head back to camp, sometimes on foot and other times by canoe. When travelling by canoe we often saw loons; they had to be chased. It was lots of fun to guess where they might surface from a dive, then try to be there to meet them. This was not often accomplished. At the sound of a rifle shot, loons have an amazing instinct to dive before the bullet strikes; their clear, far-reaching, somewhat mocking call is captivating to persons with a love of the North.

Good Progress Was Made

From Split Lake we moved up the Ripple River, a small tributary flowing from the east, and set up camp where it was judged the sur-

vey would cross. We then walked southerly to the end of line as run northerly from Manitou. The next move was to return to the Lake and paddle up the Landing River in a similar manner.

When at Landing River, an older Indian paid us a visit, Jimmy Westaceycut. He knew the country intimately and he had the ability to sketch a passable map showing lakes, streams, muskegs and hilly ground. This was most helpful. It indicated the creeks and portages by which Moosenose Lake could be reached, near the present station of Ilford, then to the Butnau River, Cache Lake and the Kettle River flowing into the Nelson at the foot of Kettle Rapids. The second railway crossing of the Nelson is at these rapids, now the site of Manitoba Hydro's Kettle Rapids generating station, near the present town of Gillam.

Thoughtless Criticism

Early in September, when camp was by the Butnau River, mail arrived by canoemen from the south...one of the few times during the summer. When we came in from the line, everyone was keen to see what letters there were. Very few papers and magazines were ever brought in because of the weight. Mr. Silcox opened and read an official letter and he "hit the roof". To say he was annoyed would be far too mild. The railway auditor at Winnipeg, a Mr. Logan, had criticized the Chief for paying Indians in cash. Although it had been explained that these natives were not accustomed to payment by cheques, the bureaucratic official replied he "could not be bothered with the 'picayune' affairs of Split Lake". A dictionary was dug out to ascertain the exact meaning of picayune. When this sank in, the lid really blew. Mr. Silcox finished supper and, with two canoemen, left camp there and then for Winnipeg, leaving me in charge, saying, "Les, I will not be back. I will try to get you the job." This was a "Bolt from the blue", but at age twenty years, I was confident and had the support of good fellows. In the morning we went out to run line as usual and, in a few days, moved camp over the portages and Cache Lake, to Kettle River. The next move was to a very beautiful site farther down the Kettle, within reasonable walking distance to Kettle Rapids, Nelson River.

Early Freeze-up, 1913

Temperatures lowered quickly. One morning, to cross Cache Lake, ice had to be broken. This was hard on canoes and paddles.

Freeze-up was imminent so, at noon, it appeared advisable to go to camp and move all supplies from the Lake, for it was obvious that the present camp by the river would be home for some weeks. The canoemen were dispatched to bring in dogs and toboggans for winter transport and the Indian chainmen and axemen returned to their home at Split Lake to prepare for winter trapping. They had proved to be first class workmen and good companions. Early in October ice was strong enough to carry men walking. The preliminary survey was run close to the crossing of the Nelson and the location was projected and staked.

Kettle Rapids

On a Sunday prior to freeze-up the topographer, Norman Mackenzie, and I reconnoitred, by light 14' canoe, down the Kettle River to the confluence with the mighty Nelson at the foot of Kettle Rapids. It was an impressive and beautiful scene, especially emerging from the comparatively small waters we had travelled throughout the summer. The setting sun spread a red glow over the rocks and turbulent waters; it was indeed a scene to be retained in one's memory. We made a tentative selection for a bridge site to cross the Nelson from east to west.

A careful survey was made of the area and the location line was established to the proposed crossing of the Nelson. During the freeze-up period it was impractical to move ahead until the river could be crossed with dogs and toboggans; however, this was not too serious as the time was employed preparing a large scale map, in detail, showing contours 2' V.I. for use in structural, bridge design.

We Met An Otter

During a walk on the frozen Butnau River, Mackenzie and I saw a very large otter emerge from a hole and commence to run towards another hole. Although we were directly between this otter and its destination, it refused to turn aside from its intended path. It was easy prey. With a simple tap on the head with my axe, I bagged a prime skin for a collar to go with a set of beaver skins I was gathering to be made into a coat. However, I never got the coat. I later sold the skins and drew a khaki great coat.

Photo 40. Surveying preliminary line for H.B.R. to cross Nelson River at Kettle Rapids, October 1913.

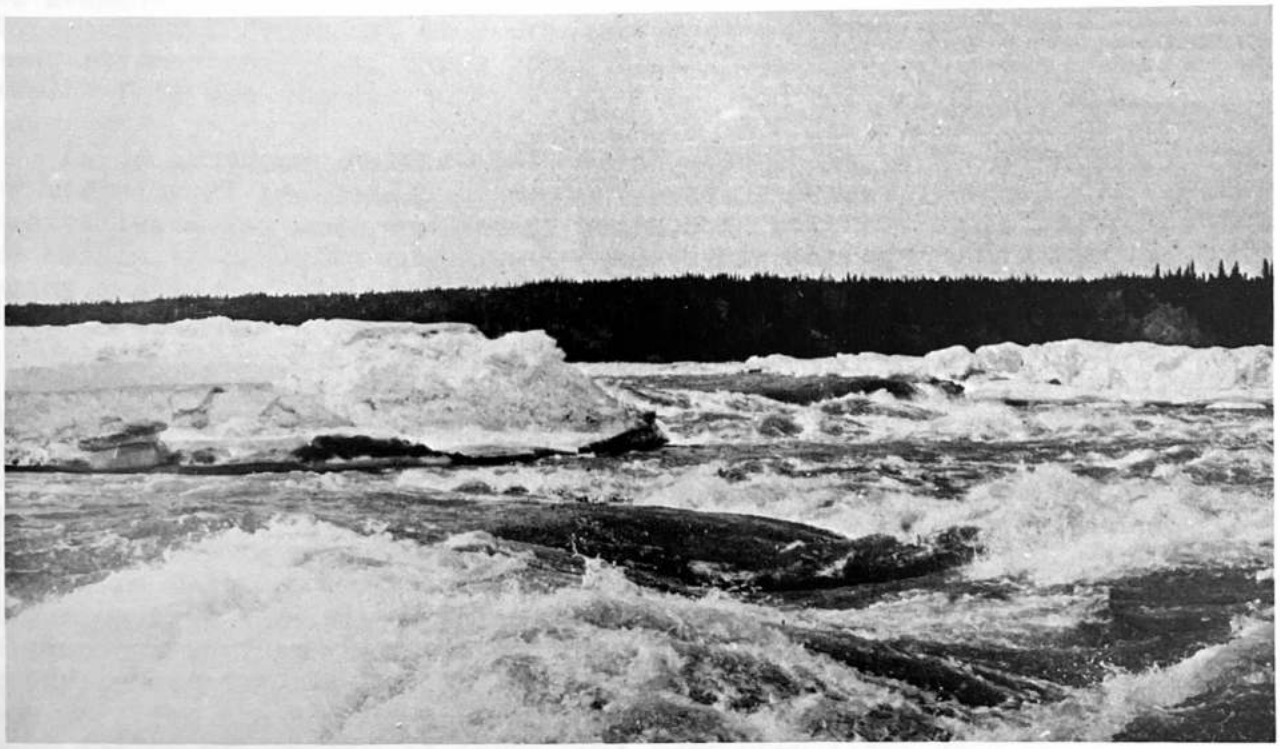


Photo 41. Kettle Rapids during spring break-up; huge masses of ice roared through, magnificent and overpowering.

About ten years later, on the Little Smoky River, Alberta, I had another such experience with an otter. It would appear that, under certain circumstances, otters will not divert from a predetermined course; and, muskrats will act likewise.

A Long Detour

With the winter transport, Mr. Silcox returned to resume command. We were all delighted. He was in good fettle, for he had received an unqualified apology for the auditor's thoughtless letter. Mr. J. W. Porter was now Chief Engineer at headquarters in Winnipeg.

The Chief brought with him some men from Selkirk to replace the Split Lake Indians, who could not be expected to remain and forego winter trapping. There are no better men for surveys in the bush than the Scot-Indian Metis from around Lake Winnipeg; they will work and live under the most difficult conditions, with a joke and a laugh. Sometimes, at the lunch fire, I would be kidded that "There are not so many English-Indian Metis, as the Indian women had to draw a line somewhere." Their candid banter amongst themselves, about the most intimate family affairs, was startling. One example, probably exaggerated, was "Percy, do you remember the winter night I drove out to your place, put the team in the kitchen, climbed upstairs, threw you out and jumped in with your wife?" This was a great joke. They were good fellows to be with.

As it would be another month or so before the swift water in the vicinity of Kettle Rapids would freeze, a detour of some twenty-five miles upstream had to be made to effect a crossing of the Nelson in order to continue the survey northerly from Kettle Rapids. All were keen to get going and the dogs were in first class condition.

The early severe winter conditions had caused the barren land caribou to migrate southerly into the boreal forest and were frequently to be seen in large numbers. It was a fine sight to see them trotting over frozen lakes, kicking up the dry powdery snow and moisture from their nostrils streaming into the cold atmosphere. They were easy targets and many were shot. Meat was plentiful in all Indian trappers' camps and the survey party was never short of it during this season. Caribou tongues are a delicacy. Meat was so abundant that we only ate the best cuts and fed the inferior to supplement the dogs' usual rations of cornmeal and tallow. The dogs were fed one meal a day. One pound cornmeal and one-half pound tallow was cooked in large pots over open fires each evening

and allowed to cool before being fed; this was the dog skinners' final duty of the day. With fifty to sixty dogs in camp, feeding was quite a commotion. The dogs were staked apart on little beds of spruce boughs but, nevertheless, some aggressive animal would contrive to scrap with his neighbour, then there was bedlam. And, on clear cold moonlight nights, there would be choruses to "on high"; much more entertaining than the snowmobiles in use today and more reliable, too, on a cold morning. There was fellowship between dogs and men.

When on the trail, summer and winter, tents were seldom pitched for overnight stops; bivouacs of spruce and a good fire were comfortable, except on windy nights with smoke blowing in all directions.

One night it was convenient to stop at an Indian trapper's log shack. We were invited in and shown every hospitality. This was before the common use of stoves in the outcamps. Large open fireplaces were built with a frame of willows and molded clay which hardened by the heat. The front was wide open up to the roof and out to the sky. Wood was placed in a vertical position so that the heat was reflected into the room, although, of course, much was lost up the chimney. Bannock was baked and other cooking was done in a similar manner to that employed at an outside fire. These clay fireplaces were practical for both heating and cooking. However, I have not heard of one in use for many years. Also, shacks with open fireplaces and relatively free ventilation were more healthful than so-called improved shacks, with tin stoves, tightly "chinked" against intrusion of fresh air.

At bedtime all who could crowd in on the floor were welcome - a snug mass of humanity, red and white, male and female.

The Survey was Resumed

The end of line at Kettle Rapids was picked up and preliminary line extended northerly in general parallel with the west bank of the Nelson, passing by the Long Spruce Rapids, to the proposed bridge site for crossing the Limestone River, which flows into the big river at Limestone Rapids, and then on to a crossing of the only other important tributary before reaching Port Nelson.

Photo 42. Cree fire-place, clay baked on willow frame, woman on left preparing to bake bannock; Scotty Tait observing. To the right, Cree girl and some of our Metis dog skinners, December 1913.

Photo 43. Temporary patch with bacon rind.

Photo 44. Knee-deep in muskeg with transit on pegs for some stability.

This last tributary had a long Indian name, derived from the fact that its mouth resembled the shape, funnel, of a weir and fish trap. Literally translated to "arsehole", original maps show this impolite name. During construction this became modified to "airhole" and, subsequently, to its present name, Weir River.

The party was camped there at Christmas, 1913. There was nothing special for this occasion except that supplies brought in by canoe during the summer were becoming exhausted. The Chief walked alone to Fort Nelson to ascertain whether supplies which were to have been shipped in via the sea had been delivered. He discovered that this arrangement had not been fulfilled and that substitute supplies would have to be freighted in by dog teams over the long route from the south.

The Chief had a Serious Mishap

Just prior to the start of the Chief's return walk, the Nelson River had overflowed above the ice of freeze-up. This overflow, some five feet deep had not frozen too strongly and was then covered with a fall of snow. When the Chief was walking with snowshoes, the weak ice gave way and he fell through. With snowshoes attached to his feet it was difficult to extricate himself but when he succeeded, he had the presence of mind to roll in the snow to gain insulation against the sub-zero temperatues and, fortunately reached a trapper's cabin; it was unoccupied but there was dry kindling and wood by the stove ready to be ignited. This saved the situation. As the Chief was overdue and alone, Luke and I set out with a dog team to search. We found him, not much worse for his extremely cold ducking; it could easily have been otherwise.

The Chief then set out for Split Lake to arrange for Indians with dog teams to travel south and freight in supplies. In the meantime, we were out of flour and other staples. However, there was ample caribou meat and an excellent cook, John MacLeod, to make the best with what he had. Nevertheless, two fellows became apprehensive and decided, against good judgment, to walk out.

After running the preliminary line to within reach of Fort Nelson, the party moved back to Kettle Rapids to commence staking the location and were engaged in this for the remainder of the winter, up to the crossing of the Limestone River.

Breaking Trail and Good Times

There were several long tangents; running transit was straight ahead. At these times I was relieved, to break trail forward in the required direction and to select new camp sites, accompanied by Luke Clemons and his dog team. I enjoyed these assignments. Luke was competent in every way and his dogs were first class. The leader, Nigger, had a short tail, not all husky, but there was no doubt he was boss of the team and he was intelligent. It was my part to run ahead. Sometimes when travelling on old trails which had been drifted with fresh snow, they were not visible but could be detected by feeling the hard frozen snow underneath. I might miss this and Nigger would stop, he would not budge until I regained the trail - he knew. These dogs were always in good fettle, with tails held high. They and Luke were "one". Together, we made a cheerful team. Life was good! Luke was an excellent trail cook; his bannock with raisins mixed in was almost cake. Bannock is superior to bread for the winter trail, as it does not crumble when thawed out.

There were long periods of extremely low temperatures, down to minus sixty degrees. It appeared that the wolves became less fearful of mankind. They seldom came into view but we frequently saw their tracks closely following ours. One bright, but bitterly cold day, Luke and I stopped for lunch by the Limestone. A big grey wolf sat in clear view on the opposite bank, barely a hundred yards away; he was hungry.

Another day, on frozen overflow of the Nelson, almost glare ice, snowshoes were not needed. A wolf emerged from the brush and ran up the river. The dogs spotted him and howled, giving chase. There was no holding them. Luke boarded the toboggan and as the team came up to me, he yelled, "Climb on". We had a merry ride for a mile or so. Of course, it was a one-sided race in favour of the wolf, but it was exhilarating.

During March two visitors called, Sgt. H. Walker, R.N.W.M.P., and his winter companion, a prisoner serving a summary sentence. The sergeant, however, was not a tough jailer and they appeared to be enjoying a break from the monotony at Nelson. They stayed for several days. Harry Walker was an entertaining raconteur. His dogs were all fine animals, decked out with bells and gay ribbon streamers. Harry was well turned out personally; in comparison, our attire was becoming shabby. I wore what had been a good Eskimo parka of caribou but after a hard winter's wear, the hair had all been rubbed from the sleeves.

Photo 46. Luke Clemons, head canoeman and dog skinner, a nephew of "Mark Twain".

Photo 45. Chief Silcox at Port Nelson, Dec. 1913; dynamic, he served in both World Wars - Major L.E. Silcox, D.S.O.,M.B.E.

Photo 47. Scotty Tait, level and draftsman, "liked to fight the elements". Was commissioned in the Cameron Highlanders, 78th Bn.C.E.F.-1915. He won the highest award of all for valour - the Victoria Cross. Capt.J.E.Tait, V.C.,M.C., killed in action during Battle of Amiens, August 1918.

Photo 48. Breaking trail for Luke and his dogs; the leader, "Niger" was small and bob-tailed but clever and definitely "boss". On Nelson River 1913.

Photo 49. Site of the abortive attempt to construct a port at the mouth of the Nelson River 1912-17.

The Hudson Bay Railway

Summer of 1914

With the approach of spring break-up, camp was at the Limestone. Luke took the dogs to Split Lake Reserve and returned with our canoes, closely following the outgoing ice. Camp was moved ahead. All the canoes were run by the most experienced men through the Limestone Rapids.

I was sent, accompanied by a young Indian, to Norway House to obtain replacement of the two men who had left when we were short of supplies and to attend to some other matters for the Chief. All went well until lining up a rapid between Sipiwesk and Cross Lake. Through poor communication - the Indian had very limited English and I was as deficient in Cree - the canoe overturned and much of our gear sank. As the Indian just looked at the canoe floating, bottom up, in an eddy, it was necessary for me to swim in for it and for whatever could be retrieved. Rifle, axe and cooking utensils were gone. We dried out and paddled on our way. Fortunately, we met a party of Indians travelling down river. They kindly gave us enough rations to see us through to Cross Lake post. There we replenished supplies and went on to Norway House without further delay.

During our return journey, we called into Split Lake and learned that "moccasin telegraph" news had wildly exaggerated our loss by the canoe upset, to the extent that eight hundred cash had gone down the river. I had yet to see such a sum in one pack.

At Gull Lake, between Split Lake and the Kettle, we met up with some Indian families. A stop was made to gather gulls' eggs from the numerous nests on the bare rock islands. Pails of eggs were boiled but, on cracking these eggs, many were found to be in an advanced stage of incubation; some had attained feathers. The Indians had a great feed and ridiculed me for foregoing it. It was a bit too much for my taste, although I had not had an egg, other than of wild birds. for over a year.

The round trip distance of this paddling and portaging was 700 miles.

Back to the Line and Transit

Staking the location line between the Kettle and Weir Rivers was done from convenient camp sites by the Nelson. However, from the crossing of the Weir, a thirty mile tangent was projected to Fort Nelson. In between these points the line was too far in from the Nelson to be practicable to walk out and return to camps by the river daily. Furthermore, the area is a vast muskeg, with scattered spruce and tamarac, stunted and gnarled by prevailing winds; the growth rings so close together indicated the very old age of these trees in the "land of the little sticks", so termed by the Indians.

To stake this thirty mile tangent through the muskeg during summer, it was decided to pack in. Each man would carry a part of the necessary supplies, light bedding and equipment, as he worked and three of the canoemen would assist as packers. The very minimum was taken, flour, baking powder, bacon, oatmeal, dried fruit, tea and salt, for seven days' rations.

The axemen were ahead. Their packs were not much of a handicap as there were few trees to be cut and they were small. Chainmen and stakeman followed next, then the transitman, levelman and rodman. As the terrain was uniform, there was little for the topographer and his rodman to do except pack. All were constantly wet, at times wading waist deep. It was difficult for the instrumentmen to keep their notebooks dry. At most set-up points, long round stakes had to be driven, one for each leg of the instrument tripods, in order to support the instruments in a level plane. Even so, the utmost care had to be exercised when moving around not to throw the instruments off line. Overnight bivouacs were made near to where the last stake for the day was driven. The line was through to the port site in five days - six miles per day.

In the meantime, Luke moved the camp down the river. As he was short of canoemen (three were packing on line) it was necessary for John, the cook, to handle one canoe. Luke, always ready to perpetrate a practical joke, led John out into the middle of the river where white whales (belugas) were sporting around. He then made out that he was alarmed that the canoes might be upset, so he, Luke, paddled furiously to clear the area, leaving inexperienced John alone, bellowing and cussing. Of course, there was no danger, but it was one of the little incidents that helped routine jobs along and promoted morale. Luke and John were the best of pals.

Port Nelson

All were keen to reach Nelson and camp by tidewater, and to see an ocean freighter - a new experience to several. Design and construction of port facilities were under direction of the late Mr. D. W. MacLachlan, of the Department of Railways and Canals, Ottawa. He had a large force of engineers, tradesmen and other workers, accommodated in a camp of semi-permanent buildings, all brought in by sea through Hudson Straits.

Mr. MacLachlan was faced with extremely difficult conditions. The mouth of Nelson River is a large funnel shaped body flowing between low banks of clay and boulders. There was no native timber other than small spruce and tamarac, excepting a limited stand some miles up river, and no solid rock for quarrying. The tide is strong and the navigable channel out to deep water is a considerable distance. Knowledgeable pilotage is essential. Very little actual building had been accomplished to this time, August 1914. In later years, Mr. MacLachlan became senior engineer of surveys and design for the St. Lawrence Seaway.

After tying the railway survey with the port base lines and checking our calculated courses with the true meridian, and elevations with mean sea level, we had a day of leisure to visit a ship anchored as close to shore as to be safe. While aboard, we heard through the wirless of the outbreak of war in Europe and of the German rapid advance through Belgium - indeed sad news.

The Return Up River and On to Winnipeg

After co-ordinating the railway survey with that of Port Nelson, the Silcox party commenced the journey to Winnipeg, up against the swift current of the lower Nelson River. The first few miles were with the in-coming tide; then the canoes had to be lined up parallel with the slippery river bank of clay and boulders. Fortunately a strong fair wind sprang up and improvised sails, of spruce poles and canvas flies, were quickly hoisted to take advantage of this favourable condition. It was a wild, exhilarating sail, with wind against strong current, relaxing from lining in and out of the water and mud. One man, who had come in via Norway House in the spring, became alarmed and jumped from the canoe into shallow water, amongst shouts of derision. He had a long, dreary walk, catching up after we had enjoyed supper and were turning in for the night.

During a "smoke" after lining up the Limestone Rapids - there are actually two, the Upper and Lower, an inattentive crew suddenly realized that their unmanned canoe was drifting down into the rapids. Luke took in the situation and with his partner pushed out in their loaded canoe to retrieve the one adrift; he gained hold just as it was about to enter the worst of the rapids and towed it. This meant paddling with great strength to bring two loaded canoes up to safety; it was amazing canoemanship. Both Luke and his partner were experts and powerful, resolute men. They took it all in their stride.

Our flotilla continued up river, through Long Spruce Rapids, to the foot of the Kettle and camp was set up on the west bank by a pleasant bay where black currants grew in profusion, as large and as flavorous as cultivated fruit. A pailfull was gathered and John baked fresh fruit pies; quite a treat but also a potent laxative, causing some to awake and head for the bush that night.

The river at this camp site was abundant with fish, including sturgeon. Fish nets, an integral part of the outfit, were set by the experts - Luke and his crew - with bountiful results. In fact, more sturgeon were caught than could be used immediately, so some were staked out in the river with a line passed through a gill and the mouth. Then someone suggested filling an old canoe as a more humane method of keeping sturgeon alive until required by the cook. This resulted in much merriment when John endeavoured to wrestle a five or six foot fish and kill it. He was given much advice, but no assistance!

John, a son of the Hebrides, knew fish and how best to serve them with the limited means at hand. He said he rarely tasted meat until he enlisted in the army. Sturgeon roe, the untreated eggs, lacking the flavour of caviar, we ate not to offend John, for he insisted it would put hair on the chest and stimualte manly activities. Another of his specialties was the small pockets of tasty flesh found in the cheeks of fish. John would save these for himself and it was a source of fun to sneak these choice morsels.

Of course, we were all deeply concerned about the war. To relieve this subject, however, Luke would pester John, saying he doubted John was a Scot or had ever been in the service. John would grab a pole and go through small arms drill. Such simple amusement is of inestimable value to the morale of a party in such remote country for so long a period with very few contacts with others, except occasional visits from local Indians.

After running revisions to refine a section of location north of the Kettle, the journey up the Nelson resumed, through Kettle and Gull Rapids to the comparatively quiet water of Split Lake; then over Grand Rapids portage, where the capstan stood at the summit, to the magnificent reach approaching Manitou Rapids. A short distance upstream we turned from the "Big" river via a tributary leading to Armstrong Lake and there terminated canoe travel for the season. Then the party proceeded overland along the railway right-of-way, in various stages of construction, to Le Pas, where train service of the Canadian Northern was available to Winnipeg.

Although the fleshpots of the city were keenly anticipated, there was a twinge of regret that the party was to be disbanded. This was especially felt by the four - chief, transitman, draftsman and levelman - who occupied the office tent, each bedding down in the same specific corner after each of the many moving days, and who had lived and worked in close co-operation with seldom a disgruntled word throughout the job, a period of fifteen months.

We would especially miss the healthful canoeing, being on water - lakes and rivers - with some relief from the winged pests of the bush and muskegs and, also, on days of sunshine being partial nudists...it was much easier to wash one's hide than to scrub shirts.

The excitement of running rapids called for real cohesive action, good judgment and quick decision. It was inevitable that one crew or another of the party might occasionally strike a rock. Then the others would paddle by, giving the haw-haw, but no assistance, unless there was imminent danger to the unfortunates, who would have to go ashore for repairs. In a succeeding rapid the tables might be turned, much to the delight of the former recipients of mirth.

It was a simple matter to patch our Chestnut canoes with a piece of canvas and waterproof adhesive. Most Indians, at the time, used Peterborough cedar strip canoes and would make temporary repairs with rind from a slab of sowbelly. There was pride in being a tireless paddler and strong on portages; much has been lost with the introduction of foul smelling and noisy outboard motors.

Mail for Port Nelson

For the time being, Luke Clemons and I were not destined to go south of Armstrong Lake. At the warehouse, known as the "tin house", there was an accumulation of mail addressed to Port Nelson.

Indians declined employment to run these mail sacks to the "Bay", as freeze-up was imminent and they seldom travelled the lower Nelson if they could avoid it. The total distance from Winnipeg, via Red River, Lake Winnipeg and Nelson River, to Hudson Bay is 710 miles. Of a total fall of 740 feet, 500 feet is in the northerly hundred miles from Gull Rapids to tidewater; there are six major rapids, so one may say the final run of the river is almost all rapids. The immense volume is the drainage from the extensive territory between the watershed just west of Lake Superior and the Rocky Mountains, also from the source of the Red River in the south.

As delivery of the mail to Nelson presented a rather serious situation, the Chief said to Luke and me, "If you two fellows would like to run the mail, I will assure you are retained on the payroll, at your regular rates, until you make it to Winnipeg, one way or another." We accepted without hesitation. There was a remote possibility of being granted a return journey from Nelson by ship, through Hudson Straits, to Quebec and thence by rail to Winnipeg.

We pushed off immediately in a sixteen foot canoe, with the mail and the lighest amount of gear practicable, running the Manitou, portaging over Grand Rapids, then running the minor rapid into Split Lake, past the H.B.C. post with only a brief stop, then a merry run on down river. Even at Kettle Rapids we did not make an actual portage but slipped through by-ways, avoiding the main channel. At one point, in spite of Luke exerting all his strength and expertise, the canoe turned end for end; we turned about-face and went safely through to quieter water where we could straighten around. The recently opened Manitoba Hydro generating station at Kettle has a head of ninety feet. The proposed Long Spruce plant will have fifty feet; the Upper and Lower Limestone and also the Gillam Island, are each expected to have eighty feet of head.

On reaching the point of fresh water mingling with salt water, the tide was coming in. There was nothing to be gained by paddling against it so we pulled ashore and brewed a pail of tea. While sitting there a curious seal popped its head up, looking, for all the world, like a man swimming. With the turn of the tide it was an easy paddle into the Port. We delivered the mail at the engineering office and were allocated to quarters and were able to clean up.

Mr. D. W. MacLachlan, in charge of the Port Nelson project, received us cordially and discussed our position with respect to returning to Armstrong Lake and going on to Winnipeg. The last

ship had cleared, so a sea journey was out. All small waters were now frozen and ice was forming along the banks of the Nelson. Mr. MacLachlan offered to put us up and employ us until conditions were fit for travel with dogs. We thanked him but decided to leave by canoe the next day, with the in-flowing tide. We fully realized this would be a stiff trip.

With a light load, just the essentials, going was good to the head of tidal water. From there, passing Gillam Island, to the foot of Limestone Rapids, poling was employed. Although preferable to lining along the slippery ice coated river bank, poling was not entirely comfortable with freezing water dripping down the pole to the hands and up one's sleeves. There was no alternative to lining up Limestone Rapids; this was no cinch. Luke remained in the stern of the canoe to steer and maintain the bow directly against the current, for if it swung off, no force could hold the canoe from upsetting or completely turning about. My part was on the bank, walking and hauling on the line. The limestone formation was coated with ice. The line became ice coated too and tended to slide through my hands. At one point this was so critical that it was necessary to supplement handholds with a grip of teeth, but we made it safely, due to Luke's ability, to the head of white water and on up by Long Spruce, Kettle and Gull Rapids to Split Lake. There we were guests of the Hudson's Bay Company; this was a Saturday night...in comfort compared with others we had had.

Under normal circumstances, departures are not made from a H.B.C. post and mission on a Sunday, but as ice was creeping out from shore and temperatures were dropping sharply, it was conceded that we should push off at day-break. Well it was we did, for that night Split Lake froze in. We were safely into swift water which would be open for some time. Again we travelled over the rocky hill of Grand Rapids portage and on up through the Manitou to the "tin house" where the canoe was stored until the coming spring.

The round trip, under the adverse conditions described, was four hundred miles.

From the "tin house" the route was overland via the railway right-of-way and by Canadian Northern train to Winnipeg. It was now November 1914, nearly sixteen months from the date of departure from the city. During this period I had been given the opportunity to gain much experience under an outstanding chief, Mr. Silcox,

and, also, to learn much from Luke Clemons with whom I had made many trips by canoe and by dogs. Luke treated me in a fatherly manner. His dark skin was inherited from his mother's Indian ancestry but there was no "whiter" man than Luke. His father was a H.B.C. officer and said to be a brother of Mark Twain (Clemens).

Office Work at Winnipeg

On arrival at Winnipeg, I put up at the Empire Hotel, on Main Street. It was the rendezvous for engineers, land surveyors and H.B.C. officers. Rooms were well maintained and excellent meals were served at prices, from 50¢ to 75¢; hard to realize today. The Hudson Bay Railway offices were just across the street, in the Fort Garry Court at the corner of Main Street and Broadway Avenue. They occupied the entire basement. The old Hudson's Bay Company retail store was close by.

Mr. Silcox immediately set me to work assisting him and our draftsman completing maps and profiles, and preparing his final report on the location survey. During this time, I met A. J. (Scotty) Morris, who became a lifetime friend. He had been articled to an architect in Edinburgh and was a talented draftsman. One day when we were working in high gear, as we were accustomed to in the field, Scotty came over and whispered confidentially, "You damn fools, you will work yourselves out of a job!"

Western Canadian city life was all new to me. We had some enjoyable evenings - dinners and shows. Mr. Silcox worked hard and played hard. Sometimes the situation got pretty hot. When he became exhilarated, he developed a dislike for waiters. On one occasion, a circular table had been set for six with nice linen, glassware and cutlery; the Chief became displeased and yanked the cloth, crashing all to the floor. This really caused an uproar. As usual, Scotty Tait, our levelman and an amateur light weight boxer, straightened things out, but it cost the Chief a nasty sum. Another side of his character was his deep sense of responsibility to guide the behaviour of juniors with him. I remember how he severely censured an older man for endeavouring to induce me to have a drink. With maturity, I appreciated what an influence this had on my life.

Mr. (John) Porter, overall chief engineer of the H.B.R., invited Mr. Silcox and me to a Sunday evening dinner. Mrs. Porter, too, was very hospitable. Although I had now been in Canada for

nearly five years, this was my first insight into a normal Canadian home and way of life; it was an enjoyable experience.

Maps and reports were completed well ahead of Christmas. Mr. Silcox again took leave to spend the holiday at his home in Wales. On his return, he was to be division engineer in charge of construction from Cache Lake, about twenty miles south of the Kettle, towards Nelson, with five resident engineers under his supervision; I was to be one and had the privilege of choosing the residency, ten miles in length, southerly from the bridge site at the crossing of the Nelson River at Kettle Rapids.

My duties during the Chief's absence were to select camp sites for each resident engineer, build log caches and supervise the freighting in, by teams and sleighs via the contractor's tote road, and storage prior to spring break-up of sufficient supplies to maintain each resident engineer's party, six men, until the following winter when overland freighting could be resumed. I had had enough of the city and went on my way about the date of my twenty-second birthday, 15 December 1914.

Some might question why we did not enlist for war service. At that time, the militia units, as yet, had strength to meet the demand. It was not realized how long the war would continue, nor the expansion of Canada's forces, and the replacement of casualties that would be required for victory to be achieved. Little did we know!

9. HUDSON BAY RAILWAY: CONSTRUCTION, 1915

Subsequent to the few weeks working in the office at Winnipeg, I proceeded by train to Le Pas and on, over the newly laid track, to the end of steel. Again I teamed up with Luke Clemons. This was about Christmas time, 1914, but there was no let up in preparations for 1915. Equipment and supplies were being unloaded for furtherance by teams and sleighs to Caches ahead. Everything required for work during the coming year had to be freighted in before spring break-up. Hundreds of teams were employed. My task was to make arrangements with the contractor, McMillan Bros., to freight supplies needed for resident engineers who would be moving into camps on Division 5 to lay out the work - clearing right-of-way, grading, culverts and bridges - under supervision of the Division Engineer, Mr. Silcox.

Winter Freighting and Stocking Caches

The contractor brought in farmers and their teams and, immediately conditions became safe for winter freighting, the trail was broken ahead. Log caches were built adjacent to the right-of-way at distances of some ten miles apart. At every other cache, twenty miles apart, barns were built to stable teams overnight. Each team travelled ten miles, loaded, to the intermediate cache, where a transfer was made to an empty sleigh, to return to its home cache, light loaded. Resident engineers' camps were also about ten miles apart, often not far from the contractor's cache. It was essential that all were fully stocked with equipment and supplies prior to the spring break-up when overland freighting would be halted and teams would be returned to farming.

Luke and I built the engineers' caches and ensured they were well stocked. It was impracticable to bring anything in during the summer. Even mail was restricted to letters and a very few papers, once a month by canoe or packing. My own camp site was a lovely, well treed spot by the Kettle River; speckled trout were so abundant that much of our stock of cured and canned meats was surplus. A spring of ice cold water flowed from the base of the hillside. We excavated a basin and paved it with rock; in addition to being an excellent water supply, it was live storage for trout. When the cook wanted a fish, all he had to do was dip one out.

My neighbouring engineer to the south, Bill Hillman, was located by the Butnau River. He brought in his recent bride. There Mrs. Hillman had to stay, with no feminine company, until freeze-up.

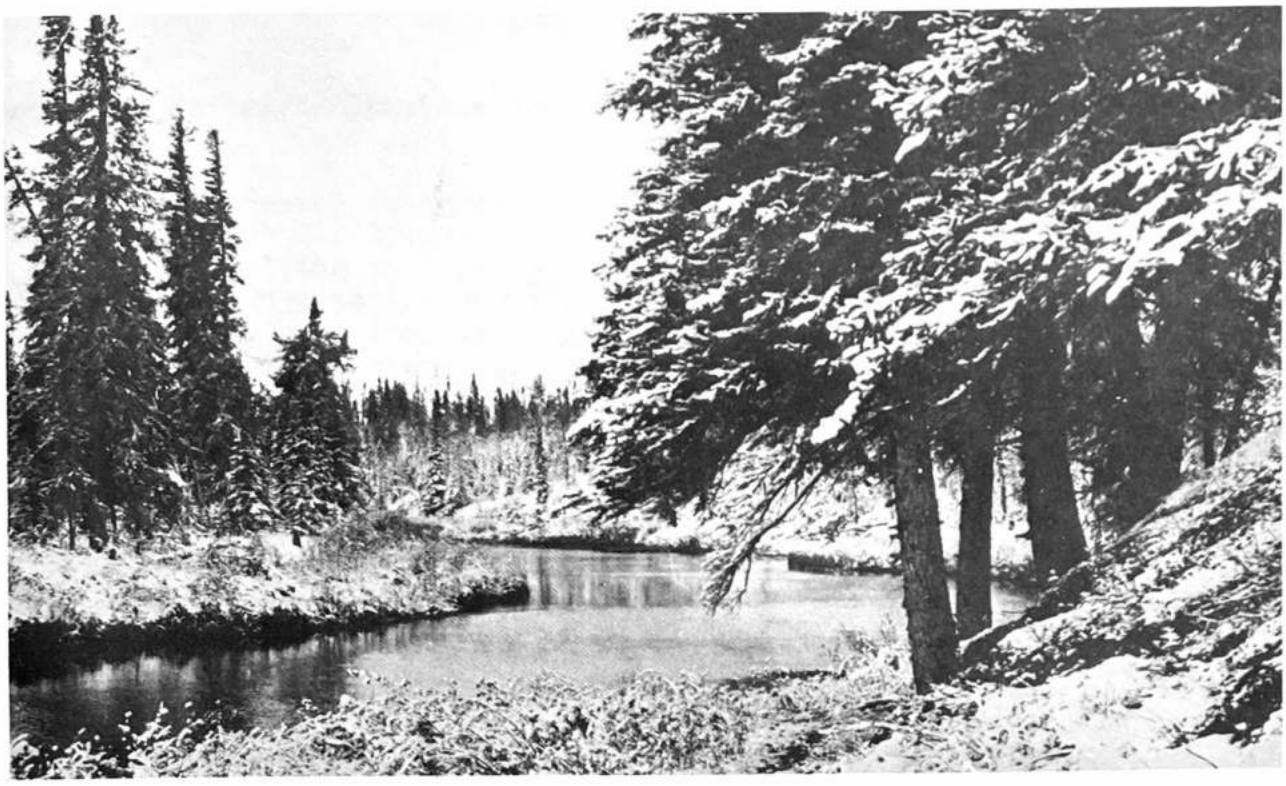


Photo 50. Kettle River, August 1915, at Res.Engr's camp during construction of the H.B.R., near present day town of Gillam; speckled trout were abundant.

Photo 51. "Stationmen" grading embankment, from side borrow, on the south approach to the bridge site to cross the Nelson River at Kettle Rapids.

However, she appeared to enjoy it. Luke built a first class set of log shacks for Mr. Silcox at a little bay on the north bank of the Nelson, at the foot of Kettle Rapids. All corner joints were carefully dove-tailed and floors were of adzed logs; roofing was canvas. The only imported materials were window panes and a few boards for window frames and doors.

Cox's Army

Shortly before spring break-up, an expedition organized by the Department of Railways and Canals, showed up at Kettle, with men to strengthen the labour force at Port Nelson. The teams and accoutrements were good, but leadership was poor. It became known as Cox's Army. When it reached the end of the contractor's trail and was faced with crossing the Nelson, then breaking a trail through to the Port on its own, the effort ground to a halt. The teams were turned about. Some of the men, however, were prepared to proceed northward on foot. Luke Clemons, on learning of this, considered that these men might became lost and possibly frozen. He undertook, with his dogs, to guide them to Nelson, thus averting total failure of this expedition.

Spring Break-up of a Northern River

As the north end of my residency was the south bank of the Nelson River, at Kettle Rapids, I keenly anticipated the spring break-up, to behold the annual phenomenon in this magnificent waterway.

With rising temperatures, the surface of the ice above the rapids became slushy. Movement commenced and ice jammed in the restrictive width of the channel between solid rock banks at the head of the turbulent current, causing the water level to rise until the pent-up force of the immense volume of flow broke the barrier loose. Huge blocks of clear blue ice, twenty or more feet thick, were released to grind and jostle through the rapids. The roar could be heard for miles around.

This was a fascinating, hypnotic sight, drawing one close, to watch with awe natural forces of such grandeur; it was difficult to turn away to normal tasks.

The river banks of the reaches between the rapids, were sheared clean of all trees and brush by the grinding ice to the high water mark, so that, when the water level receded to normal, at a distance the river banks resembled well tended lawns. Here and there great blocks of ice, of thickness three times the height of a man, were grounded and remained to melt, until well into summer, as evidence of the northern winter.

It is characteristic of rivers flowing from the south towards the north, that the ice becomes rotten and moves, while farther downstream it is still firm; this causes massive ice jams and the impounded water to raise to extraordinary heights. The Lower Nelson, with a number of restrictive rapids, is predominant in this respect.

McMillan Bros. and Sub-contractors

McMillan Bros. sublet the clearing and grading, except for sections of heavy rock work. The "Wolf" was the real push on the job, the other two were more of the office and public relations type. Certain sections involving the haul of materials from cuts to build embankments, were let to substantial sub-contractors. The balance, miles and miles to be constructed from sideborrow across muskegs, was undertaken by "stationmen".

Solid rock excavation was drilled by hand, one man holding the steel and two striking with skillful unity. After the rock was blasted, it was hauled to adjacent embankments in cars manufactured on the spot from local timber. The boxes were then mounted on axles and double flanged wheels, to run on track laid with rails of local poles and a running surface of band iron. The rock was loaded into the cars by hand with assistance of improvised derricks. The loaded cars were pushed by hand or, in some instances, hauled by a single horse where feed had been stockpiled to support the animal for eight or nine months. It is questionable whether presently many men would do this with relief and welfare payments available for the asking.

Stationmen and the Cache Keeper

The stationmen might justly be spoken of as the heroes of H.B.R. construction. The bulk of them were illiterate recent immigrants from Central Europe, at the time commonly called "bohunks". They

were transported, wearing fine high leather boots and peaked caps, from East Coast ports to the West by the trainload, often directly to a specific railway project. On arrival at Le Pas, they were directed to the end of steel and beyond, on foot, packing what possessions they had, to a cache where labour was required.

Groups of, say, six or so men entered into a simple form of contract to build fifteen or twenty stations - a station was 100 feet long - of embankment, depending on the volume the gang could be expected to complete within one summer. Payment was on an agreed price per cubic yard, excavated and placed, as measured by the engineer, less the value of equipment and supplies furnished by the contractor's representative, the cache keeper, subject to approval of the "walking boss" who supervised five cache keepers covering fifty miles of line.

The cache keeper issued the stationmen axes, shovels, knock-down wheelbarrows, tin cookstoves and a few nails which they packed to their work site. They erected a log shelter, hardly to be dignified as a shack, hewed planks and made trestle supports for a runway on which to wheel materials excavated from side borrow pits to build up the embankment. They were then in business, working up to sixteen or more hours, Monday through Saturday and some Sundays, except for time to visit the cache to replenish supplies, with never ceasing attacks from hordes of mosquitoes and blackflies. Supplies furnished were the bare necessities; flour, yeast, baking powder, salt, beans, sowbelly, dried fruit and tea or coffee, usually to be cooked in the crudest manner and eaten by dipping fingers into a common bowl.

The right-of-way was cleared ahead, to be closely followed by the engineers staking, cross-sectioning, the cuts and fills, borrow pit areas, culverts and drainage ditches, in order to record ground surface elevations prior to commencement of grading the roadway. As sections were completed, elevations were read on the base of cuts, borrow pits and ditches and the relative bottom and top widths measured. The original and final cross-sections were plotted relatively and the volumes excavated calculated therefrom, to arrive at the quantities to be paid for.

Stationmen had a significant habit of leaving cones of earth in its natural state, to show the depth of borrow pits, particularly at humps in the original surface. They would draw the attention of the engineer to these points when he was taking final cross-sections.

Hudson Bay Railway: Construction, 1915

Ditching Through Permafrost and the Walking Boss

Excavation of offtake drainage ditches through areas of permafrost, some for long distances out from the right-of-way, presented the most discouraging work. Permafrost was literally chopped out with hand axes, as explosives freighted over winter roads were too costly and not very effective to remove frozen materials. The walking boss, Mike Bailey, a plausible person, however, had the facility with the aid of a few cigarettes, to convince stationmen, at least for the time being, that this was not too bad a job and they were making good progress.

After completion of the work and inspection by the engineer, he gave the respective gang a certificate showing the quantities of work to be paid for; this was presented to the cache keeper and he made up a statement of credits and debits. Some stationmen made fairly good money, but some not so good. Cost of transporting tools and supplies was high and prices charged were relative. At times there were ugly scenes between the cache keeper and stationmen. Discarded wheelbarrows may yet be seen along the line; nothing but a few personal belongings was ever packed out.

An Army of Workers Arrived Ahead of Time

In the spring of 1915, an army of prospective stationmen arrived at the cache serving the ten miles of line comprising my residency. There were far too many for the requirements there and it was too early in the season for men to be ferried across the Nelson River for work farther north. This caused a nasty situation for the cache keeper. He was reluctant to issue rations to the surplus men and deplete his stock which was required to support the men within his scope until the coming winter. The jobless wandered about trying to catch unwary rabbits and spruce hens. There was careless shooting; one man received a twenty-two bullet in his calf. Between the cache and my camp there was a sandy ridge with a beautiful stand of jackpine, very pleasurable to walk through, but inattention to a camp fire permitted it to spread and destroy this fine timber except for a small area which we were able to save around our camp by the Kettle River, near the present town of Gillam.

Photos 52 & 53. Excavating a cut, of glacial till, and loading it into cars, made on the spot, to be hauled over rails of local poles to build the adjacent embankment entirely by hand, near present time Gillam. Note, the double flanged car wheels to run on the pole track, also the well-trimmed slopes, 1915.

Hudson Bay Railway: Construction, 1915

Inspections by the Division Engineer

Four of the former location party remained with Mr. Silcox on construction - Scotty Tait as his office assistant, Luke Clemons as canoeman, Norman Mackenzie as instrumentman and I as resident engineer. The Chief made periodic inspections and I occasionally visited his headquarters, accompanied by Mackenzie. We travelled the Kettle River, with several exciting rapids to run, and across the Nelson at the foot of Kettle Rapids. The Chief was apprehensive about our negotiating the powerful currents of the big river in the light fourteen foot canoe I enjoyed using.

Monthly Mail Delivery

A highlight each month was the arrival of Bill MacKechnie and Bill Angus with mail. They were great company with gossip of the line and outrageous anecdotes. Bill MacKechnie was the leader, a short man, but powerful. He called himself "Big Bill, the human derrick". He had lost an eye in a fracas, so wore a glass one. He carried glass eyes of various colours with which he had much merriment, especially when chatting with Indians by a camp fire. He would look at them with a blue eye, then slyly change it with a green eye and, again, with a red one. This really disturbed some, who would move away from this 'bad medicine'.

Bill also told of an incident which occurred when he employed some Indians to clear land. His story, as he told it, went: "I wished to go to town but was doubtful of the crew doing much work during my absence, so I whittled up a stump to a nice point and deliberately removed my eye, placed it on the top of the stump and announced, 'now, you so-and-so's, I will be able to watch you from wherever I may be'. Then I walked away, but circled back unseen to observe the effect of my ruse. The poor dupes were working steadily, so I left in search of a drink!"

And, he described his father's farm where he grew up as, "It was so poor and rocky that crows were humpbacked from packing lunches across it".

The Open Season, 1915, Drew to a Close

News from the outside indicated all able-bodied young men should volunteer for the Armed Services. We, Mr. Silcox, Tait,

Mackenzie and I, applied for leave of absence. We were advised that this would be granted when grading was completed for the season, and was measured, calculated and recorded, together with final maps and profiles. This occupied us fully until the end of October.

As a large percentage of embankment over muskegs was built from side borrow of inferior materials, including peat, track was not laid until it was firmly frozen to support locomotives and loaded cars. The roadbed was strengthened the following summer by train-filling.

There was one practice peculiar to the H.B.R. As it would have been too expensive to haul in heavy culvert pipes over the winter trail, openings were left for drainage through embankments and installation of culverts was co-ordinated with tracklaying. Another occurrence, not too common on other railways, was fire in embankments after peat dried. These fires were difficult to extinguish; they often smoldered away under the snow and broke out afresh in the spring.

The bridge to cross the Nelson at Kettle Rapids, a major structure, was not scheduled until heavy materials and equipment could be moved forward by rail. The Chief Engineer requested Mr. Silcox to remain for another year; this was a big disappointment.

After completing our tasks, Tait, Mackenzie and I walked on the frozen grade, packing a few personal items, some one hundred and fifty miles, to board a train to Le Pas and on to Winnipeg. Resident engineers on the Bay Line were required to provide a transit and level at their own expense; costly items for initiates. I had to leave mine on the job; however, they were safely stored for me.

Mr. R. Hazelwood, General Manager for J. D. McArthur, the main contractor for the entire H.B.R. construction, was travelling on the train to Le Pas in his business car, the Marlborough, one of the most beautifully finished cars I have seen. He was a friendly executive, generally known as "Whistling Dick". He invited me into his car for dinner...my last on the Bay Line until eleven years in the future.

I heard, in the meantime, that track was laid through to the Kettle Rapids bridge site for delivery of the heavy materials required for construction of the structure. After completion, track was laid across the Nelson, at these rapids, and for six miles northerly, by the end of 1917; then all further work was suspended, because of the war situation.

10. MILITARY SERVICE, 1915 - 1919

Training at Winnipeg

Norman Mackenzie's parents were 'old-timers' of Winnipeg, with good connections. He advised me that if we applied for admission to an Infantry Training Class immediately, and if accepted and passed out successfully, there would be a possibility of being granted a commission as lieutenant in the Militia 90th. Regt. Winnipeg Rifles, known as "The Little Black Devils" in recognition of service against the Metis and Indians. My commission is dated from 22nd September 1915.

The next step was to apply for Overseas' service. Lieut. Col. A. W. Morley, M.C., who went to France with the 8th Bn. Canadian Expeditionary Force, had been returned to Canada to recruit the 144th Bn. (also affiliated with the Winnipeg Rifles), but he had not filled his slate of junior officers. Col. Morley granted Mackenzie and me interviews and we were taken on strength, 15 January 1916. Scotty Tait was commissioned in the Cameron Highlanders and the 78th Bn. C.E.F.

Lieut. Mackenzie and I were posted to "C" Coy. under command of Major Ruttan, with Capt. Birchall, of the R.N.W.M.P., second in command. I was fortunate to have Sgt. Derby as platoon sergeant; he was also from the Mounties.

The battalion was barracked in the old Forresters' (now Hart) building on Fort Street and our officers' mess was in the former residence of the late Lady Schultz, on Broadway Avenue; officers from out of the city were billeted there. Regular training continued throughout the winter, on side streets and on vacant ground opposite Hudson Bay House, where the battalion could parade in formation. Major Codville, a permanent force officer from the R.C.D., was second in command. A very keen, smart soldier, he put us through our paces. One morning when inspecting, he looked Mackenzie in the eye and said, "Mr. Mackenzie, did you have breakfast?" Mac replied, "Yes sir!, a very good breakfast, thank you," and received the following blister: "Mr. Mackenzie, when I have not time to shave, I never eat breakfast."

We were licked into creditable shape and developed very high 'esprit de corps'. The colonel had an outstanding cap badge cast of alloy, resembling sterling silver. It was Satan complete with tail and pitch-fork and, below him, the motto, "Hosti Acie Nominati" - named by the enemy. We were very proud of this and, also, of our two bands, one brass and one bugle, and of the exhilarating regimental march, "Pork, beans and hardtack".

Military Service, 1915 - 1919

There were several units, thousands of troops, training in Winnipeg that winter. As to be expected, soldiers, off duty, clashed with the City Police; once so seriously that a riot ensued. Most of the windows of the Rupert Street police station were broken. So relations were strained. This lead to a charge of assault being laid by a policeman against one of my men. It was suspected that rations were being sold from kitchens in the Forrester Block, so a sentry was posted in the back lane with orders not to allow any person to pass. One young soldier of my platoon was on this duty when a policeman, making his beat along the lane, was challenged with a bayonet and not permitted to pass; hence the charge of assault.

The defendant was marched, cap off, as customary, in front of the company commander and remanded to the colonel, who took a dim view of the matter, so the culprit was sent up for court martial. As I knew this soldier to be inoffensive and had carried out his orders strictly to the letter, police or no, it appeared to be my duty to defend him. The policeman, tall and well built, gave evidence. I questioned him, drawing attention to his stature in comparison with the young soldier and suggested there was no actual assault. Much to my delight, Pte. Dominik was acquitted. My only attempt as 'soldier's friend', (counsel for the defence).

Society and Marriage

For young soldiers, with little thought about the future, life could be gay. It was my first introduction to Canadian city society. There were pleasant dinners, good shows at the Walker and Orpheum, outside skating rinks on the Assiniboine River with live band music in clear frosty air. Fort Osborne was then adjacent to the bridge.

After Christmas celebrations, New Year's Day visiting - to the Lt. Governor's Levee, to the Archbishop's palace and to the Army messes and Navy wardroom - was a must; it was a hectic course. The Military Ball, at the Royal Alexandra, was the highlight of the season. I escorted a stunning brunette, Miss Helena Violet Hamilton, born at Hamilton, Ontario, whom I had met earlier and, then and there, 'fell' hard.

Regulations required permission to be granted for marriage, to be requested through the O.C. Major Ruttan, a paternal gentleman. He invited Helena and me to Sunday afternoon tea; I learned

later, to be scrutinized by Mrs. Ruttan. They approved and we were married Saturday afternoon, 20th May, 1916, at the rectory of St. Mary's Cathedral, attended by Major and Mrs. Ruttan and Mr. and Mrs. F. W. Brownell, who became lifelong friends. Frank was chief engineer of Manitoba Telephones. We registered at the Fort Garry Hotel, in a suite beyond the means of a lieutenant with pay of about $100.00 monthly, plus $30.00 married allowance. I had, however, a nest-egg, saved from the H.B.R. Because of the understanding of the M.O., I was excused parade on Monday morning, but I was on duty the following day. We rented a furnished suite on Spence Street, but we only occupied it for a week, as the Battalion moved out to camp.

Looking back, I have wondered at times what a long-shot risk a girl took to marry a junior infantry officer, of whom she knew little, with a questionable future. It would appear love and war walk hand in hand. Thousands of couples took such a chance.

Training at Camp Hughes

At the end of May the 144th Bn., together with other units slated for Overseas, moved to Camp Hughes, (since expanded to Shilo), with ample area for advanced training. This pepped up all ranks. I was particularly happy to be out in the open again and under canvas. The camp site and rolling hills thereabout, was of sandy soil with good drainage, but subject to strong winds and blowing sand. In our lines, there was one lone spruce tree; it sheltered the battalion mascot - a black bear.

Major Codville was in his element directing extensive manoeuvres, creating wider interests.

My wife engaged 'digs' at Carberry and I was able to rent a well bred horse for transport to and fro. This was strenuous, as I could not leave camp until after dinner, a parade with the Colonel at the head of the table. Then, except when on duty around the clock as orderly officer, I would saddle up, ride cross country, water, feed and stable the horse. There was strong incentive, however! I had to be back in lines at the sound of Reveille. This went smoothly until one week-end the Colonel was rumoured to be going to his home in Winnipeg. The adjutant, Major Money, indicated unofficially to some of us that we would not be missed if we were not on church parade. But the Colonel did not go. Monday morning he gave us a real raking over - I can see him yet, looking at me and saying, "And some officers are living in Carberry!"

Military Service, 1915 - 1919

Colonel Morley had a very astute method of keeping us on our toes. He carried two supernumerary lieutenants; that is, surplus to establishment. They would have to be dropped before proceeding for embarkation; there was no indication who would be left behind. On the other hand, the 'other ranks' were somewhat under strength. The Colonel hinted that this might be remedied by passing word around our neighbours' lines that any men keen to get going would be welcome in the 144th. This back-fired seriously. The battalion was drawn up, ready to entrain in the coaches opposite, when a staff officer rode up, saluted the Colonel and advised him that the Brigadier wished him to report at headquarters immediately. The reason was soon revealed - other battalion commanders had informed that some of their men had been enticed away. It appeared our departure might be delayed indefinitely, but after what seemed an interminable wait, the Colonel returned and entrained his unit at Camp Hughes early in September 1916, all aboard for Halifax.

The Journey Overseas

As customary, prior to going away, last leaves were granted. I took Helena to her eldest sister's home in Toronto; their mother had deceased when Lena was comparatively young. Lena now had the courage to go to England in wartime. I arranged passage for her and for my mother to meet her at Liverpool.

After the delay in departure from Camp Hughes all went well. The regular stop for train servicing in Winnipeg was happy, with relatives and friends giving presents, a fair number liquid, and wishing "fare ye well". The route east was direct, through Northern Ontario toQuebec, where there were unfriendly stares. Then to a stop at Moncton, with a brisk march and good wishes and gifts from the generous loyal citizens. Approaching Halifax, security measures were tightened, blinds were all drawn. On arrival, embarkation was efficient and quick onto the R.M.S. Olympic, one of the speediest in the Atlantic service.

She cleared port without delay, in calm sea which containued throughout the voyage - beautiful September weather - very fortunate as this ship was crammed with troops. Once, when on orderly officer duty, I went away down into the bowels and there, in a secluded corner, a group was intent on poker. One player looked up and gave me a cheery, colourful greeting - he was one of my Metis friends

from around Selkirk; there was only one action to take, orderly officer or not, and that was to accept it in the good natured spirit it was given. I must admit, officers fared comparatively well in the first class section; juniors were four to a cabin, excellent meals were served in an ornate dining saloon and there was a fully equipped gymnasium; all very enjoyable, at no personal expense.

The Captain trusted in the speed of his ship and zig-zag courses to evade enemy submarines. As he entered the infested seas off Ireland, Royal Navy destroyers loomed up, seemingly from nowhere. They circled the Olympic and took up escorting stations. This gave a splendid feeling of security and pride in being, even if very insignificant, a citizenof the British Empire; I remembered Sir Walter Scott's,

"Breathes there a man, with soul so dead,
Who never to himself hath said,
This is my own, my native land!"

As the Olympic steamed slowly into port, she passed the old liner "Tunisian" which had departed from Canada five days in advance of the faster ship. The trooper docked without incident. We were quickly ashore and entrained for Witley Camp in Surrey. I was detailed, however, with a fatigue party, to check off the 144th Bn. heavy baggage and ensure its dispatch to camp via a later train.

This was unbelievable good luck. My wife was a passenger on the Tunisian, docking shortly after the troopship. I spotted my mother waiting and I was able to embrace Helena when she landed in England for her first visit. She told me she too had had an enjoyable voyage, sharing a cabin with a lady doctor, who was conducting a group of Army nurses. Lena and Mother were able to travel with me to London, where our ways parted, they for Brighton and my party for Witley.

Arrival at London and transfer across the city, via the 'Tube' (underground), to Waterloo station was an amazing experience for young soldiers who had previously not been far from Manitoba. From London, the journey to camp was comparatively short. I have reason to believe the adjutant, Major Money, was aware of my situation, hence the good luck. Major Money, a former cavalry officer with service in India, was from Weybridge, my birthplace. His father

was rector of the stately parish church, but the son was not of the cloth. He had fascinating stories to tell of the 'Frontier' and of leaves, in a house-boat, in the Vale of Kashmir. Also, he had an appetite for indigestible foods about midnight. Once, en-route for a snack, Major Money turned to me and said, "Charles, you walk like a damned infantryman"; his gait was the more dignified one of a horseman.

Witley Camp and Environs

Being stationed at Witley was almost being home again. Towns and villages I knew well - Guildford, Farnham, Frensham, Godalming, Churt, Thursley and Hindhead - were within a radius of ten miles. Lloyd George had his country home near Churt, at the base of the Devil's Jumps, three prominent conical hills, where 'his nibs' was said to exercise. Nearby, at Hindhead he had a 'punch-bowl' where the last public trial and execution on the gibbet was held. A sailor who had been paid off at Portsmouth and was travelling to London, stopped overnight at the Royal Huts Hotel, Hindhead, and was so foolish as to display his 'roll' at the bar. Two ruffians observed this and in the morning followed the sailor, robbed and murdered him and threw the body into the punch-bowl. The crime was quickly discovered and the thugs apprehended, tried and gibbeted on the spot, within the same day. Their bodies were left swinging by the neck as a deterrent against crime. The sailor's grave is in Thursley churchyard with tombstone depicting the scene of his death and, at the Royal Huts, there is an excellent painting of it.

My wife's brothers, Sgt. A. Hamilton (Arch) and Gunner H. Hamilton (Herb) were with the Canadian Field Artillery at Witley, so I was able to meet them and take them to a happy reunion with their sister, at my uncle's home at nearby Frensham.

The regular army permanent establishment at Aldershot is only a few miles from Witley and Frensham Commons manoeuvring grounds. Many special courses were conducted at Aldershot and nearby. I attended one on musketry and machine gun exercises and was ticked-off, by a typical regular army instructor with a vitriolic vocabulary, for referring to a small building as a 'shack', when giving a fire order. I was told to use precise English, not a Canadian localism which others would not recognize. Another course I was sent to - surveying and mapping - was a familiar subject.

Military Service, 1915 - 1919

History records the ever mounting casualties being suffered on the Western Front. The Canadian Corps, basically four divisions, called for more and more reinforcements. Plans for formation of a fifth division had to be dropped. It was a great disappointment to members of the 144th Bn. not to proceed as a unit; instead, they had to be dispatched, as drafts, to the 8th, 44th and 52nd battalions; their service in action reflected the high standard of training received under the command of Col. Morley.

Canadian Engineers Depot

By reason of my background, I was transferred to the Canadian Engineers at Crowborough, Sussex, and exchanged the Devil for a Beaver in my cap badge. It did not take long to shake-down in the new surroundings, for there were several other engineers from Canadian Railways.[1]

My wife joined me at Crowborough and was fortunate to rent a comfortable room. Taking a walk one evening, we saw a soldier approaching; at a distance he appeared to be a boy, but I soon recognized him - L. E. Silcox. When he was granted leave from the Hudson Bay Railway, he immediately enlisted as a sapper in the Canadian Engineers, to be sent overseas with the least delay.

True to his character, work hard and play hard, Sapper Silcox was often in trouble and confined to barracks. One of an orderly officer's duties is to inspect the defaulters. Carrying out this task, I came on Silcox cleaning and disinfecting latrine buckets; as he finished each bucket he initialed it, L.E.S. I enquired why and he replied, "Well, all good artists sign their work." What a sporting attitude and sense of humour, especially from a man who had been accustomed to having authority and responsibility for years. It was not long before his leadership attracted attention. He returned to Canada, Major L. E. Silcox, D.S.O., and said, laughingly, "It was a mistake to go beyond the rank of sergeant, which relieved one of most dirty duties, for the price of drinks was higher to a commissioned officer and girls expected more."

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[1] Some became life friends: Herb., subsequently Major H. L. Roblin, M.C. and District Engineer, CN at Edmonton, and Major Burbank, known as "Father Burbank", nearly forty, an ancient, retired as Division Engineer, CN at Prince Rupert; also Hubert Bird, adjutant of the Depot, who built up the nationally known Bird Construction Company.

Engineer training was varied and interesting, together with minor interludes. During a night exercise, the weather wet and raw, Burbank and I slipped into a pub, a cheerful fire crackled on the hearth of an enormous ingle-nook fire-place. Sitting on the oaken benches within the nook, one could look up into the spacious chimney where flitches of bacon and hams were curing in the fragrant wood smoke and, too, the beer and bread and cheese were first rate. Sir Arthur Conan Doyle's (author of Sherlock Holmes and a firm believer in spiritualism) home was near the Engineers' depot; the officers were often invited to a very generous open house.

When riding a motor cycle, through the night blackout, near Horsham, I was startled by the sound of a sudden explosion and brilliant illumination of the sky for miles around. It was the destruction of a Zeppelin with a load of bombs, enroute to London. Lieut. Robinson, R.A.F., alone in a small fighter craft, engaged and killed the monster. He was awarded the Victoria Cross; his valour deterred Germany from further employment of Zeppelins to raid England.

With the Royal Engineers

Ancient Conway Castle is on a commanding site at the mouth of the river flowing into the Irish Sea. The charming resort town, Deganwy, is on the opposite bank of the Conway River. There the Royal Engineers established a wartime officers' training centre. It was an ideal location, with the sea, river and mountains of North Wales. Lieut. McN. Steeves and I were posted there for enrollment in the R.E. intensive course of three months. We were the only Canadians in this class, the others were Imperials and a large party of Australians, also one lone New Zealander.

This was the most efficient military school I had the good fortune to attend. Subjects covered, within the time available, were most phases of military engineering, both practical and theoretical, a considerable portion applicable to civil engineering. The commandant, Lieut. Col. D. B. Jones, had a staff of instructors with wide and varied experience about the World.

Bridging exercises were carried out on the Conway River; camp arrangements, water supply, sanitation, fortification and demolitions on open ground at the base of a nearby mountain, where there were

also rifle, revolver and grenade ranges. Equitation and mounted drill were on the foreshore, hard packed sand at low tide. The school maintained a stable of some sixty horses; animal care, grooming, etc., was the first duty early each morning, with a different mount from day-to-day. Surveying and field sketching were taken during long rides through the rugged country. One could not wish for a more interesting exercise.

Colonel Jones took a personal interest in his trainees. As a married officer, my wife and I were billeted in a house on Marine Drive; our sitting room and bedroom both faced the sea, expensive accommodation for vacationers in normal times. The landlady did our cooking. I was given a daily allowance in lieu of drawing army rations. All in all, I cannot speak too highly of the consideration given us.

As spring approached, Helena and I made enquiries about facilities for maternity. We were advised that the local doctor was highly esteemed, particularly for these matters and, also, an excellent midwife worked with him; all could be looked after in our own bedroom. Having no experience, we accepted this.

At Deganwy, April 1, 1917, there was a heavy fall of snow and our first child was born, named Eira Alice.[2] Delivery was normal but from then on, all went awry for my wife and became very serious from day-to-day. I was alarmed and questioned the doctor. He came right out and said it would appear Helena would not pull through. I requested consultation and was told a specialist could be brought from London, if I could afford the expense.

The following day the specialist arrived and after making his examination, he turned things upside down by recommending different treatment. It was a close call; Helena was extremely weak and gasping to breathe; I had to obtain oxygen to relieve her. She slowly gained strength, to be moved to a private nursing home at Ilandudno, with excellent understanding care and was soon taken for daily walks in a wheelchair along the promenade by the Bay.

During our personal crisis, a fellow officer, an unassuming English gentleman, quietly suggested that as we were so far from friends in Canada, he would be happy to assist. Such thoughtful

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[2]The name Eira is Welsh, suggested by the nurse, with respect to the pure white snow covering the ground that morning.

kindness from one who knew little of us, strengthens faith in human brotherhood.

The R.E. course concluded and I was slated for France. I felt my wife and baby daughter were in good hands, with the kindly nurses at Llandudno and further, Mrs. Jones and other officers' ladies at Deganwy, were very concerned with the well-being of the "little Canadian girl", as they spoke of her. I was indeed thankful to the powers above and reported back to Crowborough for instructions.

I learned that on request of Lieut. Col. A. E. Griffin, I was to be posted to his command, the 5th Bn. Canadian Railway Troops, engaged on construction of light railways, 60 cm. gauge, to transport ammunitions in the forward areas. At the time the 5th C.R.T. was without an officer experienced in quick location surveys. "Father" Burbank had recommended me.

Canadian Railway Troops in France and Belgium

The Western Front was, in general, inflicted with heavy precipitation. After a year or so of trench warfare, the forward areas were churned up by methodical shelling into morasses of mud and craters in roads immediately filled with water.

Maintenance of roads and of railways was a constant problem, to sustain transportation of munitions, stores and rations, essential to the artillery and infantry and other troops holding the line. This became intensified during preparations for launching offensives.

In February 1915, the British Government asked Canada to supply a railway construction unit. This was recruited from skilled employees of the Canadian Pacific Railway and was organized by that company and called the Canadian Overseas Railway Construction Corps. The establishment was 12 officers and 492 other ranks, selected from over 3000 volunteers.

This new unit sailed from St. John, 15th June, with over 700 tons of technical stores, under command of Lieut. Col. C. W. P. Ramsay. Following arrival in England, it was attached to the Royal Engineers' Transportation Training Centre at Longmoor and, in August, proceeded to France.

The French road and railway systems continued to deteriorate to the point of breaking down. Canada was requested to furnish a second railway construction unit, but at battalion strength. This

was organized largely by the initiative of J. W. Stewart, one of Canada's foremost engineers and railway contractors, of Foley, Welch & Stewart, who built the grade for the Grand Trunk Pacific westerly from Jasper and commenced the Pacific Great Eastern.

This enterprising Scot-Canadian was appointed Lieutenant Colonel and during May 1916 gathered engineers and other experienced personnel from Coast to Coast. The new unit was designated the 239th Bn. Canadian Overseas Railway Construction Corps.

Further review of the situation and preparations for the Somme offensive, 1916, indicated drastic steps would have to be taken. Before the 239th Bn. sailed from Canada, Colonel Stewart was ordered, at the request of the War Office, to organize for the construction of light railways in the battle areas. By July he turned over his command to Lieut. Col. J. B. L. Macdonald and went to France to study the transportation crisis. It was estimated that the systems would have to be increased by 90 percent.

Canada agreed to supply five battalions to construct light railways, to be operated between broad gauge railheads, through forward areas, to dumps as close as conditions would permit to the front line. Due to enemy shell fire, operations were frequently restricted to hours of darkness. As the Germans retreated on the Somme front, the 4th and 5th Bns. C.R.T. pushed a rail line through to Albert.

In the rear areas trains operating on the narrow gauge railways were powered with small steam locomotives but forward, within range of artillery fire, the motive power was tractors having petrol engines or horses and mules; where the enemy might observe movements and open up, and sometimes when it was prudent to keep noise to a minimum, troops pushed cars ahead. Rolling stock was mostly gondola type cars and flats.

Canada's commitment was exceeded. It was recognized that as she had recently gone through an era of railway expansion, there were many professionals available who should be employed in the roles they were specifically trained for, rather than in the infantry, unless they had been in the Militia regiments. By the opening of the Battle of Arras, 9 April 1917, when Canada proved herself with the capture of Vimy Ridge, there were seven C.R.T. battalions in the field.

Military Service, 1915 - 1919

C.R.T. forces were engaged as required over the entire fronts of the five British Armies, between near Peronne, in the south, northward to the Belgium Coast. In addition, Brigadier Stewart was frequently called to England for consultations and, twice, beyond to Egypt and Palestine. It was suggested that C.R.T. battalions should be assigned to General Allenby's forces against the Turks, but the situation on the Western Front precluded this.

One C.R.T. unit, a company specialized in bridging, however, was dispatched to Palestine, 20 September, 1918, under command of Major A. P. Linton.[3] This service by Canadians in the Middle East recalled the work of the Canadian Voyageurs who volunteered for river transportation on the Nile, during Lord Wolseley's expedition, 1884/85, to relieve Lord Gordon at Khartoum.

Also, the achievements of the young Canadian engineer, who had some training with the Canadian Pacific, graduated from R.M.C. at Kingston in 1888, and was commissioned in the Royal Engineers. He was Lieut. E. P. C. Girouard and, in 1896, he was placed in charge of construction of the Wadi Halfa - Khartoum railway which facilitated Lord Kitchener's re-conquest of the Sudan. This Canadian was promoted to Lieut. Colonel and awarded the D.S.O. He became Director of Railways during the South African Wars. For his services he was promoted to Major-General and created a knight - K.C.M.G. - in 1900; I suggest that he was the original C.R.T. officer.

By March 1918, the number of Canadian Railway troops battalions on the Western Front had increased to thirteen. At the 11th of November, Armistice Day, the strength of the Corps was 491 officers and 14,390 other ranks.

Between April 1917 and December 1918 they, with at times up to 9,000 other personnel attached, laid 1,169 miles of broad gauge and 1,404 miles of narrow gauge lines, under command of Major-General Stewart, C.M.G.

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[3] Fortescue A. Duguid, Official History of the Canadian Forces in the Great War 1914-1919, Vol. I: From the Outbreak of War to the Formation of the Canadian Corps August 1914 - September 1915 (Ottawa: King's Printer, 1938).

Military Service, 1915 - 1919

Service with the 5th Bn. C.R.T.

Early in April, 1917, I was instructed to proceed to France for duty with the 5th Battalion. The route, with few exceptions, was through the 'bullpen' at Etaples for indoctrination. The R.T.O. directed me to the headquarters of the C.O.R.C.C. at Puchevillers, behind the Somme Front. I arrived there in the evening; the C.O., Lieut. Col. J. G. Reid, hospitably invited me to dinner and put me up for the night. In the morning he informed me that he was driving to Arras, to confer with Colonel Griffin and would be pleased to take me along. This was indeed an indication of good fellowship and esprit within the Corps.

About noon I reported to the adjutant. After lunch the second in command, Major F. L. Grant, was leaving to make an inspection of one of the forward companies' works and thoughtfully took me along, to brief me on conditions. This was in front of Monchy-le-Preux, about five miles easterly of Arras, at times a hot spot, but this day it was comparatively quiet with only sporadic enemy shelling.

In the evening I was introduced to Lieut. Col. Griffin and other officers at battalion headquarters. The Colonel, an experienced engineer, had been in charge of construction of the G.T.P.R. between Fort William and Sioux Lookout before becoming a successful contractor in association with Foley, Welch & Stewart; he had outstanding qualities of leadership and was highly respected. The chief engineer was Major C. Leader, my direct superior.

My first task was to select personnel to set up a survey party. A light lorry (truck) was assigned for the party transport and a motor-cycle to facilitate my personal movements. Our billets would be the lorry and whatever convenient shelter we might find and we would draw rations from the most handy C.A.S.C. depots. My batman proved to be quite a good field cook.

The first survey was to locate a spur to serve a howitzer battery which was camouflaged near the rubble remains of a village. Approaching in the lorry, I failed to observe a sign "No vehicles beyond this point in daylight". An irate major emerged from his dugout and roared in no uncertain terms to me to get the 'blankety-blank' lorry away from there - pronto, before enemy gunners became interested in the target presented. It did not take me long to comply and return on foot to confer with the major and ascertain the most convenient spot for his ammunition dump. He turned out to be an amiable fellow and I learned not to drive vehicles beyond where they should go in daylight.

This was a typical day-to-day assignment. The primary requirement was to make a quick appreciation of the situation, then stake the line, draft a map and profile, then and there, and to hand them to the officer who was to construct the respective track. I was pretty much on my own. Occasional contacts with headquarters provided me with instructions for jobs ahead. It was very interesting as it gave me a broad view of developments. I was fortunate in the personnel with me; the transitman was quick, he had been a timber cruiser accustomed to surveying with a compass without expending time on too much precision when not necessary.

At Arras there was a noteworthy engineering feature. In the chalk formation beneath the city, there were huge caverns and cellars which specialized tunneling companies connected and enlarged into a veritable 'rabbit warren', with electric light and other facilities for underground habitation of troops and for their movement through exits to the trench system without being observed by the enemy.

In the Ypres Salient

From the opening of hostilities, the city of Ypres had been under heavy bombardments, time and again; the historic buildings were by now almost entirely destroyed and, through the Menin Gate, northeasterly, the Salient extended for a distance of five miles towards Passchendaele. This area had been fought over again and again, from the day, 22 April, 1915, that the Canadians held the line against the German gas attack and terrific odds, when the French Algerian Division, on the left, broke.[4]

By the summer of 1917, shelling - day after day, month after month, for some two years - had churned the terrain into a vast quagmire. Craters were filled with slimy water. No trees or buildings were left standing. It was a landscape of complete desolation. Passage on foot demanded the utmost effort, at certain places impassable. Miles of wooden duck-walks, in panels, were labouriously carried forward and placed to form tracks, to be blown up by enemy artillery, only to be replaced, time after time. Men who slipped into the ooze of a crater were in danger of drowning unless a companion was close at hand to assist. Many pack animals, horses and mules, mired, unable to struggle out, some with only nostrils above the muck, were mercifully shot. Here and there, human remains from

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[4] Ibid.

the thousands of earlier burials, friend and foe alike, became shot up and exposed to cause reflection on the destiny of mankind.

Any who viewed this scene will not forget. Mud, however, modified the lethal effect of bursting shells by containing, to some extent, flying shrapnel, compared to a burst on a hard surface. Also, the inherent characteristic of Germans to set methodical routines, led them to fire on certain targets at specific times daily, therefore, careful attention to this could reduce the risk of destruction.

British Summer Offensive, Ypres Salient, 1917

During preparations for the planned attacks, the 5th C.R.T. was moved north to the Ypres area, to maintain and construct light railways as the situation might call for. Breaks in these lines, caused by enemy shell fire were about 100 per day.[5]

When the first attack was launched, 31 July, the front was about two miles east of Ypres towards Frezenberg; the advance gained was almost two miles, to just beyond the latter point, at a cost of 31,850 casualties. Heavy rains brought a halt to this phase of the overall plan. Attacks were repeated 16 to 18 August with slight gains north of St. Julien. Within four weeks, British casualties in the Salient amounted to 68,000, including over 3,400 officers.[6]

During September the weather improved and the offensive was resumed on the 20th. After an artillery bombardment, lasting seven days, two Australian and two British divisions attacked behind a tremendous barrage, astride the Menin Road, with complete success; to be followed on the 26th of September with a strike between Zonnebeke and Gheluvelt and Broodseinde, half a mile east of Zonnebeke, on 4 October. The latter, a triumph for the Australian and New Zealand forces, included the capture of Gravenstafel Ridge. An advance of 4,000 yards in two weeks resulted in a salient which extended to nearly six miles east of Ypres.[7]

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[5] A. J. Kerry and W. A. McDill, The History of the Corps of Royal Canadian Engineers, Vol. I: 1749-1939 (Ottawa: Military Engineers Association of Canada, 1962).

[6] Duguid, Official History of the Canadian Forces.

[7] Ibid.

Late in the evening preceding the 4th of October attack, I was instructed that the light railway, main line, was to be extended to the Zonnebeke ridge and that two companies 5th C.R.T., with an infantry battalion attached to assist, would be at the present end of track to commence construction early in the morning. This meant the line would have to be located with rapid decision over ground I had not seen.

Before daylight we, the survey party, were at the end of steel. Guns, field and heavies, were massed in close formation along the front to open the barrage, the thunder of which was deafening. Sufficient line was quickly staked to set the troops, standing by with picks and shovels, to work grading the roadbed. With that attended to, we continued the survey over the ground the enemy had been driven from during the day.

At times, counter artillery fire disrupted the work. Track was laid with prefabricated panels of light rails and steel ties. They were pushed ahead on flat cars, then carried into place and coupled. At one point, when surmounting comparatively high ground where the line was exposed to enemy observation, the rails were blown up several times. Nevertheless, by nightfall the railway was extended as instructed; and, under cover of darkness, munitions and supplies were transported forward. This was the most rapid location survey, with a maximum gradient of 1 percent and under very interesting circumstances, that I have been responsible for.

It had been a rough day, but that evening when walking back to the rear, I wondered on the terrific odds faced by the infantrymen and the supreme sacrifices they made. Many now lay dead on the muddy battlefield, the seriously wounded were being carried back on stretchers and the walking wounded struggled to the forward dressing stations and field hospitals, where M.O.'s operated with amazing speed and skill. Nearby the Salvation Army endeavoured, with the help of the "Great Architect" and hot coffee, to alleviate the suffering of mankind.

Whereas we were able to return to reasonably comfortable shelter and a hot meal, the infantrymen would be out in the meagre protection of hastily dug trenches in soggy ground, taking enemy fire and consolidating against possible counter attack. The engineers, however, have been an essential arm of the services for centuries; and this is emphasized as warfare becomes increasingly complicated, demanding more and more professional attributes.

After completing the railway in the vicinity of Zonnebeke, the 5th C.R.T. moved back south, into the sector between Bapaume and Peronne, where preparations were to be commenced for a large scale assault towards Cambrai.

In the meantime, in front of Ypres, the 2nd Anzac Corps was relieved by the Canadian Corps, on a front approximating that which the Canadians had held in April 1915. Now, after over two years of bitter fighting by many of the British and Empire troops, on the 26 October 1917, Canadians attacked towards Passchendaele, the final objective of this summer offensive. It was on this day that Capt. C. P. J. O'Kelly, M.C. led his company of the 52nd Battalion in capturing six German pillboxes and 100 prisoners; he was awarded the highest of all honours for valour - the Victoria Cross.[8] Chris O'Kelly was originally commissioned in the 144th Bn. (Winnipeg Rifles) and, another officer, Lieut. R. S. Hayward, who also enlisted with the 144th Bn., was awarded the Distinguished Service Order, for courageous leadership; Bob suffered the loss of one leg.

The 5th C.R.T., Winter 1917/18

During the early winter, following the move from Ypres, we were engaged in maintaining and improving the light railway system in comparatively pleasant sector between Bapaume and Peronne. My personal assignments were mostly reconnaissance for routes which might become necessary with the expected advance towards Cambrai.

On the morning of November 20, after preparations in great secrecy, without pre-attack barrage, British low flying aircraft, artillery, tanks, infantry and cavalry opened the battle, on a front between the Canal du Nord and the St. Quentin Canal, to break through the heavily fortified Hindenburg Line.

It was heartening to witness a massive number of tanks, some 300, moving forward for the first time and, later in the day, the now rare sight of cavalrymen on their spirited mounts.

This action was a successful strategic surprise. Very shortly Germans, taken prisoners, including high ranking officers captured in dugouts to the rear of their front, were being escorted to P.O.W. compounds.

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[8] Ibid.

Following the penetration of the enemy front line, by tanks and infantry, the Fort Garry Horse rode through to exploit the situation. "B" Squadron crossed the canal in front of Masnieres and fought through machine gun units to come upon a battery of artillery in the open. The Garrys, at the gallop, killed with swords or put to flight the astonished gunners and penetrated to within 3 miles of the outskirts of Cambrai.

As other squadrons had been unable to cross the canal, "B" Squadron had no alternative to fighting its way back, on foot, during the night through enemy troops and re-cross the canal to reform with the Canadian Cavalry Brigade, near Masnieres. Lieut. Harcus Strachan, M.C. lead this brilliant and courageous action; he was awarded the Victoria Cross.[9]

On 27 November, when the British front was just north of the St. Quentin Canal, the Germans launched a powerful counter attack to re-take some of the ground they had been driven from. When the fighting in this area petered out, 5 December, for the winter, the British held most of the gains of the 20th November, on a front about five miles from Cambrai.

As my duties required me to move about considerably, I was privileged with a pass, permitting fairly wide travel. Shortly before Christmas 1917, I went into Amiens, to purchase some French frillies to send to my wife and little daughter, Eira. At that time the city had not been seriously damaged, but heavy protective sand-bagging hid most of the beauty of the cathedral and other historic buildings. The shops, however, were open. In the evening I joined three other officers, to engage a hack for conveyance; the clop-clop of the ancient horse's hooves on the cobblestone paved streets echoed weirdly and caused curious stares and some embarrassment on our part.

During this period, the German airforce was very active with nightly bombing on troop encampments. The engines of their craft had a distinctive drone, easily recognizable. They came over on the night of Christmas, but were not successful in disturbing our dinner and jolly sing-song in a Nisson hut which fairly rocked with good cheer. Personnel could take shelter in individual fox-holes, safe against all but a direct hit, and have a comfortable sleep; it was cruelly different for horses and mules picketed in lines impracticable to protect.

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9 G. T. Service and J. K. Marteinson, eds., The Gate: A History of Fort Garry (Calgary: 1971).

One clear moonlight night a light bomber flew low over a train of cars loaded with ammunition and petrol. It scored direct hits, causing terrific explosions. We had a hot time endeavouring to switch out loads from adjacent side tracks.

The 5th C.R.T. had no activities worthy of note during the first two months of 1918. There was a personal incident I have not forgotten. During a discussion about co-ordination of plans, the French officer concerned suggested some feature might not fit in. I impatiently exclaimed, "G-damn it, it must fit". My C.O., sitting in the background, said nothing until the Frenchman left, then Colonel Griffin quietly remarked, "Charles, if you were in the Royal Engineers, you would be either a general or be fired; I think you would be fired". The Colonel was a very understanding older man; it would appear that he did not wish to squash my enthusiasm entirely.

The German Spring Offensive, 1918

History records that reports from Intelligence indicated the Germans to be planning a desperate, all-out offensive to drive a wedge between the Allied Armies and the British to the sea.

On the 21st of March they struck the first blow. After a bombardment lasting six hours, their infantry attacked the front being held by the British 5th Army, which was obliged to withdraw from a point two miles west of St. Quentin, for a depth of ten miles, during the first twenty-four hours; all arms were involved, including engineers. Many of the Canadian Railway Troops, notably the 2nd Bn., assumed the role of infantry, with very effective action against the advancing enemy.

By the 5th of April, the Germans had advanced a further thirteen miles to the edge of Villers-Bretonneux only ten miles from the key railway centre of Amiens. The front about Lens, however, was held firm. Vimy Ridge captured by the Canadian Corps during April 1917, was never re-taken by the enemy.

Brig. Gen. Stewart took command to construct the Pas-Conde Line, some thirty miles long, with about 120 miles of trenches, for defensive action. After that his troops resumed their normal roles on the railways, with respect to the existing situation and to prepare for counter offensive by the Allies, now, at long last, under one supreme commander - Field Marshal Foch.[10]

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[10]Kerry and McDill, History of Corps of Royal Canadian Engineers.

South of the British, on the French front, by the 14th June, the penetration was to a depth of some 38 miles, to Chateau Thierry, forty miles from the heart of Paris; the city was bombarded with guns having a range up to 75 miles, but the damage was not great.

With the 13th Battalion C.R.T.

Subsequent to the German thrust commencing 21 March, the 5th C.R.T. made a night withdrawal, mingled with artillery, infantry and others. When the battalion had re-grouped, I was summoned to headquarters. Colonel Griffin informed me that although reluctant to lose my service, he had recommended me for promotion to be chief engineer, with the rank of major, in the 13th Battalion, presently being organized at the C.R.T. base in England. I was given travel warrants and instructed to proceed without delay.

Due to the existing crisis, instructions were being blared at all stops along the way to Calais, ordering troops, on leave, to immediately return to their units. Many, who for six or nine months, had been anticipating leave, had to make light of their disappointment and turnabout from the gang-plank of the cross-channel boat. Although naturally elated with prospects for promotion and perhaps a short visit with my wife, I went aboard feeling somewhat sheepish, for I did not know I would return within forty-eight hours.

During the journey from Dover to the C.R.T. base at Purfleet, a few miles down the Thames from London, I took the first opportunity to wire Helena to meet me there; she was then living at Brighton, near my mother and sister.

The commanding officer of the base was Lieut. Col. S. P. McMordie, D.S.O. and he was slated to command the 13th Bn. C.R.T. I lost no time in reporting to him. He had recently recovered from serious wounds - one eye lost and one ankle badly fractured - received when holding his position under repeated attacks, although almost surrounded. He considerately said to me, "You may find at times that I become very cranky, but remember I am plagued with violent headaches, caused from the loss of my eye"; also, that I would be posted as officer commanding No. 3 Company, until we reached the field when specific engineering duties would be required.

Most of the complement were recent arrivals from Canada, excepting some who had been wounded in action and had recuperated. When making my first inspection of the Company, I was surprised to see redheaded Angus MacDonald standing in the ranks. He was an old friend of Hudson Bay times, a canoeman and dogskinner with some knowledge of surveying.

Towards evening, I was able to make my way to the local pub nearby and was overjoyed to find my wife had arrived and had booked a room. We were able to have dinner together and I learned that our daughter, now almost one year old, was growing into a lovely little girl; she was being cared for by my Mother while Lena was away. Our reunion was all too brief. About 2200 hours, a runner knocked on the door and informed me that the battalion had been ordered to move immediately. I had to depart on the double and, as so often happens, one's wife is suddenly alone; in this incident, in strange surroundings, to bear the burden while the man goes on his way borne up on excitement.

By midnight we marched off to the railway station, where a special train was marshalled and the guard (conductor), standing with watch in hand, urged all possible haste to entrain. After a fast run, we arrived at Southampton to embark, on the 28th March, aboard a cross-channel boat and, in due course, landed at Le Havre, to depart right away for a camp near Abbeville, where we were held for a day for inspection of arms and equipment.

The 13th C.R.T. Initial Assignment

It was learned that the Germans' advance threatened the main south-north railway routes - before it ground to a halt, the main line between Amiens and Arras was actually cut - so that it was with the greatest urgency that plans were made for alternate support lines.

The principal link was to be known as the Candas-Conchil cut-off, to provide a connection with the main south-north line near the coast, which served the Channel ports. This was a major project, involving some heavy works. The criterion was speed. Four C.R.T. battalions, including the 13th, were assigned, together with a large force of attached units to assist.

When we, the 13th C.R.T., arrived after a hurried move from nearby Abbeville, the proposed line was being surveyed by a party from a company of the Royal Engineers. A very experienced Canadian Railway location engineer, Lieut. E. M. M. Hill, was in charge in the field; he told me later that the O.C. of the company had commenced the survey with Murray (Hill) assisting and, after a day or so, he, Murray, became so frustrated with unnecessary detail, that he blurted out, "Sir, anyone with half an eye and no arsehole could see where this line should go". The O.C. accepted this with sporting grace and left Murray to proceed on his own to rapidly complete the location.[11]

Speed being the 'Essence', men, animals and equipment were concentrated, literally, as close together as practicable, without men, by mischance, hitting their neighbours on the head with a pick or shovel. This, to me, was a forcible example of the different criterions governing military engineering and civil engineering. The former demands speed without consideration of monetary cost, whereas the latter is ruled by the laws of economy, excepting under extraordinary circumstances. Some engineers find it difficult to adjust from civil standards and visa versa to return to them.

Now, as chief engineer of the battalion, I graduated to having an assigned Ford car with driver and, also, a saddle horse; but I missed my motor cycle as it provided more flexible movement, without others knowing where to. Lieut. Roy A. McLellan, with whom I became a close friend, wrote in his memoirs, "Major Burrell, M.C. and bar was my O.C., No. 4 Company. There was a close friendship between Charles and Burrell, principally, I think, due to their dynamic personalities and love of adventure. The location of this work was mostly too quiet for these two officers and they would take off on frequent trips to get some first-hand knowledge of the enemy.[12]

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[11] At the end of the war, Murray Hill returned to Canada as a captain and resumed work in his former position of principal reconnaissance and location engineer, Western Region, Canadian National Railways, and subsequently became Chief Engineer.

[12] Roy McLellan was formerly a partner in the firm of Underwood & McLellan, engineers and land surveyors of Saskatoon. After his return, the company expanded considerably. During World War II, Roy was commissioned in the R.C.A.F. on construction of air fields and facilities. He was promoted to the rank of squadron-leader and awarded the M.B.E.

I scrounged a trip for Colonel McMordie and myself in a Hanley-Page bomber. It was my first experience in an aircraft. All went well until the landing, when the wheels struck a rut in the improvised field, causing the tail to flip up and a fair amount of damage. As I had seen such craft burst into flames under similar circumstances, I thought it advisable to 'get the hell out'. A young Naval Airforce officer near to me said, "There is no hurry". When returning to our billet, the Colonel, a strict disciplinarian towards all, including himself, became apprehensive that a court of inquiry might be set up to investigate the accident and, if so, he and I could be called for an explanation as to why we were aboard; we heard no more about it.

Our headquarters, at this time, was billeted in a magnificent old chateau, having a huge inglenook fire-place which was lined with glazed tiles, decorated with the fleur-de-lis, in the main reception hall. This was near Crecy-en-Ponthieu and the historical battlefield of 1346, where the Black Prince won his spurs.

I often accompanied the Colonel on his daily rounds. He was, in civil life, a contractor at Prince Rupert and had limited engineering knowledge, but he was not too proud to enquire of me about matters he was not familiar with. On the other hand, Colonel McMordie was every inch a soldier. He developed the 13th Bn. into one of the best in the Corps of Canadian Railway Troops.[13] Sometimes we would be washing and shaving by adjacent basins; then, standing in his undershirt before he had replaced his glass eye, the Colonel was the dead spit of an Elizabethan-age pirate. If affairs were not going as he thought they should, out would come his typical expression, "Charles, there is monkey business going on". I had the utmost respect for Colonel McMordie, as I had had for Colonel Griffin and I gained much experience serving under their command.

Our next move was to another broad gauge project; but not of the same magnitude. It too was being engineered, in the initial stages, by a Royal Engineer Company. When we arrived they had not

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[13] Reference McLellan memoirs, "The close friendship between Hill and Charles did much to have the 13th soon established with the R.E.'s and General Stewart as one of the better construction units."

had sufficient time to complete the necessary plan and profile. Camp was pitched and our troops and equipment were in order to commence the job; the Colonel became restless for he was not blessed with a patient nature and disliked marking time. So I was instructed, "Go over and see if you can hurry those fellows (R.E.) up".

I needed no urging and was on my way to the R.E. Company headquarters in a chateau not far away. There I introduced myself to the major in command and spoke my little piece. I was listened to with forbearance and invited to dinner. Following an enjoyable meal, the major, an older soldier with service in many countries, suggested, "There are very beautiful roses in the garden, let's take a walk and look at them". When admiring some especially fine blooms, the major turned to me and quietly said, "You know Charles, things are just not done that way". I thanked him and appreciated that I had just received my second lesson, given in a very considerate manner, that 'there are more ways of killing the cat than drowning it'. In other words, a point may be better put across without an abrupt approach.

In Front of Amiens, August 1918

It was not long before we moved again. The main line was repaired from Amiens easterly to Villers-Bretonneux, close to the Allies and enemy fronts, in preparation for the Battle of Amiens, 8th to 19th August, 1918, when the Canadian Corps, assisted by Australians, struck a sudden and devastating blow to the Germans; the first day's advance was nearly ten miles. The Airforce maintained a continuous strafing of the retreating enemy and cavalry broke through to cause confusion in their rear. The Corps captured 92,000 prisoners, 190 artillery pieces and thousands of machine guns, and advanced to a depth of 13 miles.

Railway Troops battalions moved into the area on the 10th August, as far forward as Rosieres, to restore the main line and push light railways ahead. The 13th Bn. was assigned to the latter. My personal role was general organization and reconnaissance. I was able to allocate actual surveys and details to my assistants, Lieuts. Fred Campbell and Len Yeo; redheaded Angus MacDonald, now a sergeant, was an instrumentman.[14]

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[14] These two officers were from the Canadian Northern Railway. Post war, Yeo was resident engineer on branch line construction and Campbell on maintenance-of-way, Canadian National. Yeo was an inveterate gambler; when on leave, staying at a country pub, he had such a streak of luck that he won, from the proprietor, the contents of the bar and cellar.

Military Service, 1915 - 1919

During this period, I contacted a company of the 78th Bn. (Cameron Highlanders), in the support line and enquired whether Lieut. J. E. Tait, M.C., was thereabouts. I was grieved to hear that 'Scotty', a tent mate for nearly three years on the Hudson Bay Railway prior to our enlistment, had been killed some hours earlier. I was also informed that during the initial day of the battle, he, Tait, had so inspired his men by his courageous leadership, in knocking out an enemy machine-gun post single handed, that twelve machine-guns and a number of prisoners were captured during the attack on Beaucourt Wood. Lieut. J. E. Tait, M.C., was posthumously awarded the Victoria Cross.[15]

The British front was now 23 miles in advance, easterly of the vital transportation hub of Amiens, which the Germans had so desperately endeavoured to capture. They had, however, overrun the main line in the Ancre River Valley, between Amiens and Arras. It, too, was freed on the 8th August; now it became important to restore this line. The 2nd Bn. and 13th Bn. C.R.T. were moved there to do this work. After that, during the last week of September, the 13th Bn. moved to Roisel, to rebuild the rail line between Peronne and Cambrai.

On account of the rapidity with which the enemy was being driven back, work on the broad gauge lines proceeded ahead of the narrow gauge railheads. My duties became daily reconnaissance to ascertain the damage by the enemy's demolitions and to note the positions of suspected delayed action mines and booby-traps planted by the retreating Germans; also to discover materials abandoned which might be of use in re-construction of the railways. Reconnaissance presents opportunity for individual action. I have been especially keen on this, in both military and civil engineering.

Demolitions

German demolition work was the ultimate in skilful planning. Structures were not just 'blown to hell', each was destroyed in a manner to cause the maximum obstruction to the pursuing forces and so the remaining members of each structure would be of minimum usefulness in rebuilding.

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[15] When we travelled together in the North, 'Scotty' used to say, "I like to fight the elements", and about the time we enlisted he said, "I will get the Victoria Cross or a wooden one". He indeed exemplified the best of Highland traditions.

Although I was primarily concerned with the railways, the condition of the relative highways also affected progress of re-construction on the rail lines. German demolition procedure in general was: charges were placed to crater the roadbed, especially high embankments and at junctions; also to destroy all culverts. Bridges were then attended to, with charges to blast abutments and piers; and for the spans to be dropped in positions and lengths to be most difficult to salvage and re-erect. Water, fuelling, signalling and communication facilities were then charged for destruction. Rolling stock and motive power were moved off, excepting two locomotives to power the last train to be operated, to wreck the ties, rails and fastenings. Two locomotives were coupled and a chain or cable, with a heavy duty clevis, was attached at the rear of these units. The clevis was fastened around one ribbon of rail, then the train moved forward, ripping the one ribbon of rail from the cross ties at one end only, into bunches.

A specially drilled team followed the train to place a slab of gun-cotton against every other joint of both ribbons and explode them. This blew one end from all the rails. Concurrently the previously laid charges in the roadbed and bridges, etc., were detonated. Turn-outs were blown with charges under frogs and switch points. Rows of trees and pole lines were felled to drop in a tangled mess of timber and wires onto tracks and roads.

Thus, the Germans presented the British with a Herculean task to restore the railways for operation essential to support of the advancing forces. The first phase was salvage to clear the right-of-way. Joint bar bolts and lag-screws holding the ties to the rails had to be removed by hand. Ties had to be dug up and the ballast surfaced. One end of each rail had to be cut square and bolt holes drilled. Of course, all rails were not salvageable. Concurrently, the grade, culverts and bridges had to be rebuilt ahead of track-laying.

Typical locations for delayed action mines were rail junctions and turn-outs, base of bridge abutments and piers, also highway intersections. Some would explode days and even weeks after railways and highways were back in operation, causing serious casualties and work of rebuilding a second time. Booby-traps were of many devices and might be planted anywhere to surprise the unwary.

Through Cambrai to Valenciennes

The immediate objective for the 13th Bn. was Cambrai, captured by the 3rd Canadian Division on 8th October; then to Valenciennes, the important junction of lines from the south, west and north, to converge into the double track trunk easterly to Mons and beyond, in the valley of the Meuse River, to Germany.

For efficient planning for the works, it was of the utmost importance to have information of what was to be done as far in advance as possible. It was my personal responsibility to gain this and report a daily appreciation of the situation, jointly to Lieut. Col. McMordie and Lieut. Col. D. Hillman, deputy Director of Transportation for this area of the front.[16]

By the night of the 23rd October, the Canadian front was along the west bank of the Escaut Canal, the western outskirts of Valenciennes. Intelligence reports indicated that the Germans were prepared to make a final stand there. They cut openings in the canal dykes to inundate adjacent land and fortified the east bank, also loop-holed the walls of the city buildings facing the canal.

The pace of the advance, forced marches and lack of sleep, was beginning to affect the physical energy of our forces. Transportation of supplies became increasingly difficult. This was aggravated by having to distribute rations to thousands of civilians, left hungry after the Germans had stripped bare the country-side of every possible edible thing. Therefore, the High Command ordered a pause to improve the situation before launching an attack to clear the enemy out from the city and resume the pursuit.[17]

During this pause, my principal concern was to secure topographical and other information required for preparing plans for a railway bridge to cross the Escaut Canal. Canadian infantry forward posts occupied houses along the west bank. From the upper windows I was able to observe and make sketches of the canal, especially the demolished bridge.

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[16] Prior to the war, Dan Hillman was chief of construction, Canadian Pacific Railway, with headquarters at Montreal.

[17] Duguid, Official History of the Canadian Forces.

At the time the dwellings were almost intact, some with fine quality furnishings, including beds with soft silk sheets, inviting for a snooze. I made several visits to one in particular which was being held by a machine-gun section of the 52nd Battalion, some of whom were former comrades of mine in the 144th Bn., Winnipeg Rifles. Of course, I was very pleased to meet them again, especially under the circumstances.

On 1st November, the 12th Canadian Infantry Brigade attacked across the Escaut Canal against determined opposition, especially so as there was no bombardment to blast the enemy machine gunners from their fortified positions. The reason for this was that there were numbers of civilians in the city, amongst whom there was no wish to cause casualties. In general, however, civilians are a hinderance to both attackers and defenders. It is an unfortunate position to be in. On the whole, it is preferable to be a member of the armed forces where there will be some concern for the supply of rations and other necessities.

During the night of 2nd November, the Germans withdrew from Valenciennes, excepting some detachments left to fight delaying rear-guard actions, but with little effect. On the 3rd, I was able to supplement the information required to complete plans for bridging the Escaut and then investigate the condition of railway yards and facilities within the city and environs.

There was one especially interesting example of efficient demolition. A long viaduct carrying the main highway, over the canal and the railway yard into the city, was dropped, as if cut by huge knives, onto the railway tracks, effectively blocking both highway and railway traffic. Each span had to be cut into pieces which could be handled. Reinforced concrete is about the most difficult material to break up.

In the inundated area about the northern suburbs, the stench of rotting fields of cabbages and dead horses was extremely nauseating. It made one think there might be some truth in the rumours circulated that the Germans, desperately short of fats, had desecrated human bodies by rendering them down to the basic elements. There was an abandoned factory with large vats, where the odours were particularly vile.

Military Service, 1915 - 1919

Valenciennes to Mons

Immediately following the liberation of Valenciennes, the general advance was resumed. The enemy was kept continually on the move. The daily gain was seldom less than one mile.

The railway main line emerged from the north boundary of the city, to run north-easterly, parallel to the principal highway, through Onnaing, Quiévrain, Boussu and Jemappes to Mons, a distance of twenty miles. When entering these and other towns and villages, the liberated inhabitants gave us exuberant, overwhelming greetings; they had endured oppression, by the Germans, for so long - four years.

I found the German Army Engineers had continued their methodical demolitions throughout, including bridges crossing the Aunelle and Honnelie Rivers, near Quiévrain, and over the Derivation Canal at the entrance to Mons.

Mons on Armistice Day

Companies of the 42nd Battalion and the Royal Canadian Regiment, at about 2300 hours, entered the ancient town of Mons, which dates from Roman times. By daylight the following morning, 11th November 1918, all enemy soldiers had been driven out. When the Armistice cease-fire time - the eleventh hour of the eleventh day of the eleventh month - was effective, Canadian infantry halted the pursuit at Canal du Centre, by the Village of Havre, five miles easterly of Mons. The 5th Lancers, who had fought the first engagement of the war, August 1914, near this point, were on the left flank of the Canadians.

That morning, I walked along the railway to examine the condition of yards and facilities in the town and met a senior engineer of the Belgian Railways. He invited me to his office in the town and very helpfully gave me condensed maps and profiles of the lines thereabouts.

During the afternoon, I was in the fortunate position to witness the Commander of the Canadian Corps, General Sir Arthur Currie, ride with his mounted staff into the Grande Place to be formally greeted by the Burgomaster. This impressive event inspired one with great pride in being Canadian.

Military Service, 1915 - 1919

Although fighting ceased, work of the ancillary forces continued without slackening. The Canadian Railway Troops put forth the utmost effort to restore the trunk line and open it for operation to railheads established progressively forward, to deliver the gigantic tonnage of supplies required daily for the Allied armies and, to some extent, the population of the ravaged territory.

The outposts established at the time of cease-fire, about five miles easterly of Mons, were maintained until the 18th November, when the 1st and 2nd Canadian Divisions commenced their march to the Rhine. In the meantime, calvalry patrolled ahead, to follow and observe the retreating Germans.

After the Armistice - Charleroi and Namur

As reconnaissance was essential for an appreciation of condition of the railways, I was given authority to go ahead without delay. Although extensive demolitions had been stopped at Mons, there were some craters and the telegraph lines were felled for some miles easterly. Also, explosives had been planted for demolition if hostilities had been prolonged, towards Charleroi; German engineers disclosed the positions, in accordance with the terms of the Armistice. These charges were removed by 14 November.

Sunday noon, when the inhabitants were walking from church, my driver, Pte. Clark, assigned from the Canadian Army Service Corps, and I drove into Charleroi. We were immediately surrounded by a jubilant crowd. A gentleman of substance emerged and invited us to his home for lunch. We readily accepted and had an enjoyable meal with the charming family. In spite of some shortages, it appeared that these people of means were not doing too badly. They seemed a little surprised that I took my driver with me to the dining room.

Pte. Clark was more than an excellent driver, he was a good companion; a Vancouver stockbroker, who could have bought and sold me several times over, presently content to be a war time M.T. driver. Some days later when we were passing the Canadian column at a periodical road-side halt during the march to the Rhine, Clark said, "My brother is over there, do you mind if we stop so that I may say 'hello' to him". He walked up to the brigadier-general, his brother, saluted smartly and had a brief reunion, then returned and said, "It is good not to have his responsibilities", an interesting example of how diverse characters may be, even within one family.

As we proceeded there was more and more evidence of the wreckage of the once great German fighting machine. Huge parks of artillery, dumps of munitions and piles of every kind of war equipment had been assembled in accordance with the Armistice terms. Roadways were littered with discarded uniforms and even weapons. During the early days of the final retreat, the enemy moved all railway motive power and rolling stock which was operational, but this soon became disorganized.

The yards at Charleroi and Namur were filthy from standing trains of troops whose discipline had deteriorated and many tracks were filled with freight cars, loaded with guns and road transport equipment, which congestion and disorganization of traffic had halted from further movement. There were some interesting improvised wheel treads to be seen; wooden blocks, set in rims, as substitutes for rubber tires which had become almost unobtainable by Germans.

On To Liege

As it appeared that the main line beyond was operational and no traffic was presently moving, also diagrams of the signalling lay-outs were obtainable, I commandeered a locomotive and a business car and proceeded, with one of our Canadian enginemen in the cab, to Liege. We arrived at the station late in the evening to be respectfully greeted by the stationmaster, as we were the first Canadians to reach Liege. The British cavalry patrols had passed through earlier.

I was directed to a hotel for the night. On being shown to a room and commencing to wash, I could find no soap. After protracted negotiation, I was given a minute piece and I was informed there had been such a shortage, for so long, that soap was an extremely valuable commodity. Under the circumstances, it was a prized article for presents to feminine friends.

Being hungry, I enquired about a restaurant and made for Maxim's. It was crowded with enthusiastic diners but I was found a seat, attracting curious stares. Instantly two girls eased themselves alongside; this was noticed by two Belgian gentlemen, who came to my rescue, gesticulating and speaking excitably, attracting considerable attention, to my embarrassment. It took me a while to comprehend what this was all about. Finally it dawned on me that these friendly fellows were endeavouring to advise me that the two

females had been shorn of their hair, by the departed Germans, to indicate they were suspected of having venereal disease and should be shunned. My new male associates rid me of the suspects and, after finishing our meals, they insisted I accompany them to their homes.

The streets and estaminets were alive with exhilarated citizens and numbers of prisoners of war, French, Belgian, British and Russian, who had just regained freedom, some after years of confinement in enemy compounds. Naturally my friends and I were in no mood to miss the excitement. Singing groups were dancing in circles around a central figure, either a man or woman. The person in the centre, say, a woman, threw her scarf around the neck of a dancing man she fancied, pulled him to her and they embraced with much hugging and kissing, then the woman gave the scarf to the man and she rejoined the dancing circle. This was repeated alternately, again and again. It was indeed a joyful populace. I enjoyed this fun for some time, then slipped quietly away, to avoid argument with my benefactors and found my way back to the hotel to have at least a little sleep.

Liege to Spa

In the morning, the locomotive was serviced and recoupled to the business car, quite a luxurious one with all the customary appointments. We left Liege for Spa, where the German High Command had established its supreme headquarters, fifteen miles west of the Belgian-German border.

All of the German staff had not departed. When I stepped onto the station platform an armed soldier came to attention and saluted in respect of my field officer rank. After inspecting the railway facilities, I walked into the town, passing some German staff officers of the proud Prussian type, smart in every respect, especially fine, highly polished, riding boots. They went by without any visible sign of recognition or defeat.

The town was quiet, as yet under German regulations and price controls, so I was able to obtain a meal at a reasonable cost. At a photographer's shop, I was given four photographs, taken at Spa, 28 October 1918, the time of the final conference between the German High Command and Allies; they depict:

(1) The Kaiser greeting the Minister of State and the Emperor of Austria, at the entrance to the railway station.

Photo 54. Winnipeg Main Street. Decoration Day Parade May 1916. In foreground Major A.C. Ruttan leading 'C' Company 144th Bn. C.E.F. - 3rd Bn. 90th Winnipeg Rifles, 'Little Black Devils'. Platoon officers E. Brock, J.L.C., N. Mackenzie and M. Perdue.

Photo 55. 'War Dogs' plunged Europe into darkness August 1914. At Spa, Belgium, 27 October 1918, they recognized total defeat, prior to the Armistice 11th November. The German Kaiser greeting the Minister of State and the Emperor of Austria.

(2) General Hindenburg shaking hands with the Hetman of Ukraine.

(3) General Ludendorff and Telet Pasher of Turkey entering the station.

(4) The Kaiser taking the salute during the march-past of his troops, before the decision to capitulate.

I have preserved these photos and believe them to be of historical value, for I have seen no other prints of them.

Return to Mons

Our return journey, with necessary stops at Liege, Namur and Charleroi, was uneventful. The track, very heavy weight rails laid on excellent ties, supported by a good depth of rock ballast on a long consolidated roadbed, was in first class condition between Liege and Namur particularly, where it is located along the north side of the Meuse River, amidst some beautiful scenery.

While I was ahead, headquarters, 13th C.R.T., moved to Mons. I reported to the Colonel that the railway main line was safe for operation easterly to Spa. The British Railway Operating Department was not yet in a position to run supply trains from the Channel Ports into Mons; however, Army H.Q. instructed Colonel McMordie to institute a temporary service to relieve congestion on the roads and so expedite the supply of troops preparing to march to Germany and take up occupation duties, until the R.O.D. could take over.

Temporary Rail Service Between Mons and Spa

A special section was organized with 13th C.R.T. personnel having some experience, prior to enlistment, as enginemen and trainmen and other operating functions. Lieut. R. A. McLellan was put in charge. He, with the assistance of the Belgian railway officials and employees, marshalled equipment for one train to make a trial run to Charleroi on 15th November, and a daily schedule was set up. By the 20th, two trains were in operation until the R.O.D. took over on 27th November, when six trains from the west arrived at Mons destined for Namur. The 13th Bn. filled the gap without incident excepting a goods wagon was damaged and exposed the contents, rum; resulting in a glorious binge for soldiers and civilians alike.[18]

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[18] Reference "Day to Day Experiences during World War I, by Roy A. McLellan for presentation to his many friends".

Following reconnaissance, I was required to drive by road two or three times to Charleroi and Namur. As two Canadian Divisions were marching, about twenty miles daily, to take up occupational duties on the Rhine. I would pass them on the road. Twice I met Norman Mackenzie, who had been instrumentman on the H.B.R., and we were fellow officers in the 144th Bn. He was now captain, riding at the head of his company in the 8th Bn. (Winnipeg Rifles).

Driving on the roads was often tedious as, in addition to military traffic, there were many civilians who had been uprooted from their homes and forced ahead of the retreating enemy. These people, many elderly and others very young, mostly sick from lack of nourishment and exposure to the inclement weather, were now struggling along on foot, pushing or packing a few belongings, to return to their homes which, in many cases, had been destroyed by shelling. Their stoical fortitude was indeed admirable. We gave a middle aged woman and her daughter a lift and found their house uninhabitable. They were ill and weary, but this woman just shrugged and said, "C'est la guerre".

Belgians being of two factions, Flemish and Walloon, were not all loyal. Some curried favours from the invaders and now were not too happy with the defeat. The day of retribution arrived. Women who had given or prostituted themselves to the enemy were shorn of their hair and, as a further mark of shame, dummy Germans were stood up at the front entrances to the homes of these Jezebels.

During this period, it was impressed on me that all educated persons should be at least bilingual. A lady in Namur expressed her displeasure that I was unable to carry on a conversation in French, especially as I was an officer. I suggested that her attractive niece, who appeared to be willing as there had been a long dearth of non-enemy males, might be an excellent teacher. Her aunt looked me in the eye and said, "Vous restez ici bon, vous partez pas bon"; so ended the little interlude.

The cities, towns and villages in the valley of the Meuse River are of historic interest. They felt the first thrust of the rapid German advance during the initial days of this war. Liege was the largest, with a population of some 350,000, but I preferred Namur with its 'Citadelle', built on solid rock. One of the entrance tunnels accommodated a broad gauge railway. Although this fortress dominates the river and city, it was quite obsolete by 1914, so presented no effective opposition to invasion.

Photo 56. General Hindenburg greeting the Hetman of Ukraine.

Photo 57. General Ludendorf and Telet Pasha of Turkey.

These historic scenes were recorded by a local photographer, who gave prints to the writer, at Spa, when on reconnaissance during the final days of World War I.

Respite from Urgency

Subsequent to the takeover by the Army Railway Operating Department, there remained considerable number of betterments to be carried out by the 13th Bn. C.R.T., but there was not the urgency as before. Even Colonel McMordie relaxed a little. He certainly deserved it.

Capt. Caloway, our quarter-master, suggested that he and I go, in my car, to Bruxelles and, in order to finance the trip, we should pool our resources and invest the sum in Scotch whisky obtainable at the E.F.C. at about four shillings and six pence per bottle. On arrival in the capital city, Caloway, fluent in French, called on the manager of a leading hotel and turned a handsome profit on our investment. Then we set about to take in the sights. There were many. Bruxelles did not sleep for some time after liberation. Most of the tabs for our meals were picked up by well to do business-men; the quantities they could put away at one sitting were amazing. All in all, we had a very enjoyable time.

Caloway's financial genius did not end there. For some time he collected, at no great expense, German currency in circulation during their occupation of Belgium. He had the foresight to expect the inhabitants would be granted a period to convert their holdings into Belgian funds. This too netted our wide-awake quarter-master a worthwhile profit.

I had several meetings with the Belgian railway engineer I had met on Armistice Day. He hospitably invited me to a Sunday evening dinner at his well appointed home. This dinner was to celebrate the excavation of his considerable stock of fine wines and spirits he had successfully hidden from the Germans, by burying each bottle and tamping sand around each individually, under the tiled basement floor. He told me the soldiers had searched many times, thumping floors, walls and ceilings with rifle butts. However, they stripped his house of all removable metals, including door knobs. He also said he was forced to carry on his professional duties under their strict discipline.

This Sunday evening dinner, with a cultured family, was a memorable one. The preparation of so many courses, under the circumstances, must have necessitated much ingenuity and each was accompanied by appropriate wine, all topped off with coffee and liqueurs. I deeply appreciated it, together with the enjoyable company and surroundings.

Leave in the U.K.

My turn for leave then came around. I thought it would be nice for Helena and I to meet in Paris, but we were advised against this. Instead, we had a very happy time with Babs, our little daughter, at a quiet spot on the north coast of Devonshire. We stayed at a farm-house close to a high cliff overlooking a beautiful little sandy beach. Being winter, there were violent storms with giant waves buffeting the base of the cliffs. Laying comfortable in bed, it was easy to imagine the rock vibrated underneath.

Leaves were granted for from ten to fourteen days, in a sequence of from six to nine months. The one we enjoyed most of all was in Scotland. Helena and I entrained at Euston Station, London, about midnight. The train was crowded with men and women of all arms of the far-away lands of the Empire and of the British Isles. Lena was the sole girl in our compartment. One seat was being held for a last minute arrival, who turned out to be a major from a U.K. unit. The others were Australians. As to be expected, the major was somewhat reserved for the first hour or so, but later his manner warmed to the exuberant Ausies and to us.

Then he, the major, enquired of me where we were bound for. When I replied, "Edinburgh, for a start", we were then asked, "What are your tastes for a holiday?" We said, "We would like to stay in a country pub where ration cards were not scrutinized too closely, amid beautiful surroundings." Whereupon, the major said "I know such a place. If you wish, I will wire from Crew to the proprietor to ascertain whether he would have room for you." In the morning, on arrival at Edinburgh, there was a reply to the affirmative, which we gladly accepted, saying we would arrive the next day. Our benefactor was, in time of peace, the executive secretary of the Royal Automobile Association; he was later created a knight.

The day and overnight stop in the City was full of interest. Next morning we boarded a train to take us through Perth, to a wayside station where we were met and driven about seventeen miles to our destination, the village of Kenmore at the north-east end of Loch Tay. There was just the one pub, a church, a few dwellings and the nearby castle.

Enroute, we crossed the famous Firth of Forth bridge and were able to see an unforgettable sight - the British Grand Fleet at anchor, with protective balloons overhead. What an inspiring pride it gave one in being a citizen of the Empire. Then, "Britannia Rules the Seas" was factual. The German fleet surrendered and scuttled the pride of the "Fatherland" in these waters.

We had a very happy week. The facilities in this inn were not up-to-date, but the accommodation was very comfortable, with heat from open fire-places and the fare excellent. There were five guests - two opulent officers who had an interest in the deer moors and one younger fellow with about the same modest means as ourselves. We mostly roamed about the country-side. One day I spotted a capercailzie cock, a majestic bird of the Highlands. As a special experience for us, our hospitable host arranged for a gillie to take us fishing on the loch. To him fishing was a sacred ritual; before evening I think he would have gladly drowned both of us unenlightened young persons, more interested in one another than fish. We landed a few small trout, however, and had a grand day on the water, overshadowed by Ben Lawers rising to almost 4,000 feet.

Our return from Kenmore was by boat on Loch Tay, for about twenty miles, to Killin at the west end; then by four horse coach to Loch Katrine to board another boat. The final stage to Glasgow was by automobile. The trip took us through the heart of Rob Roy country in beautiful valleys, with rushing waters flowing from loch to loch, between the heather clad slopes of the surrounding mountains.

At Glasgow we saw a little of the commoner side of life, women with head covering of shawls. Then, it was by overnight train to London and a rush taxi ride from Euston to Victoria, for me to catch the daily boat train to Folkestone and return to duty.

Most cross-country journeys by train necessitated a taxi ride across London to transfer from one terminal to another. On occasion we stayed a few days there to visit the historic edifices and, at night, attend the theatres. Chu Chin Chow and the Maid of the Mountains were all the rage and Dury Lane staged spectacular pantomines, and there were famous restaurants to indulge in.

The last few minutes of our holidays would end on the platform of Victoria Station, without visible emotion. We said "au revoir" and Helena would wave as the train pulled out. Lena was a damn 'good solider' and always continued so through many difficult times she had to face, too often alone.

Departure from Europe and a Halt in England

When I returned from leave, the battalion was preparing to move from Mons to Etaples, where we were to encamp pending further orders. On the 2nd February 1919, the 13th C.R.T. crossed the Channel to England. It was the last Canadian Railway Troops battalion to leave France.

Then there was a frustrating halt at Knotty Ash, near Liverpool, for medicals, checking pay books and other documentation, awaiting space on ships for Canada. The monotony was broken by leave granted for final visits in the United Kingdom. Helena, Eira and I spent part of the time with an uncle and aunt (Colemans) living at St. George's Hills, renowned for masses of beautiful rhododendrons, near Weybridge, within commuting distance of London.

While in Belgium, army orders recorded I was awarded the Distinguished Service Order. Now a telegram arrived from the Lord Chamberlain commanding me to attend an investiture at Buckingham Palace, 15th February, to receive the decoration from the hands of King George V. As each recipient for an award was announced by the Chamberlain, the King graciously pinned the respective medal on the officer's tunic, said a few words and shook hands. It was indeed an impressive ceremony, held in the stately ballroom of the palace, with the band of the Grenadier Guards on duty. Each officer was permitted to invite two relatives; Helena and my Mother were delighted.[19]

Back again at Knotty Ash, I was assigned to "married billets" in a private house, in order that my family would be on hand to embark for Canada on short notice, but there was to be more waiting. Major C. E. Ewart, D.S.O. and his wife - old friends from construction of the G.T.P.R. Alberta Coal Branch - were in the same situation. As Cecil knew a ranking officer at Canadian Headquarters, he went to London to seek relief from boredom; this resulted in allotment of a first-class cabin, to each of us, on the S.S. Melita, expected to be scheduled before the end of March. I was very thankful to Cecil Ewart; there are times when it pays to have friends at court!

Homeward Bound

The date of sailing was announced. It was the day for the running of the famous Grand National Steeplechase at Aintree, near Liverpool. Taxi drivers were more interested in fares going to the race than a commonplace trip to the docks, but much scurrying around brought success for Helena, Eira and I, with our luggage, to go aboard the Melita, a comparatively new ship. We were shown to a very comfortable cabin in the first-class section.

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[19] Previously I had had two 'Mentioned in Dispatches'.

Most of the passengers, being happy to be returning home, were especially friendly. Eira (Babs) celebrated her second birthday afloat. When running about the promenade deck, with her reddish hair and a paddy green outfit, she attracted much attention. It was a very happy passage. Lena, an excellent sailor kidded me for being seasick; she was particularly amused one evening when, after dinner, I just made it to our cabin and laid down with an arm extended showing the crown on my sleeve. A couple, from a lower deck, walking by our cabin looked in and the soldier turned to his wife, exclaiming, "Look at the old major, sick as a dog".

On docking at Halifax, disembarkation formalities went smoothly and we soon entrained on the C.P.R. for Toronto, to a happy reunion with Helena's relatives, excepting that her brother Archie, was not there. Sgt. Hamilton, Canadian Field Artillery, had died of influenza at Le Havre, on his homeward journey. One of her cousins, Will Hamilton, had been killed in action. Lena's younger brother, Herbert, although seriously wounded serving with the Canadian Horse Artillery, however, was safely home. Welsh-born Babs received much attention.

Demobilization

Although life in the Army appealed to me, I realized it was time to re-adjust to civilian employment as quickly as possible, for I now had the responsibility of a family. This was uppermost in my thoughts.

The morning following our arrival at Toronto, I went to Ottawa to call on Mr. W. A. Bowden[20], Chief Engineer, Department of Railways and Canals, with jurisdiction over the Hudson Bay Railway, from which I had been granted leave of absence to enlist. He did not appear to be interested in returning soldiers so I went to his superior, Major Graham Bell, Deputy Minister, who gave me every consideration.

Major Bell invited me to have a chair and briefed me thoroughly on the railway situation. Construction had been suspended on the H.B.R. and operation on the completed section was very restricted; also, both the G.T.P. and the C.N. had become insolvent and were in the process of being amalgamated into a National system by the

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[20] Wabowden on the H.B.R. is named for him.

Government of Canada, to be operated basically as a private corporation. I was entirely ignorant of this situation. The major went on to inform me that the vice-president for the Western Region of the new system, to be known as the Canadian National Railways, was Mr. A. E. Warren at Winnipeg. I was then given a letter of introduction and recommendation to Mr. Warren, for which I was deeply appreciative and returned to Toronto.

Next day, again following the advice, "Go west young man, go West", I left for Winnipeg. Lena's hospitable folks were puzzled that I declined their kind invitation to holiday with them. I had, at the time, an overriding objective - secure employment.

On arrival at Winnipeg, I reported to H.Q. M.D. 10, where I was given a final medical examination and granted discharge. Records show, "'Struck off the strength, 13th April 1919', active force, and posted to reserve, Winnipeg Rifles", which gave me the privilege to continue association with the Army.

Photo 58. Sgt. Archibald Hamilton, R.C.A., died in France.

Photo 59. Helena's brothers - Gnr. Herbert Hamilton, R.C.H.A severely wounded.

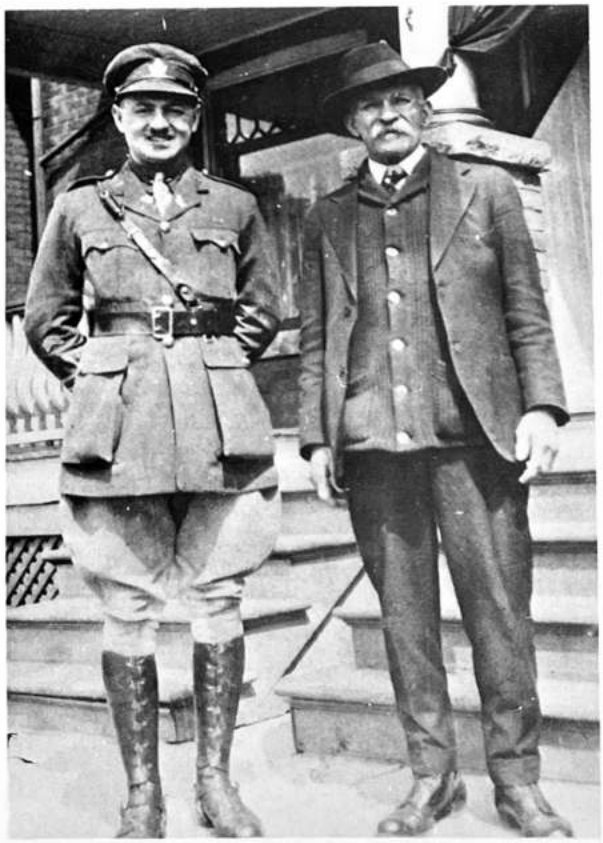

Photo 60. J.L.C. with Arch's and Herb's father, Mr. Michael Hamilton, at Toronto, March 1919

11. POST WAR RAILWAY DEVELOPMENTS, 1919-1926

Return to Civilian Life

The train from Toronto arrived at Winnipeg in the morning. I immediately proceeded to Fort Osborne barracks to obtain my discharge from the Army (active) and by early afternoon I was at the Union Station, carrying the letter Major Graham Bell had so kindly given me for an introduction to Mr. A. E. Warren, Vice-President, Western Region, Canadian National Railways.

When searching for Mr. Warren's office, I met a gentleman of substantial appearance and enquired of him where I might find the Vice-President's office. He was Mr. Wm. Burns, Engineer of Construction. I informed him of my reason for wishing to call on the Vice-President, whereupon Mr. Burns sized me up, in uniform, and asked a few questions. Then, standing in the hallway, without formality, he said, "When can you go to work?" I replied, "Right now, sir" and was informed that there was a vacancy for a transitman on a location survey, rate $125.00 per month and board. It was unnecessary to deliver the letter to Mr. Warren and I did not meet him until some years later.

Mr. Burns lead the way to his office and had his secretary furnish me with a pass to leave that same evening by train for Peebles, a flag stop between Kipling and Regina, Saskatchewan, to report to the chief of the party - L. E. Silcox.[21]

I was encouraged by Mr. Burns' friendly, direct manner and to be taken on the Railway payroll the same day as being struck off strength of the Army. I had no clothes other than the uniform on my back, so purchased a felt hat and was wearing it when entering the station rotunda to board the train. A military policeman approached, saluted and enquired, "Have you lost your cap, sir?", to which I replied, "As soon as I entrain, I will remove the insignia from my uniform and become a civilian."[22]

The dining car attracted me and, after a satisfying meal, I contemplated my position. To revert from a way of life I had become accustomed to - with authority, a car, a batman and the atmosphere of an officers' mess, and with a reduction in pay, presented a definite change. I was fortunate, however, to secure employment so quickly and I had a generous gratuity coming because of 'overseas' service; also, I would be working with a very good friend.

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[21] Major L. E. Silcox, D.S.O., being a bachelor, had returned to Canada earlier.

[22] The one tunic and slacks lasted until fall.

Early the next morning the train arrived at Peebles - a general purpose store and post office in the dwelling of the C.N.R. signalman who operated the tower controlling the diamond crossing with a C.P.R. line. On enquiring where the survey party was camped, the signalman offered to drive me to it, about ten miles south.

It was a beautiful spring morning with sharp visibility for miles towards the horizon. Prairie crocusses and pussywillows were opening out, ducks were mating on the sloughs and prairie chickens on the knolls. I arrived at camp in time for a quick breakfast and to climb into the wagon with the crew to drive to work - all within twenty-four hours of demobilization.

This survey was for the location of a proposed line between Peebles and Lampman, of which twenty-one miles were to be constructed at the time. The location party, chainmen and so on, were of a different class from the men we had before the war. They lacked interest. One day, standing by the transit, the following remark drifted downwind, "The son-of-a-bitch expects us to run". I did, too, for that was the way I had been initiated. This was my first notice of the generally deteriorating attitudes towards work which appear to be still continuing today.

This short job was soon completed and the Chief moved with his party to another line. I was then appointed to resident engineer in charge of construction from Peebles southerly, rate $150.00 a month.

Branch Line Construction

Subsequent to the war both the Canadian National and Canadian Pacific were keenly competitive in construction of branch lines, particularly on the prairie, in relation to marketing grain which was generally delivered by horses and sleighs from farms to on-track elevators. The location of railways therefore was influenced by the round trip distance which could be travelled in a winter day. This resulted in lines about thirty miles apart.

The development of trucks, powered with internal combustion engines and of surfaced highways for them to travel at high speeds, has caused the public to look askance on the earlier location of railways, without considering the reason. Whereas, on the other hand, there is strenuous objection to the railways' applications for abandonment of superfluous lines to improve the present overall economy of marketing agricultural products.

Post War Railway Developments, 1919-1926

Peebles Southerly Branch

Immediately the location survey was completed, a contract for grading and installation of culverts was awarded to one of the strongest of Western contractors, Wm. A. Dutton, spring of 1919. As the ground became free from frost, work commenced. The principal items of equipment were two, horse drawn, elevating grading machines. Personnel and animals were accommodated in the typical circus style camp of the era.

For me, with one rodman and two chainmen, it was a busy time to stake - cross-section, etc. - the work ahead of the contractor's force. Our outfit, apart from instruments, was two 12' x 14' tents and a couple of tin wash basins. We obtained board at a farm or with the contractor. One accepted such conditions or was without a job.

The rodman, apparently having been advised of my army habits, put on quite an amusing act - standing at attention when he reported in. He was candid, that he had had no experience on surveys; his previous employment had been clerical, in Winnipeg, until he fell asleep at his desk after a night of dancing at Grand Beach and the boss told him to go home for a good sleep. This was probably the best thing that could have happened to Alvin Maunder. He developed into one of the most physically and mentally alert assistants I have had. It was a pleasure to work with him and to have him in camp. We were together several years until he sought an opportunity in the Chief Engineer's office, which lead to the Industrial department and Alvin retired as Commissioner at Edmonton.

Perforce, my wife and daughter had remained at Toronto until they were able to travel with Helena's eldest sister to Winnipeg and be with her there. The disastrous general strike hit the City early in June. It appeared supplies, particularly milk for children, might be difficult to obtain. Lena decided to join me, literally on the prairie. I was sleeping on a pile of straw in a corner of my tent and boarding with a farmer whose wife, Mrs. Millar Wray, was an excellent cook, so I was faring well in that respect.

When going out to work one morning, I was surprised by the unexpected arrival of Lena and Babs, driven by my friend, the signalman. This was their first venture far beyond city limits. I was delighted with Lena's enterprising spirit and acceptance of a makeshift bed in the corner of the tent. Mrs. Wray kindly boarded us. Later, as the work progressed, we boarded with the contractor.

Next day I obtained lumber to lay a floor and build a table and chairs. I sent away for a combination couch-bed, a cot for Babs and a large grass mat, but that was the extent improvements were practicable. Sanitary facilities continued as a portable biffy, over a hole in the ground, a water pail and wash basin. Lena was always well groomed; with so few means, how she maintained her high standards for herself and Babs was a marvel. This summer and fall was perhaps one of the happiest periods of our long life together.

The contractor, Mr. Dutton, was a tall handsome man with a great mass of grey hair and, as characteristic of successful contractors, he wore an enormous diamond ring. It was a coincidence that he was on the same train from Winnipeg as Helena and Babs. He noticed them and introduced himself and assisted them on arrival at Peebles. His son, Mervin, later "Red" of professional hockey Hall of Fame, had recently returned from Overseas and was now timekeeper on the job for George Sproule, Superintendent, who thought Merv and all young prospective contractors should be initiated by driving a team of mules on a dump wagon. This lead to a friendly private war between them. We developed to be life long friends.

Merv took a deep affection to little Babs and would entertain her by the hour, as did George and Mrs. Sproule too. About halfway along the summer, Mr. Dutton purchased a Ford car, for a run-around instead of a team, to scout for hay and oats and other supplies obtainable locally. Merv drove all-out on the trails, two parallel ruts in the prairie. It was really fun to ride with him and, in the fall, we had some good shoots together.

During July a cyclone struck, causing much damage to buildings and machinery around the country-side. George's circus type horse and cook tents were flattened. Strangely, our little tent stood stoutly throughout the holocaust; there was nothing one could do but just snuggle down in bed and hope for the best. Again, it was good to have a non-flappable wife, especially as our second child was expected before long. At the end of September we considered it would be better for Lena to go into Winnipeg to prepare.

Annual freeze-up came by 19 October, 1919, three weeks before normal and closed down all grading, leaving two miles of light work unfinished. I remained for another month completing measurements and then moved into Winnipeg.

Post War Railway Developments, 1919-1926

Winter 1919-20 in the Winnipeg Office

When I reported in to Mr. Burns he set me to work with his assistant, Scotty Morris, formerly of the H.B.R., a staunch friend to all of the field staff. Murray Hill, whom I had met in France, came in later. He was responsible for all reconnaissance and general planning of routes for new lines. Mr. Burns and his secretary, Mrs. Stewart, occupied a private office; Murray, Scotty and I worked in the adjoining space between Mr. Burns' office and the Chief Engineer, Mr. H. A. Dixon's, private office.

All plans, profiles and estimates, etc., were completed in the field before submission to Mr. Burns for his scrutiny and processing, including examination of payrolls and expense accounts, etc. Mr. Burns, Scotty and Mrs. Stewart handled it all for the entire Western Region, Port Arthur to Vancouver Island, an amount of work that today requires several times the personnel, even with the former region split into two and staffs at both Winnipeg and Edmonton.

A cordial atmosphere pervaded the office. Mr. Burns never removed his hat; he sat with it on at his desk unless a lady called. He was a man of few words and was very careful of expenditures, especially on behalf of the company, but showed much human kindness to his staff.

Coffee Breaks had not been heard of, however, there were interludes for good-fellowship. Mrs. Stewart would slip out from the private office to hear the latest story; one day Murray Hill described taking a girl to dinner in Paris; he struck a deal with the head waiter to wine and dine them, of the best, for a certain sum. Mrs. Stewart commented, "My, you must have slept well after all of that". Murray looked up and said, "Lord no, that girl would not let a fellow sleep!"

When passing through to confer with Mr. Burns, Mr. Dixon would occasionally pause to narrate some of his early physical feats, such as portaging enormous stoves and grindstones. Once he looked at Scotty and said, "It would appear you think that's all B.S." and received the retort, "Maybe so, Mr. Dixon".

On the first of December, Lena entered the Misericordia Hospital for maternity. On the fourth our son was born, but not without complications - so serious that Mr. Burns came out from his office to inform me that a phone call had come from the hospital; I was to go there immediately. But, thanks to Dr. Meindl, Lena pulled through and was able weakly to say to me, so proudly, "John Hamilton".

Post War Railway Developments, 1919-1926

Our home for the time was a suite in Smith Court, overlooking the well treed grounds of the Mounted Police barracks where the Winter Club, now H.M.S. Chippawa, was later built. Lena's youngest sister came from Toronto for a visit and once, when opening the door, was surprised to be faced by a bear, the Mounties' mascot. Gertrude did not know this and thought she was confronted by a wild animal, so ran, with little quick steps, restricted by high heels and tight skirt, along the hall seeking help which soon came in the form of a constable who explained that the bear had learned to open simple door latches, such as on the front door of the block. Gerturde said she expected the West to be wild, but not quite so wild as to have bears attempting to enter city apartments.

With the approach of spring, Mr. Burns looked over my shoulder at the drafting table, to say, "You will not be returning to Peebles, I am sending you to a new line north of Prince Albert; nice country for you to take your wife and children". We have never forgotten his kind thoughtfulness.

Prince Albert North-easterly Branch.

This line was to be built to assist in opening up a track of virgin land for "Returned Soldiers' Settlement" in the Paddockwood district, thirty miles north-east of Prince Albert. Location of the right-of-way was established during the winter of 1919-20 by an old-timer, Mr. Knowlton.

In April, Mr. Burns informed me the rate for resident engineers would be raised to $200.00 a month, and we would be furnished with good camp equipment and a cook, also, a car to be purchased by the engineer and rented to the company. This was indeed a welcome improvement in working conditions; and the engineer's wife and children would be permitted to board in camp at the Company's expense.

I purchased a Ford Model T in Winnipeg, for cash. The trial run was to the Lower Fort with Lena, Babs and John, also Major Silcox, who happened to be in the City, as passengers. All was well. I shipped the car to Prince Albert and, in a few days, followed with the cook, rodman and two chainmen.

On arrival, we drove over the route to Paddockwood and selected a camp site by the Little Red River, on well drained, sandy ground, about twenty feet above water level, in a nicely treed area. Three

tents were then pitched - for the cook, the boys and an office, which also served as my quarters. About the end of May my wife and children arrived and a fourth tent was set up for our personal use; Babs was three years and John just six months old.

As this branch line was through fairly heavy bush country and work on the open prairie was obtainable, there was difficulty in getting a contractor to bid on this job. After much delay a contract was awarded, on a partial cost plus basis, to Hett & Sibbald.[23]

During the wait for construction to commence, I kept busy with some refinements to the location and also instructions came for me to go to Saskatoon to make a preliminary survey for Nutana Yard; this was to be done without causing local curiosity which might raise the price of property.

As I would not be away long, Lena and the children stayed in camp with the cook. He was a trustworthy old fellow and a fair cook, but a little queer. One noon, Lena was preparing to go to lunch and saw an old Indian, with long braided hair in old-time style, making a fire on the far river bank to boil a pot of tea and have a snack. This startled my wife, so she ran with her children to the cook for advice; he said, "Mr. Charles has a gun in your tent. If the Indian makes one move towards you, shoot him" - no doubt a kindly inoffensive old fellow. When I returned to camp we had a good laugh about it. Also, as it was my habit to eat and get up from the table quickly, often without comment, old Bill asked Lena, "Does Mr. Charles ever speak to you?"[24]

Late in the summer right-of-way clearing and some grading was commenced. We had a very happy season in this beautiful country of low rolling hills, well wooded with aspen, spruce and jack-pine, except for a few farm clearings where we could purchase fresh dairy products and vegetables and, at times, meat. Game, too, was plentiful, so we fared well.

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[23] Target prices were agreed to; if the actual cost on completion was lower, the contractor received a proportional bonus; if costs were higher, there was a proportional deduction. Hett was formerly a resident engineer on the south end of the H.B.R. and an officer in the 6th C.R.T., Sibbald had been a bank manager. They performed in a satisfactory manner, for the mutual benefit of themselves and the C.N.R.

[24] In large construction and lumber camps, conversation at meals and smoking at the table afterwards was strictly prohibited; cooks enforced this, if necessary, with a cleaver in hand.

Post War Railway Developments, 1919-1926

Freeze-up stopped the contractor's activities and ours in the field for this year, 1920. We closed camp, moved into Prince Albert, stored the Ford and entrained for Winnipeg, to return to Mr. Burns' office and Christmas and New Year's celebrations in the city.

The Pas to Flin Flon - Location Survey

Original discovery in the Flin Flon mining field was Mandy, in 1915, basically copper, so high grade and in such demand under war time conditions, that it was viable to mine and transport it via Lake Athapapuskow and other waters, with a number of portages between them, during summer by scows and winter by horses and sleighs, ninety miles to The Pas, for shipment by rail to be smelted at Trail, B.C.

At the same time the main ore body at Flin Flon was being proven, indicating such a large tonnage that railway transportation would be essential for development and marketing.

In the fall of 1920, CN undertook to survey a location for the proposed railway from The Pas, through Cranberry Portage, to Flin Flon - 88 miles. Mr. Hill carried out the reconnaissance and directed two survey parties under A. J. Sill and L. E. Silcox respectively; the latter was assigned the more difficult part through rugged terrain of rock ridges, lakes and muskegs, north of the portage.

In mid-January 1921 I was sent to be assistant to Major Silcox and had an interesting three months under his chieftainship. "As the days lengthen, the cold strengthens" was factual. During the most severe period, however, with temperatures down to minus fifty degrees, we occupied the old Mandy Mine buildings; the office of logs, with a large open stone fire-place, was very comfortable to return to each evening. It is surprising how much heat one can absorb under such conditions. We would heap on the wood and just about roast the draftsman who worked indoors all day.

Transportation was with teams and sleighs, for moving camp, also to go from camp to working points and return. Often one would run in preference to riding in the cold, to be kidded by others, saying, "I would rather freeze, like a man, than run like a dog".

Mr. Hill had a mobile home, a well insulated miniature sort of covered wagon set on a sleigh which he and his teamster dwelt in when out on their own. The teamster was typical, a first-class

man but with a tendency to be grumpy. Once when Murray scouted ahead on snowshoes, he circled to a point opposite the sleigh with but a narrow rock ridge between and heard, in the frosty atmosphere, old Jim exclaiming to himself, "The son-of-a-bitch is lost, he's lost", much to Murray's amusement.

St. Patrick's day, 17 March, was the starting date for the annual The Pas Dog Derby of 1921. The course was to Flin Flon and return, 200 miles with no specified rests, each musher used his judgment as to what he and his dogs could endure. Minimum elapsed time won. Our camp, at the time, was alongside the trail near the bank of the Sturgeon Weir River and we had a path to get water from a shallow open rapids. The racers passed by during the night. The first was Walter Goyne but his leader turned into our trail to the water hole and upset the sleigh. Walter quickly straightened out his dogs and was on his way, wet and cold, through the sub-zero night. It was a gruelling race, for man and dogs, in comparison with the 150 miles now run, in one 50 mile lap on three consecutive days, with a night's rest between each.

The job was completed barely in time for the party to travel out on the slush covered lakes. The Chief, too impatient with the pace of loaded sleighs, said to me, "You look after the outfit", then took off by himself. He was tops walking and running and enjoyed making fast journeys, so made it to The Pas a full day in advance of his party, which arrived just in time, 7 April, to cross the rotting ice of the Saskatchewan River before break-up.

During this outward trip we met some mining officials going to Flin Flon and learned from them the disappointing information that further development was to be suspended as no economical method had been discovered to process the extremely complex ore, although predominantly copper. This was indeed gloomy news for the townsfolk of The Pas, who had been anticipating a boom. It was then not known that this problem would be solved within seven years.

Prince Albert North-easterly Branch - Completion

Following my return from the location survey to Flin Flon, I had two weeks at home and work in Mr. Burns' office, then set out to resume construction from Prince Albert to Paddockwood. Effective 1 May 1921, there was a general reduction in rates of pay, to $187.76 a month, for resident engineers.

Our camp site this year was on a beautiful sandy ridge, amongst spruce and jack-pine, overlooking a small lake. Excellent water was obtained by digging a well to no great depth. We erected a superb camp; all tents were fully floored with lumber and had frames of native poles, one tent each for the cook, crew and myself. The latter was one and one-half 14' x 16', making a floor area 14' by 24', with a large picture window in the front and a wooden door on one side. A double roof made this a very comfortable abode, divided into a living room and bedroom, to accommodate the family, two adults and two young children. We all had our meals in the cook tent.

The cook was excellent, an especially good baker, an all-round fellow, tolerant with children and would fix up little specials for them and my wife.

As Helena is very fond of flowers, I endeavoured to have a little garden at camp but in this sandy site it was not practicable. I enquired what might grow and was told, "Most anything, if you sit there with a watering can all day", as much as to say, "What a stupid question!"

Immediately the ground could be ploughed, grading was underway. Hett & Sibbald strengthened their force by subletting several miles, on the north end of the job, to Bryson Bros., to ensure completion by freeze-up.

The finances of a land surveyor living in Prince Albert at this time were strained. He had a well bred saddle horse which was costing him too much for board at the livery stable, so I was offered the use of this mare if I would care for her in camp, to which I readily agreed. This supplemented my means of getting around the more inaccessible parts of the job and for hunting. Although this animal was spirited, she would permit me to fire a shot-gun from the saddle. John, not quite two, loved to ride, sitting by the pommel, with me.

It appeared all was too happy and we were brought down to earth by Babs becoming seriously ill. Before leaving Winnipeg, Lena had taken Babs to a doctor and was advised there was nothing to worry about, but after a few weeks in camp there suddenly appeared to be something wrong. I drove into Prince Albert for the Railway doctor and he returned with me without delay. After making his examination, Dr. Millar said we must take her to hospital. He wrapped Babs in a blanket and we drove into town; Babs was admitted that evening. Lena, John and I stayed in the hotel.

Photo 61. Helena and Eira (Babs) were introduced to the open prairie, on construction of the Peebles S.W. Branch, Saskatchewan, June 1919.

Photo 62. Then next year to the bush, with John, age 6 mos. on the line to Paddockwood, north-east of Prince Albert.

Photo 63. In 1921 we moved to a sandy ridge overlooking a small lake; John loved a ride.

Photo 64. Indians lived close to nature, without welfare.

Next morning symptoms were worse. Dr. Millar consulted a colleague; they diagnosed mastoid and called in a surgeon specializing in eye, ear and nose. Arrangements were made for an operation. This relieved the condition in the ear but several abscesses formed on Babs' joints, one very bad one on an ankle. She was in hospital to the end of July and wore a head bandage for some time after returning to camp and went to town for periodic new dressings. Lena diligently massaged Babs with olive oil to restore the use of her limbs. During the crisis Dr. and Mrs. Millar kindly invited Lena and John to stay with them to be near the hospital.

The job progressed well; relations with the contractors were good. And, my little engineering crew - Maunder, Ferguson and Sapt - was first-class; young, energetic fellows working as a team. We covered a lot of ground in a day and had time for sport too. We always had guns handy. Midday lunches on line consisted of one cold roast mallard duck, prairie chicken or partridge each with a pot of tea by an open fire. The cook was also an enthusiastic sportsman and an expert in preparing game.

Hett & Sibbald completed their contract by freeze-up but we, the engineers, had to measure and calculate the quantities of the items included. When temperatures dropped, we closed the tent camp and moved into a vacant farm-house which was for rent and were very comfortable.

Deer were not difficult to hunt and a farmer friend and I drove with his team and sleigh to near Montreal Lake where we stayed overnight at an abandoned lumber camp. Next morning we had not been out long when we sighted an elk, through the trunks of aspen - for an easy shot. After dressing it, we remained for the day but did no more hunting; one bounty was ample.

Lena, Babs and John enjoyed daily walks, with a toboggan, through the woods and I set some traps to interest them. They caught a number of weasels which, together with some we purchased, were dressed and made up into a luxurious ermine stole, with all the black tipped tails showing. It is still in good condition. This environment continued with a Merry Christmas and New Year, until the first week of January, when we returned to Winnipeg.

As Babs' ear did not appear to be completely healed from the mastoid operation, we took her to Dr. Washington, a specialist, who treated her for some time, then off and on for several years.

Post War Railway Developments, 1919-1926

Co-ordination Surveys

The early years of the 1920-30 decade comprised a period of co-ordinating two railway systems - Grand Trunk Pacific and Canadian Northern - for cohesive operation by the Canadian National Railways, in the process of organization. This presented many problems with respect to the economy and politics of Canada.

In the West, the most urgent project was to eliminate one of the duplicate main lines between Edmonton and Red Pass Junction, west of Jasper, where the adjacent lines diverged - G.T.P. north-westerly to Prince Rupert and C.N. south-westerly to Vancouver. Mr. Hill was assigned to study whether one line, in its entirety, should be removed, or sections of each of the two lines taken up and inter-connections built. The latter was adopted, saving costs for maintenance-of-way and structures on 270 miles of main track.[25]

Surveys were also conducted to endeavour to abandon a further twenty miles of main line, west of Red Pass, either a section of the G.T.P. Tete Jaune Subdivision, or of the C.N. Albreda Sub-division; Arthur Legge was chief. Conditions were such that econo-mies had to be enforced,so Mr. Burns sent me out as draftsman, rate $137.76 a month, until construction re-opened in April.

Several lines were run in an endeavour to obtain a route for a connection without destroying the favourable features of the two existing lines at this point, known as the "Tete Jaune Hill". This proved impracticable; however, it was a very interesting exercise and the scenery, looking towards Mr. Robson, altered with the weather and times of day, and the soft pink 'Alpine Glow' at sun-rise was enthralling.

Packy Macfarlane, a chainman, was a character who knew some-one everywhere. Our camp was near the water tank at Jackman; there was only one person, the pumpman, anywhere near. We all thought Packy would be stumped but, no, the pumpman walked along the track, looked up and said, "Hello Packy, you old S.O.B.!"

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[25] Mr. C. S. Gzowski, recently appointed System Chief Engineer of Construction, gave overall direction and Mr. J. G. Sullivan, Chief Engineer, C.P.R. Western Region, who had been responsible for the famed engineering on the spiral tunnels, was called in as consultant.

Post War Railway Developments, 1919-1926

Neebing Yard, Fort William

The increase in production of grain to be marketed through the terminal elevators at the Head of the Lakes and the amalgamation of C.N. and G.T.P., brought about the need for expansion and improvement of switching and delivery facilities. It was decided to construct a new yard, with services for maintenance and dispatch of motive power and car equipment, at Neebing, where the main lines from the west funnelled trains of grain for transfer through the elevators to lake shipping.

Also, in connection with the new yard, the main line of the Canadian Northern from Winnipeg and the G.T.P. branch line from Sioux Lookout were to be connected at Conmee Junction with the C.N. to be double tracked between Conmee and Neebing, to provide a direct approach for trains via both the North and South routes to the new receiving yard; and, also, eliminate the G.T.P. between Conmee Junction and Fort William.

Mr. S. B. Wass, who had recently completed amalgamation of facilities at Moncton and then visited terminals in the U.S.A. to study up-to-date developments, was appointed senior engineer to construct Neebing Yard and the approach double track. Two resident engineers were assigned towork with Mr. Wass. One, Homer Currie, was to be responsible for the buildings, while the other, J.L.C., was responsible for the grading and trackage of the yard and the second approach track.

The main components were the receiving and distributing yards, with a 'hump' between for gravity switching. The ultimate layout was designed for construction of 86 miles of tracks. Buildings consisted of the engine-house with turntable and machine shop, water and fuel facilities, car repair services, yard office and bunk-house. No contracts were let. The engineers set out the works and directed actual construction with Railway forces and equipment, also some rentals. This project, under Mr. Wass' general direction, gave me valuable experience.

This was the first 'hump' yard to be constructed on the Canadian National System. We had no criterion for design of gradients on the hump, for switching under a wide range of temperatures - 100 degrees plus to 50 degrees minus zero, Fahrenheit. A compromise was necessary between gradients on which cars would drop freely during both summer and winter, also for cars of various weights, with only hand brakes for control. This required many interesting experiments.

My first visit to the yard site was by street car from Fort William to the west end terminus near Neebing. As the car progressed, other passengers detrained, until only two remained - a most curvatious, smartly gowned lady and myself. It would be unnatural for any healthy male not to be interested and to wonder who this obviously affluent lady might be, alighting at the very end of the street railway, more or less in the country. From there it was about a mile walk to the site of the new yard.

A temporary office was erected and the following Saturday I walked in and, there, behold, was the attractive lady in conversation with the accountant, Major Money,[26] who introduced me; whereupon she exclaimed, "Oh yes! the gentleman who was so interested in me on the street car!" I could have dropped through the knot hole in the floor. Kyle told me afterwards that his friend was a Portuguese countess, to whom he had introduced himself on the promenade at Folkestone. The Countess was presently travelling with her husband in connection with Commonwealth communications.

The site selected for Neebing Yard was about eighty feet higher than the level of the elevators adjacent to Lake Superior and the soil was sandy loam, well drained; so it was practicable to commence grading 1st of May, 1922.

As time permitted, I built a little log house at a beautiful location, shaded in summer and sheltered from winter winds by jackpine and spruce woods, overlooking the Kaministiquia River and beyond to Mt. McKay, through large front windows. The interior was varnished throughout, also we had electric light to furnish a very comfortable abode. Lena, Babs and John arrived in June.

There were no very deep cuts nor high embankments to be graded for the yard, but the extensive area caused the quantities to be great, with the fills predominating. To excavate the cuts, I hired a battery of fresnos, four horses and a skinner to each, and

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[26]Major K. E. Money, formerly adjutant 144th Bn. C.E.F., fell upon hard times following demobilization. He expected to secure an administrative post in Europe, but this did not materialize. Then the Major had to accept a mediocre job with the C.N.R. The accountancy at Neebing was a lift up, but when it was completed there was no position available other than roadmaster's clerk in Winnipeg Terminal; however he retained the manners of his earlier life to the end.

Photos 65 & 66. Our log home overlooking the Kaministikwia River towards Mount McKay, during construction of Neebing Terminal 1922/24, the first hump yard on the C.N.R.

a competent foreman; they were very efficient working in the sandy soil and short hauls. Mr. Wass was agreeably surprised as he had not been accustomed to working with horses - common in the West. Fresnos with horse power were the forerunner of the diesel powered scrapers.

To obtain the balance of the large quantity of fill, a steam shovel was cut into a side hill of gravel and sand at Slate River. The train haul to Neebing was six miles. This was a very satisfactory operation. The shovel operator, Ernie Gysel, was quick, so 150 or more cars were loaded daily, under the supervision of George Blacklock, a roadmaster temporarily assigned to Neebing as general foreman. George was of the old school - he was road 'master' no question about that and he was a highly respected, hearty Scot.

Steve, the tracklaying foreman, was also first-class, particularly on the hundreds of switches to be precisely placed in the long ladder tracks. The foreman on ballasting was a good producer too, but he was such an ornery old devil, it was difficult to supply him with labour; the rate was 30¢ an hour.

Homer Currie had a good organization on the buildings, with a general foreman from Moncton. Mr. Wass was a tireless administrator of the whole project and welded an agreeable team to achieve rapid progress.

In June 1923, I was surprised to receive a cable from Major Silcox, employed in West Africa, offering me a position as locating engineer under quite favourable conditions, excepting climate. I was tempted, as far horizons have always attracted me. When I went to Winnipeg to discuss the situation, however, I happened to meet Dr. Washington and he advised me against going so far from my family. I heeded his advice, little knowing what would develop within three weeks.[27]

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[27] Amalgamzation of G.T.P. and C.N. brought about two candidates for some senior positions. L. E. Silcox and E. M. M. Hill had similar qualifications for the top post in reconnaissance and location for the Western Region Canadian National. This was solved, in 1922, by Silcox accepting an offer from General Stewart to join his organization in West Africa, engaged in the development of a port at Accra and railway construction to the hinterland. Major Silcox had a distinguished career in both West and East Africa until retiring to his home in Wales. When Mr. Burns retired, Mr. Hill succeeded him as Engineer of Construction and, in 1939, he was appointed Chief Engineer, Western Region when Mr. Dixon moved from Winnipeg to Montreal to be System Chief Engineer. Mr. Hill died within one year, age 58; a grievous loss to all.

On July 1st, Mr. Wass was moved to Toronto to plan yard extensions and facilities there and I was appointed Terminal Engineer at Neebing, rate $300.00 a month. The double track and yard were opened for operation, as scheduled, to handle the Fall grain rush, an annual concentration of traffic which gave many dispatchers a headache. I continued in charge until the following spring. Up to 2000 cars a day could be switched, via the hump, to the terminal elevators.

We, the family, had two very happy years in our log home. Babs and John had lots of outdoor fun summer and winter. Once I tried to negotiate the steep cutbank down to the river on skis and hit a stump, nearly breaking my neck; the children chorused, "Do it again, Dad". Babs commenced school, in a red brick school house nearby, where social dances were also held. Lena undertook to drive our car. As we were only seven miles from the centre of the Twin Cities, we had no lack of visitors and on most Sundays during the summer had lively picnics at one or another of the beautiful grounds about Lake Superior and inland to Kakabeka Falls. In winter Lena, with the children, took two trips to visit her sisters at Toronto. On returning from one, Babs rushed up the platform to me, all excited, to say, "Mommy has her hair cut!" I was not too pleased to lose Lena's beautiful long hair, but one has to submit to feminine fashion.

Bedford Hill Grade Revision

Of the two routes from Winnipeg to the Head of the Lakes, most of the grain traffic was carried on the south line - the former Canadian Northern main line. Tonnage rating on the Sprague Subdivision was restricted by the ruling gradient at Bedford Hill, between Marchand and Woodridge. This was especially adverse during the Fall grain rush. A revision was surveyed to eliminate this handicap.

Mid-May 1924, I was moved to this project to undertake the construction. The principal feature was a long deep cutting, to be excavated by steam shovel and the material to be hauled by train to raise the sag in an embankment near Marchand. Some light grading at the east end of the revision was let by contract. All was scheduled to be completed by September when the grain rush usually commenced.

A Port Arthur Division B. & B. gang built a temporary frame house for me. My family arrived in the last week of May, following a visit to Toronto. We met at Winnipeg and, after a night at the Fort Garry, drove to the new home site. It was a beautiful Sunday and the leaves were breaking out. The road was reasonably good to Marchand but then there were several miles of corduroy to cross muskeg. There was a redeeming feature, however, a profusion of wild orchids bursting into bloom. The Ford rattled along without mishap, to arrive for supper at our new abode in a nice grove of jack-pine.

The job progressed well, with a good shovel crew, train crews and telegraph operators working in co-operation. The tracklaying foreman was somewhat of a character, with a favourite expression, "We must cut the mustard", which he did and the grain rush commenced with trains of the increased tonnage, as designed, early in September. [28]

The life-blood of the Prairies was the grain traffic. Railway management took its pulse by careful analysis of crop estimates; budgets were approved or cut relatively. Our dispatchers called periodically to agents, in their respective territories, for reports over the railway telephone lines. Listening in, I overheard the nearby agent at Woodridge, a Canadian of French origin, cut in and say, "I 'ave a very fine crop - jackpine an' blueberry".

We moved into Winnipeg and leased a suite in the Eugene Apartments, corner Grosvenor and Lilac. Babs enrolled as a day pupil in St. Mary's Academy.

Rosebud Creek Diversions

The former Canadian Northern between Drumheller and Calgary runs through the valley of Rosebud Creek, eroded deeply below the general elevation of the plateau thereabouts. This waterway meanders in great oxbows from side to side of the valley floor. In order to locate the railway without excessive curvature, the

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[28] It was five years from the time Major Graham Bell kindly gave me a letter of introduction to the Western Region Vice-President that I met Mr. A. E. Warren; he and Mr. H. A. Dixon passed through during an inspection to Port Arthur.

engineer had to cross and re-cross the Rosebud many times with timber bridges, vulnerable during heavy run-offs, which amassed flotsam causing wash-outs and closing the line to traffic for periods which became unacceptable.

To remedy this condition, a number of creek diversions were surveyed, each to eliminate two bridges. Some of these diversions necessitated heavy cuttings to be excavated with steam shovels. Contracts were awarded to W. Tomlinson Sr. and I was sent to supervise the work for about two months, until returning to Winnipeg for Christmas 1924.

It was an interesting job, in pleasant surroundings abounding in upland game birds, especially Hungarian partridges. I put up in the hotel at Rosedale. There was a B & B gang set off in a side track. One wet afternoon the men were unable to work and passed the time in the beer parlor, accompanied by their cook, a woman, who amazed all by her capacity, said to be two dozen bottles.

The Peace River Outlet

From about the opening of the twentieth century, reports circulated extoling a vast territory of potentially rich agricultural land, lush with grass and peavine, two hundred and fifty miles north-westerly of Edmonton and beyond, across the border into British Columbia. Settlers treked in until World War I retarded the movement, but it was subsequently resumed in a large scale, even though handicapped by lack of transportation - roads and railways - which precipitated cries for a "Peace River Outlet", a railway to the Pacific ports.

Reference chapter 6, the Canadian Northern surveyed a proposed location north-westerly from Whitecourt to Grande Prairie and the Grand Trunk Pacific ran a preliminary northerly from Edson during 1912. Both projects were shelved. In 1915, the E.D. & B.C.[29] constructed from Edmonton towards Grande Prairie and Peace River, but demand for a western 'outlet' persisted.

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[29] Edmonton, Dunvegan and British Columbia Railway, presently the Northern Alberta Railways.

Post War Railway Developments, 1919-1926

Several routes were studied - Peace, Pine and Monkman passes, westerly to the Pacific and one southerly to the C.N.R. main line in the vicinity of Hinton. Mr. Hill, of C.N., personally carried out most of the field reconnaissance during the years 1923 through to 1928. The committee responsible submitted a comprehensive report to the conclusion that the potential traffic, at the time, would not generate sufficient revenue to justify construction.

Of the four possible routes, Mr. Hill favoured an 'outlet' from the Grande Prairie country, southerly to the Canadian National main line in the vicinity of Hinton. His initial reconnaissance was from near Entrance, thence northerly to the Smoky River coal field and on to Grande Prairie; he did not recommend this because of the ruling gradient which would be required, also the topographical and soil conditions between the Smoky River and Grande Prairie. He was of the opinion that development of the coal fields should be considered apart from the 'outlet'. With this criterion, Mr. Hill reconnoitred an alternative route from Obed northerly via Sturgeon Lake to Aggie on the E.D. & B.C. and funds were approved to survey a preliminary location.

Location Obed to Aggie, Alberta

New Year 1925, two survey parties were assigned to run a preliminary line and project a location between the C.N. main line, near Obed, and the E.D. & B.C. at Aggie, twenty miles south of the divisional point, McLennan. A. J. Sill was assigned to work on the south end and I on the north.

This was my opportunity to be accepted into the elite, the attainment to which I had been aspiring. Mr. Dixon gave almost an entire day from his demanding duties to impress on me the responsibility of locating engineers, in that their judgment has such profound effect on the viability of the respective railways. He brought out notes, saved from his years in the field, to emphasize particular features. I indeed appreciated such helpful kindness.

When preparing to leave town, I had a shock. My wife became ill. Dr. Meindl diagnosed congestion of the lungs and advised that Lena should go to a sanatorium or have intensive care at home. She preferred to have a nurse live with her. Babs became a boarder at St. Mary's Academy and John visited his Aunt Carrie (Cameron) at Grand Marais. It was a worry to leave, but one had to bring in the bacon!

The party was a strong one, with Herb Roblin transitman, Bill Chandler in charge of supply and transport and Fred Moran, cook; in all, twenty-one men and four teams entrained at Edmonton for High Prairie, the closest station to Aggie. Our plan was to move to the south end of our section, near Sturgeon Lake, and work northerly before spring break-up.

I delegated organizing the party and moving in to Herb and Bill; then engaged a local Indian, Adam Big Charles, with team and sleigh, and set out ahead to reconnoitre. Adam soon showed his ability. His wife, a first-class camp-fire cook, accompanied us. The country was heavily timbered, mostly poplar (aspen), with no habitation along the way so the trail was seldom travelled. Our progress was very slow as much windfall had to be cut clear.

At nightfall we bivouacked. Adam attended to his team very carefully, unusual for an Indian. I made a clearing in the snow and started a fire and the girl lost no time commencing to cook. While this was progressing, I set up a wind-break and cut more wood. Snow had to be melted for cooking and also for watering the two horses. At bedtime we settled down together on a mattress of spruce boughs, snug as could be.[30]

Our destination was Waller's homestead at Sturgeon Lake. After noon lunch on the day we expected to arrive, Mrs. Big Charles brought out a small kit of cosmetics and applied them liberally, transforming a wholesome Indian girl into a poor imitation of her white sisters; as Kipling wrote, "The colonel's lady and Maggie O'Grady are sisters under the skin".

It was Sunday evening when we arrived. Mr. Waller showed the Indians to his bunk-house and invited me into his commodious log home. In such isolation, it was amazing. There were valuable rugs and Mrs. Waller was playing a grand piano. The three children were standing by, singing - a joyous and hospitable family circle.

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[30]Adam Big Charles was a renowned hunter. During the flu' epidemic of 1919, he left his wife and children in his main cabin while he made a circuit of his trap line. When he returned he found them all dead and frozen. His present wife was much younger, as yet without a family; she asked me, "Have you any kids?" I replied, "Yes, two nice children", and was flabbergasted to hear, "Adam no good".

Photo 67. Winter 1924/25, location survey Aggie to Sturgeon Lake, Alta. -- a section of the proposed line for an outlet from Peace River & Grande Prairie recommended by M. Hill.

Photo 68. H.B.C. Post at Sturgeon Lake; this area has become prosperous due to good land, oil and gas.

Photo 69. Indian family at Sturgeon Lake.

Next morning I was loaned a saddle-horse to visit Sturgeon Lake settlement, It comprised the Hudson Bay and Revion Freres trading posts and the Indian band they catered to. The country was more open than to the north, so it was easy to ride through. I discovered the Canadian Northern survey line of 1912-13, a few miles south of the Lake, which was to be my point of commencement. A section of the C.N. line south of Sturgeon Lake was to be co-ordinated with the line now to be surveyed. Sill would connect with it from the south.

On the third evening, Herb and Bill arrived with the party. They camped overnight close to Waller's yard and stabled the teams in the barn. The young son came into the house and said to his father, "There's a man out there (Bill Chandler), just like you, telling everyone what to do and doing nothing himself". The following day we moved on, set up camp near Sturgeon Lake and commenced work on the line.

When departing from Waller's, I had to settle for the accommodation provided. This was an interesting exercise. The Waller business was organized into divisions; the son looked after the barn, so I had to pay him for stabling; the two girls tended the chicken and were paid for eggs purchased; Mrs. Waller accepted remuneration for my board; and, the 'lord of the manor' took the price of some oat sheaves (25¢ for two) and rent for the saddle-horse. This was a practical method to interest the children in work and to value money.[31]

While in the vicinity of Sturgeon Lake an amusing case came up for trial. An Indian woman was charged for bootlegging home-brew. Revion Freres' manager was the magistrate, the court was in the room behind the store, an Alberta Provincial Police constable prosecuted and Mr. Waller defended. Waller was quite an orator but the evidence was firm, so the magistrate had no option but to impose a fine - the minimum. Afterwards the principals discussed affairs and had a little refreshment (maybe the exhibit), when suddenly the young constable, all 'spit and polish',sprang to attention and proclaimed, "Order in the court, the court is closed, God Save the King", which he had overlooked - a theme for a comic opera!

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[31]The Waller children were very bright; it was a picture to see them galloping their ponies and their colourful clothes in contrast to the background of snow. Their education did not suffer as both father and mother were highly cultured persons and capable teachers.

The terrain we traversed was typical of Northern Alberta, having deep ravines and a scarcity of water. There was only one river crossing, the Little Smoky. At several camps it was necessary to melt snow for water to cook with and to water horses. This required hours of thawing over open fires and until horses became accustomed to it, they refused the smoke tainted water.

Fred, our cook, took this in his stride. He baked excellent bread in a tent, without a failure, even when outside temperatures dropped to minus fifty degrees. The secret was his pail of sourdough which he protected from frost on moving days by wrapping it in his blankets. The hairs that accumulated in the pail appeared to improve the potency. Fred was an early riser but he had difficulty shaking his cookee from the blankets. Through the clear frosty air, Fred could be heard shouting, "Roll out you little bastard", then a meek reply, "Now Fred, you know I am not a bastard".

Snowfalls were frequent and it laid deep upon the ground. It was impracticable to walk without snowshoes; we would rotate the slugging breaking trail. On reconnaissance, my principal function, I would take with me Joe Marion, a husky young Canadian of French origin, to take turns breaking trail. One day we climbed to the top of a prominent hill to view the surrounding land. After contemplating it, Joe said, "Awful, awful country; no peoples, no peoples!"

Herb Roblin was a first-rate transitman, making good daily progress with running line and Sandy Bremner, draftsman, kept the maps and profiles up-to-date. Bill Chandler ensured we were never short of supplies. One evening in High Prairie, Bill ran into Burn's meat salesman and questioned the price being charged for beef. Bill had heard an extra gang on the track was being supplied for less. The salesman replied, "If you, too, want old bulls, I can supply them". Bill let well enough alone. It was a happy three months, with first-class personnel, equipment and transport. We tied into the E.D. & B.C. track near Aggie during spring break-up and moved into Edmonton.

I wrote to Mr. Waller thanking him for his hospitality. He replied, in part, "If you return to this country on your own, we will be pleased to have you as our guest, or if you are with the C.N.R., as a paying proposition". He was a very knowledgeable and handsome gentleman from Holland, connected with the consular service prior to being commissioned in the Camerons at Winnipeg. Mrs. Waller was a daughter of a prominent businessman and she was a talented pianist.

They, Mr. & Mrs. Waller, agreed that following the war they would start afresh anywhere the husband wished. He decided to file on a homestead and soldier's grant, together 320 acres, at Sturgeon Lake. They had many amusing anecdotes about building their log home and breaking land - all new experiences. Mrs. Waller described trading her husband's dress suit to an Indian who thought the tails were superfluous, so she promptly snipped them off and hemmed the ends.

After reporting to Mr. Burns at Winnipeg and he had studied the results of our winter's survey, he briefly summarized to me, "The Aggie to Obed route would provide the most direct 'outlet' from the Peace, with a minimum length of construction, 201 miles, favourable costs and ruling gradient, 0.50 percent compensated. However, public opinion is strong for a westerly 'outlet' through the Rockies". No action was taken until after World War II, then the Pacific Great Eastern completed its line from Squamish to Prince George and constructed beyond, through the Pine Pass, to connect with the Northern Alberta Lines at Fort St. John and Dawson Creek. So, after forty years, the people of the Peace have a westerly "outlet", but it is a circuitous route, with restrictive gradients, to Vancouver. Mr. Burns made a reconnaissance of the Pine Pass in 1905 for Canadian Northern.

The Sturgeon Lake district has been developed into high grade agricultural land, also oil and gas wells are in production there, centred around nearby Valleyfield. What a transformation from the "awful, awful country" contemplated by Joe Marion.

During the review of reports on the Peace 'outlet' I enjoyed two weeks in Mr. Burns' office and at home, very happy that my wife had made a good fight towards recovery.

Bengough to Willowbunch and Turtleford to Rabbit Lake

The Canadian Northern had planned to build from Maryfield, between Brandon and Regina, westerly through southern Saskatchewan, but stopped for the time being at Bengough. Now, the end of April 1925, I was dispatched with a party to survey an extension to Willowbunch. There was one major obstacle - the valley of the Big Muddy - which some local persons predicted would be impractical to construct across. I examined this carefully but discovered no insurmountable difficulties. As the route was through open country, the location was staked within a month, using a truck and a Ford car for transport.

A contract for construction was awarded without delay and I was assigned to supervise, with two resident engineers to assist. At the same time, I was given responsibility for construction of a line in northern Saskatchewan, from Turtleford to Rabbit Lake, with two resident engineers there. This necessitated driving over dirt roads from the south to the north of the province and return, at least once and, at times, twice each month; not too bad if there was no rain. One trip from Willowbunch took the best part of a week slithering on the gumbo surface. This cussed material would plug solidly between the spokes of the wheels and between them and the fenders to obstruct further movement until the clinging mess was cleared away.

Willowbunch was a very pleasant town on the floor of a wide and deep valley. There were a few poplars and willows growing in the coulees eroded in the slopes.[32] The population was predominantly French and a magnificent Roman Catholic church faced the main street. On the other hand, Bengough was a rough town, the Canadian terminal for booze runners during prohibition; the border into the U.S.A. could be crossed with speedy cars almost anywhere.

I rented rooms in a private house at Willowbunch and made my headquarters there. My family joined me for the summer. I was on the road a lot but Helena soon made friends, especially with a nurse and young doctor at the local hospital and had a good time. Babs and John enjoyed it too and commenced to learn French from playing with the local children.

The contractors put a strong force on the Bengough-Willowbunch job to complete it by freeze-up. The Turtleford-Rabbit Lake project was larger and of a different character, being through wooded country with more precipitation, so it had to be carried over to the following year.

During the fall migration ducks were very plentiful about the Big Muddy. The best bag I have ever had, from just two shots, was at a nearby field. John, nearing six, was with me. We spotted a large flock settle to feed, then crawled up and, as the birds took flight, fired both barrels almost simultaneously. John was so

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[32] Sitting Bull camped in the shelter of this favourable wintering ground after the Custer massacre.

excited chasing winged birds. We picked up twelve beautiful green headed mallards and drove into Willowbunch, proud as 'Punch'. The following Saturday we enjoyed a delicious dinner of grain fed ducks, so plump their breasts were bursting.

The final measurements for payments to the contractors were completed by December and we returned to Winnipeg.

Spruce Lake to Frenchman Butte and Completion to Rabbit Lake

The Canadian Northern main line between North Battleford and Edmonton was located, in general, twenty-five or so miles south of, and parallel with, the North Saskatchewan River, an excellent agricultural area; and C.N. had long range plans for a line north of, and parallel to, the river. This would have provided adequate service but the Canadian Pacific squeezed in from Lloydminster to Edmonton, cutting off traffic from both south and north of the river from C.N.

Canadian Northern had already constructed north of the North Saskatchewan River, easterly from Edmonton to Elk Point, forty miles west of the provincial border. On the first of January 1926 I was instructed to locate a line westerly from Spruce Lake, seventy-five miles north of North Battleford, to Frenchman Butte in preparation for construction.

Mr. Hill and I made a reconnaissance through this very beautiful country, cut by deep coulees of tributaries flowing to the North Saskatchewan River; the timber cover was mostly poplar. We stayed one night with a farmer who had goats in preference to cows and fed us goat. I do not recommend it in comparison with beef. After we decided upon the general route, I brought in a party and surveyed the location by spring break-up. A contract for construction was awarded to Fred Mannix Sr., a reliable old-timer.

During this construction season, I had four experienced resident engineers with me, Len Chapman and Jack Garratt west of Spruce Lake and Jim Philipps and Ross Wilkinson between Turtleford and Rabbit Lake. Ross set up camp at Medstead, fifty miles by trail northerly of North Battleford, where we went for mail and supplies. I pitched my tents adjacent to Ross' and one cook served us all. As soon as the weather became favourable, Lena and our children joined me. There was a combined farm, store and post office close by, so they had good company. Ross married later in the summer and brought his bride to camp.

Jim Philipps would bring his monthly reports personally to me at Medstead; I think he liked to have a chat with Lena. For that matter, everyone enjoyed her company. Jim was known as "Gloomy Gus". At heart he was far from gloomy. He objected to drinking from a bottle, so, to be certain that his principle would not cause him to pass up a drink, he always had a tumbler in his car. One of his slogans was, "Never praise the cook". This he did not do, for although his cook this summer was not bad, he was a sissy-type from Montreal, of whom Jim would say, "The S.O.B. should never have been born".

In August I received a wire to meet Mr. Dixon and Mr. Gzowski at North Battleford, to drive them over the proposed route for a connection easterly from Medstead to Shellbrook, to provide a through line between Turtleford and Prince Albert. I always looked forward to a summons to attend these two high ranking engineers and thoughtful gentlemen. If they were critical of work, it was constructive; one never failed to learn from them. They were also interested in the well being of their subordinates and families.

It was a bright sunny day; the bush trails were dry. At noon we spread out the bountiful lunch the business car steward had prepared - cold roast chicken with trimmings and appropriate beverages - onto a spotless linen cloth. As we were enjoying this, an emancipated homesteader passed by in a rickety wagon drawn by a team of sway-backed horses; Mr. Gzowski observed, "I'll bet the old fellow is thinking, my taxes are going towards providing those damned plutocrats with luxuries".

The day's drive enabled the two Chiefs[33] to make a favourable appreciation of the potential of the proposed line, Medstead to Shellbrook. When I returned them to their business car at North Battleford, they invited me to stay overnight. After dinner and the work had been reviewed, Mr. Gzowski proved an entertaining raconteur; he would enact the outstanding points of his anecdotes.

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[33]Mr. C. S. Gzowski was Chief Engineer of Construction for the Canadian National Railway system; Mr. H. A. Dixon was Chief Engineer of the Operating Department, Western Region and Mr. Burns was Engineer of Construction, reporting to Mr. Dixon.

One, about a Quebec habitant, required most of an evening. This 'local' was being dogged by an evil devil, doing one mean thing after another. The finale came when the unlucky fellow went into the bush to relieve himself, dropped his pants and squatted with his jewels dangling down contemplating his misfortunes; the devil sneaked up behind, with a pair of shears, and snipped off the poor old man's treasures!

Mr. Gzowski usually made an extended annual inspection of projects proposed and those under construction through the West; he would be accompanied by either Mr. Dixon or Mr. Burns.

The contractor on construction of the easterly section of the Turtleford-Medstead line failed so badly to progress that he had to be declared in default and other forces were placed on the job. They were Bill Dutton and Jim Millar jointly; Dutton, however, predominated and grading was completed as called for, by freeze-up.

Detailed measurements and calculations of the various items comprised in the contract had then to be summarized for final payment before the engineers closed their camps. On completion, I left for Winnipeg. On arrival at the Union Station, I immediately went to Mr. Burns' office and was summoned into Mr. Dixon's office. Sitting opposite the Chief were Don Grant, a sub-contractor of Dutton, Jim Millar and some others. After inviting me to join the group, Mr. Dixon said to me, "These gentlemen are of the opinion that you have not classified their work with a sufficient percentage of loose rock". I replied, "Unless someone has talked out of turn, they do not know the quantity of loose rock and other items included in the statement I have just submitted to Mr. Burns for his approval and processing for payment". That concluded the little meeting and the visitors trooped out.[34]

Later in the morning, Mr. Dutton's office manager, Dan McLeod, called on Mr. Burns to request a summary of the respective items, as approved. Within one hour Mr. Burns came from his private office to inform me that Mr. Dutton wished to speak to me on the phone. When I picked up the receiver, I was gratified to hear Mr. Dutton say, "I have your figures, Charles; you have given us a very fair settlement".[35]

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[34] Grading was classified solid rock, loose rock, hard-pan and earth. On this contract solid rock was nearly nil, loose rock was the next highest price.

[35] Mr. Dutton would fight over a nickel he thought was coming to him, but he was a 'big' man and recognized fairness; his word was a bond, letters were unnecessary in dealing with him.

12. HUDSON BAY RAILWAY REVIVED, 1926

Prior Doldrums

When construction was suspended in 1918, the bridge crossing the Nelson River at Kettle Rapids, Mile 332, was completed and track was laid for three miles northerly. Beyond, grading was finished through to Port Nelson, Mile 428. The railway was in fairly good condition for operation between The Pas and Kettle Rapids, at speeds up to thirty miles per hour.

The contract for construction with J. D. MacArthur was terminated and his general manager, Mr. R. Hazelwood, "Whistling Dick", was engaged by the Department of Railways and Canals to take charge, with headquarters at The Pas. Arrangements were made with the Canadian National to operate such trains as required.

Funds available for maintenance were so restricted that the northerly 100 miles of track and grade quickly deteriorated and reverted 'back to the jungle'. No trains operated beyond Pikwitonei, Mile 214. Even so, the track became so rough that cars uncoupled and had to be chained together. Each journey was an adventure, without relation to time; the train crew developed expertise in re-railing cars.

Beyond Pikwitonei, Luke Clemons was the acknowledged "King of the North". He was given a permit to operate track motor cars and push cars with mail and supplies through to his trading post at Mile 328, near Gillam of today. This journey was the supreme adventure. Some embankment subsided to such an extent that rails and ties swung above in the manner of a suspension bridge. At these points, Luke would take a run at it and hope for the best. Also, Luke and his associates introduced "poling" push cars as though they were canoes.[36]

Luke also ran mail down the Nelson River from the Kettle to the Port, by canoe during summer and dogs in winter, as a service to a small caretaker party, with Sanford Hazelwood (Dick's brother) in charge, to protect the department's property after work there was closed down. Mail for the Hudson Bay Company Indians at York Factory was handled by this route too.

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[36] When McMillan Bros. completed their contract for grading, etc., they had a surplus of supplies on hand. Luke Clemons took them over and the buildings of the Mile 328 cache, where he opened a trading post. He was well liked by the Indians and fluent in Cree, so built up a very successful business.

Western agriculturists and others, however, interested in the development of a port by the "Bay" to shorten the distance and reduce costs for exports and imports between the Prairies and Europe, continued to lobby for completion of this project. They received strong support from the Hon. Charles Dunning, Minister of Transport and a member from Saskatchewan in the, then, Liberal Government at Ottawa.

Rehabilitation

Overruling eastern opposition, it was decided to rehabilitate this controversial railway to Kettle Rapids and to institute a study of the comparative merits of the harbours at Nelson and at Churchill for development of a port. In 1926 the Canadian National Railways accepted a contract, on a cost plus basis, from the Department. The Western Region Construction Department got work underway immediately, with Major J. G. MacLachlan, District Engineer, in charge, succeeding Mr. R. Hazelwood, deceased.[37]

After eight years of doldrums, pressure was now on for speed. Major MacLachlan and Mr. Graham were faced with a gigantic task. Although the first 214 miles northerly of The Pas were operational at restricted speeds, there was much to be done to build it up to even a fairly good condition. Drainage ditches which had been so labouriously excavated by hand, at some points through permafrost, had been obstructed by the slopes sloughing in and accumulation of debris. Also beaver building dams caused water to be impounded at the bases of embankments with their consequent settlement and sags in the track surface. Many culverts had failed and pile and trestle bridges had been heaved by frost. Pipe-lines had to be laid and water tanks erected. Coal docks, engine-houses, machine shops, stations and section-houses had to be built. Many of the poles supporting the telegraph wires were heaved and fallen over and had to be re-erected. Thousands of track ties were rotten and the entire distance required ballasting.

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[37]The Construction Department, under direction of Superintendent R. W. Graham (Roger's father), carried out tracklaying and ballasting; built bridges, excepting superstructures of steel, and buildings on all new lines. It was a very efficient organization, similar to a large contracting company. Many of the men had grown up in the Ottawa Valley and were especially adept in the erection of timber bridges, to rapidly bring lines into initial operation.

The Construction Department had the experienced supervisory personnel on which to expand its forces to undertake the diverse works. Claude Johnston was appointed assistant engineer to the Major and supervised the engineering parties required to layout the jobs. George Brown, as assistant superintendent, directed the specialized general foremen: Tom Rafter on bridges, Pete Campbell on buildings, Scot Devenny on water supplies, Michael John O'Shea and Moonlight Anderson on tracklaying and ballasting, and their respective foremen and assistants.

Between Mile 214 and Mile 332, in addition to subsidence, fires had destroyed fills graded with peat.[38] To restore these embankments millions of cubic yards of train-filling were required. This, together with the quantity of granular materials to be excavated from pits, then to be hauled long distances and placed, necessitated a heavy dispatch of work trains and maintenance of motive power and cars. Bill Woodcock, locomotive foreman and master mechanic, kept it all in service. Train crews worked almost around the clock and earned substantial monthly cheques, ironically at times amounting to more than that of their superior officer.

Leadership and zeal throughout the organization produced a reasonably operational condition of the track to Kettle Rapids, Mile 332, within one year, 1926, in position for extension to proceed in the new year. However, train-filling and ballasting, together with bridge and building works, had to be continued between The Pas and Kettle Rapids for many years before this section could be maintained and operated by what might be termed normal forces.

Extensive surveys were carried out under extremely difficult conditions - wading muskegs and fighting mosquitoes and blackflies - to plan for re-opening and improving the drainage. In order to obtain fall essential to design practical gradients, not less than 0.10 percent, it was frequently necessary to run off-take ditches several miles from the right-of-way. Excavation by the former hand labour was replaced with drag-lines. To traverse the unstable muskegs, the machines had to be worked from mobile platforms of timber. Even so, great care and good judgment had to be exercised by the operators to maintain the machines in up-right positions and prevent bogging down.

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[38] Fires in peat will continue to burn under covering of snow and are very difficult to extinguish. Embankments of peat were finally consolidated by imposing granular materials.

Hudson Bay Railway Revived, 1926

Re-evaluation of the Two Harbours: Nelson and Churchill

Prior to suspension in 1918, millions had been expended by the Department in an endeavour to surmount the natural physical difficulties encountered to develop a port at Nelson. Mr. D. W. MacLachlan, Engineer in charge, was confronted with a major dilemma; after exhausting studies and preliminary works, it was decided to construct an artificial island in the mouth of the river and connect it to the north bank with a steel bridge (a series of through-truss spans), in all approximately 2000 feet long. This was accomplished and it stands in place today - over fifty years later.

A valuable suction dredge was towed in through the Hudson Strait. Shortly after, a terrific autumn equinoctial gale struck and wrecked this all-essential machine before it was put into effective operation. The railway roadbed was graded, ready for tracklaying, except for a bridge to cross the Weir River, into Nelson.

Whether all the effort related above should be abandoned and the railway terminal port developed at Churchill, involving maintenance and operation of eighty additional miles of railway, presented making a monumental decision, with far-reaching political implications. Two major engineering studies were required without delay, first with respect to the railway and, secondly, the harbours.

Railway Feasibility Study

This study was assigned to the Canadian National Construction Department, of which Mr. C. S. Gzowski was System Chief Engineer. He instructed a preliminary location survey be run on the ground as rapidly as practicable, under direction of the Western Region Chief Engineer, Mr. H. A. Dixon, and his Engineer of Construction, Mr. Wm. Burns, delegated Mr. E. M. M. Hill, Reconnaissance Engineer, to undertake this important study.

Knowledge of the Hudson Bay Lowlands, between the Nelson and Churchill Rivers, was limited to casual observations by the few travellers who had crossed them during the winter when the surface was solidly frozen - the most practical season to do so. Some ventured the opinion that it would be impracticable to construct and maintain a railway over the vast areas of muskeg. Available maps were very sketchy.

Murray Hill, with Bill Chandler to supervise transport, made arrangements to set up a survey party. Not familiar with the conditions to be encountered, they placed reliance in horses and sleighs, relatively heavy camp equipment and supplies. At Freeze-up, 1926, they moved in by rail to the end of steel just north of Kettle Rapids, thence over the grade and across the Limestone River to Amery, Mile 356 - almost directly south of Churchill - which appeared to be the logical point to divert from the line graded to Nelson. This was then confirmed on the ground.

It was understood that, on conclusion of construction of the lines westerly and easterly from the vicinity of Turtleford, I, with a strong survey party, would join Murray at Mile 356 to run a preliminary location northerly, under his general direction as he reconnoitred ahead. Bill Chandler would supervise the transport to furnish supplies and move camps.

At the beginning of the New Year, 1927, I left Winnipeg for the North. On arrival at The Pas there was disconcerting advice that both Murray Hill and Bill Chandler were seriously ill at Amery. Major MacLachlan assigned his business car to me to proceed to the end of steel. It was obvious that Murray and Bill should go to hospital at The Pas. They were moved into the business car and left without delay. Murray instructed me to take over.

Doctors at the hospital diagnosed both patients were suffering from pneumonia and it would be some time before they would recover sufficiently to return to the field. Mr. Burns wired that I was to take over as reconnaissance engineer with a rate of $350.00 a month and he sent R. H. Wilkinson to relieve me of the location party.

Luke Clemons was visiting the sub-post he had opened at Amery, so I asked him to send to Split Lake for two Indians with dog trains for my personal transport. They, Mathias, a man about my own age, 34, and a boy of 17, arrived quickly with two toboggans and twelve strong husky dogs. After Ross Wilkinson and I selected a commencement point for the preliminary location line, we were away. Ross would have to depend on the horses and sleighs, however, he had first-class personnel,including an excellent cook - so important to morale.

The Limestone River flows southerly in a well defined valley eroded through comparatively high country to the Nelson River. The land about the Limestone is composed of a good percentage of granular materials and is well timbered with jack-pine, poplar, spruce and some birch - all in all, quite pleasant. The face of this plateau runs almost due north and slopes steeply to form the western edge of the Lowlands, a vast expanse of muskeg and thousands of shallow lakes with immature drainage, over a width of some sixty miles to the western shore-line of Hudson Bay and a length of one hundred and fifty miles northerly between the Nelson River and the mouth of the Churchill River.

Although the slope of the plateau has a northerly course and, at first, appeared to offer a favourable location for the proposed railway to Churchill, close examination disclosed it to be an irregular formation, broken by the Weir, Owl and Silcox Rivers and many smaller water-courses flowing easterly into Hudson Bay. Also, this side-hill petered out within a distance of seventy miles, beyond which the Deer River was found to flow northerly into the Churchill River with a northerly course to the Bay.[39]

To locate a railway along the face of this side-hill would have necessitated considerable curvature and additional distance, also, rise and fall, in comparison with a more direct route through the Lowlands. Furthermore, many springs and seepages were observed exuding from the slopes which would cause glaciation and difficult maintenance of culverts.

Therefore I decided to strike due north through the inhospitable "Land of Little Sticks"; (the Indians' apt description of the Lowlands), where only stunted spruce are scattered about, much of which had been blackened by fires. To the north it merged into the "Barrens", a truly desolate region. Winter is by far the more favourable season to travel in it. During summer a pedestrian is constantly wet to the knees and often to the waist; and plagued by mosquitoes and blackflies day and night.[40]

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[39] The writer discovered the Silcox River, naming it for his esteemed friend and former Chief.

[40] J. L. Charles, "Permafrost Aspects of the Hudson Bay Railroad", American Society of Civil Engineers, Soil Mechanics and Foundation Division Journal, LXXXV (December, 1959).

Mathias and his teenage companion proved to be excellent dog skinners and willing workers. We soon organized into an efficient little team. Our equipment consisted of one 8' x 10' tent, light tin stove with telescope pipes, cooking utensils, bed-rolls, axes and one rifle, etc., total weight about 150 lbs. Basic rations - flour, baking powder, oatmeal, bacon, beans, butter, raisins, jam, salt, tea, sugar and powdered milk - amounted to from three to four pounds per man day. Dog food was one pound cornmeal and one-half pound tallow each per day, plus a little meat and fish when we might pick off a caribou and a few ptarmigan. So, allowing for the weight of the toboggans and on the basis that a team of six dogs could haul 350 lbs. under average conditions, we could reconnoitre for up to ten days without having to replenish. This was done periodically when we returned to the location party's camp to give Ross Wilkinson directions with respect to the route to follow.

Toboggans were made up of two oak boards turned up at the prow, lashed together with rawhide thongs into a width of 14" and length of 10', so it was essential that loads should be very compact within an overall canvas cover, to be lashed on without any overhang which might hamper smooth hauling. Flexibility was important too. A rigidly constructed toboggan would soon be wrecked sliding over rough hummocky surfaces across country.

The two Indians from Split Lake were accustomed to well wooded country, so the "Land of Little Sticks" was entirely strange to them. It was up to me to break trail, running ahead of the toboggans and, as necessary, referring to a pocket compass. The prevailing winds were from the north-west scoring a distinct striation on the surface of the hard packed snow, which was helpful in maintaining direction during cloudy days. However, Mathias missed nothing as he followed, driving his dogs. He remembered every noticeable landmark, not only looking ahead, but, also he would frequently glance back to observe with respect to travel in the opposite direction. Light trail snowshoes were all that was required to prevent breaking through the hardened snow surface, so running was exhilarating even when temperatures dropped to minus 50 degrees, unless the wind was strong. Usually when the mercury registered so low, the atmosphere was calm. Wind Chill factors had not yet been devised to cause a deterrent psychological effect.

We each did our respective parts. Before retiring to our eiderdown sleeping bags, we ensured there was dry kindling and wood handy for lighting the fire in the morning, taking turn-about to first emerge from the comfortable warmth. The little stove heated up quickly and we soon had breakfast prepared, but no one touched food until hands and face had been washed. This meant lathering with a piece of soap in the snow, to remove the cobwebs of sleep. The Indians were scrupulously clean, as taught by the Reverend Fox at Split Lake, 1910-15.

With breakfast over and utensils washed, camp was broken and toboggans loaded; we were on our way before daylight. At mid-morning I would stop at a convenient spot. By the time the dogs caught up, I would have a fire going to "boil the kettle" and have a snack of bannock. It is wonderful how hot tea will buck one up against the cold. Our noon meal was more substantial - bacon, beans, bannock and tea. Then we would have another snack in the afternoon to generate energy for the last lap of the day and to set up camp; by then it would be dark. The skinners bedded down their dogs, each on a little mat of spruce boughs, staked at least the length of the two dog chains apart to prevent scrapping and stealing food. In the meantime, I would fix up camp and have a fire going to commence supper.

After supper Mathias and Jim cooked cornmeal and tallow in a large kettle over an open fire for the dogs, their one meal of the day. It was important that this was cooked thoroughly in order to maintain the dogs' health and, of course, it had to be cooled before dishing it out individually. Then there would be a dog chorus and howls - so ended a long day. Sometimes the boys might play a tune or two on their harmonicas, which I enjoyed too, before rolling in. If a storm sprang up during the night, the dogs would be completely buried in the snow, but quite comfortable, with a small breathing hole above each nose.

On Sundays we would take time to clean up and air our sleeping bags. I had a light caribou robe to lay under my eiderdown; it was very effective insulation against the cold from below. Mathias and Jim had been well schooled in the Anglican Church; they never missed taking their prayer books from their dunnage to read some passages and sing some hymns. Sundays gave me an opportunity to review my notes and sketches. I do not consider it advisable to travel and work a normal full day on Sunday, unless there is an emergency.

The natural senses of Indians, in general, are more acute than those of white men. One night in our small tent I awoke to see Mathias sitting half up, resting on one elbow and listening intently. In answer to my query, as to the reason, Mathias replied, "Two man come". I heard nothing for some time, until the tent flap was drawn aside and two men entered bearing a telegram from Winnipeg for me. This had appeared to the operator at the end of steel to be important, so he dispatched it with two men, walking on the toboggan trail wearing mocassins, almost silently. The amazing thing was, it was "two man" not one, nor three.

Some week-ends I would backtrack to Ross Wilkinson's camp to advise him about the route ahead and to confer with him about the progress and results of his survey to date, also to replenish supplies. In order to ascertain the depth of muskeg, holes were chopped with hand axes through the permafrost to a depth of up to 18 feet to glacial till.

We ranged considerable distances, east and west of our main route northerly, to become familiar with the terrain and to prospect for deposits of granular materials which would be required for train-fill and ballast. It was afternoon during the first week of March that we came upon a freshly vacated polar bear den and tracks of the female and two little cubs heading towards the Bay. We followed them for a while and noticed that, at times, the cubs' tracks were missing, when they would have a ride on their mother's back. Female polar bears travel inland during the Fall, up to fifty miles or so, to den-up and give birth to one or two cubs, then emerge during early March to travel back to the frozen sea to seek food, principally seal.

That night we did not bother to pitch our tent, but just made a shelter of brush by an open fire. Mathias, when preparing to 'hit the sack' worked the action of his rifle to ensure the magazine was loaded. I kidded him and he said, "All right, you laugh; lots of Indians dead in their blankets", then he made motions of biting, saying, "White bear cut the Indian". During the night the dogs did awaken us and Mathias loosened his leader, a reliable animal, but there was no excitement.

A few days later, the "Little Sticks" petered out; ahead were the "Barrens" - without a stick in sight. I waited for the dogs to catch up. Mathias looked about, shook his head and exclaimed, "No sticks, no sticks". I made no remark and proceeded to break

trail, not too sure that the boys would follow. When far enough ahead, however, so they would not see me look back, I did so and saw them coming along. That night we camped by a creek with just sufficient willows for a fire to cook supper and breakfast.

The next day we crossed the "Barrens" and reached the bank of the Churchill River where there was good timber for a comfortable camp. Some mornings, on rising, I would ask Mathias for a weather forecast. He would look seriously at the heavens and say, "Maybe wind" - a pretty safe bet!

There was a fresh toboggan track on the Churchill so we followed it to the west bank and across Mosquito Point, to arrive at the Hudson Bay Company post as darkness was closing in. When I knocked and the manager opened the door, he was somewhat surprised to see a white man and two Indians with two dog teams. We were the first strangers to call since the "Nascopie" had departed in August, during her annual trip to supply the posts around the Bay.

I was invited into the living quarters and the Indians were directed to the bunk-house. The establishment consisted of the manager, Mr. Barstow, a widower, his young son, George, the mate of the H.B. schooner and a Norwegian captain who was conducting a survey of the local fishing possibilities for a project sponsored by the "Company" to assist the Indians thereabout. After the atmosphere thawed, with the aid of a little refreshment, I was extended every hospitality during my stay of three days. I reconnoitred around the harbour to consider where the railway terminal might best be located.

At the time, all habitation was on the west shore of the harbour, where Jens Munk had wintered in 1619. Apart from the Hudson Bay Company buildings, there was the Anglican Mission Church and rectory and a few Indians. I called on the Rector and his wife who came from England with no experience of living in the environment they found themselves confronted with at Churchill. In fact, they had travelled to Canada to immediately board the "Nascopie" without viewing much more than our Atlantic Sea-board. Without knowledge, they had had to prepare and furnish a list of supplies sufficient for one year, until the next annual call of the supply ship. They had not included fuel as they did not realize none was available at their destination. They had no option but to purchase a limited quantity of coal from the Nascopie at a high price per ton.

The situation at the Mission was complicated by the lady being pregnant when she arrived; her husband had to act as midwife. It was sad; the baby did not survive for long the harsh conditions it was brought into. The church buildings of corrugated iron were in contrast to the comfortable log buildings, sheeted with lumber, of the Company. However, there was a cheerful atmosphere about the Mission and it was administering to the spiritual well-being of the parish, consisting mostly of nomadic Chipewyans and a few Eskimos. Churchill is the meeting point between Indians and their northern neighbours. On Sunday, Mr. Barstow and I attended the morning service. It was interesting to observe how well versed the Indians appeared to be.

I was invited into the rectory to partake of the limited hospitality which could be offered. The stock of butter, for example, had been used up for some time. As I always made a practice of carrying an ample supply of necessities, I was able to leave a few items when returning to the south.

The Norwegian skipper wintering at the post was a very interesting "old salt". During the evenings he would weave fish nets, recounting experiences running the blockade during the Russian-Japanese war and of travelling through Siberia, then little known to outsiders. This winter season was the climax of the cycle for white fox; they were very plentiful so the white men at the Post supplemented their incomes by trapping. The skipper went out one morning to circuit his trap-line. As he did not return at supper-time the others became uneasy, but, quite late, the captain returned on his skis, packing eight white foxes - a heavy load.

Hospitality at the H.B.C. was enjoyable. I had no time to linger, however, even though the morning I planned to leave did not appear to be promising. We had only gone a short distance when the full force of a blizzard struck. I could barely discern the dogs at my heels, so it appeared advisable to return to the Post rather than look for trouble by heading out into the Barrens when it was unnecessary to do so. I was right up against the buildings when they became visible. Mr. Barstow was relieved that we had returned. Later he told me that some years earlier, when the Mounties had a detachment at Churchill, their surgeon had responded to an urgent call to an Indian camp and had gone out in a blizzard, not to return; his frozen body was not found until spring.

Photo 70. Reconnaissance for H.B.R. route from Amery to Churchill, winter 1926/27. Rough tidal ice at the entrance to the harbour.

Photo 71. March 1927 all habitation - H.B.C. Post and Anglican Mission - was on the west shore of the harbour.

Photo 72. Hunters return with polar bears; frozen, they were chopped up for dog feed. Prices were too low to compensate for the labour of thawing and skinning.

The day following, the storm had abated and it was pleasant, but our northward trail was obliterated. After reviewing some features of the terrain along the way, we arrived at Wilkinson's camp by the Deer River. There we learned of an amusing incident. One of the horses had died and some of the crew were at a loss to understand why the old horse of the team was being maintained under the inclement conditions. The cook, with a good sense of humour, assured them the reason for keeping the old animal was for iron rations during the return journey to the end of steel.

At midday the heat from the sun was thawing the snow, so it was time to be on our way to "Town", with our maps and records of the winter's survey. I submitted these to Mr. Burns, stating that I had discovered no conditions which, in my opinion, would cause construction and maintenance of a railway across the Hudson Bay Lowlands to Churchill to be impracticable. This was accepted.

I was happy to find Mr. Hill busy in the office and to be able to discuss the results of our winter's survey with him; also, to hear that Bill Chandler had recuperated.

Comparative Survey of Nelson and Churchill Harbours

On receipt of the report with respect to the proposal to divert the railway from Nelson to Churchill, the Federal Government called in the eminent English engineer, Mr. Frederick Palmer,[41] an acknowledged authority on port development, to conduct an entirely independent comparative survey of these two harbours.

The Minister of Railways and Departmental officials accompanied Mr. Palmer to Amery where the party was met by Luke Clemons who conducted it by canoes to Nelson. After viewing conditions there, the party proceeded by ship to Churchill.

Concluding evaluation of the respective features which would affect construction and maintenance, also shipping entering and departing from the two possible ports, Mr. Palmer reported, "A study of the above Table of Comparison cannot but lead to the conclusion that Churchill is in every respect save one - the extra cost and annual charges imposed for all time by 87 additional miles of railway - in every other respect, incomparably superior to Nelson. In fact, so marked were the advantages, as shown on the drawing and charts and by careful examination of all the data available, that it was felt there must be some other and overwhelming reason for the selection of Nelson.

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[41] Mr. Palmer was subsequently created a Knight, "Sir Frederick".

Hudson Bay Railway Revived, 1926

"It is recommended that the works commenced at Port Nelson should not be proceeded with, and that Churchill should be selected for the Hudson Bay port."

Whereupon, the Government announced that the terminus of the Hudson Bay Railway would be at Churchill and issued instructions that construction of the railway and port was to be expedited; "speed to be the essence". This was pronounced in August, 1927.

Near the Deer River approaching Churchill one foggy morning, I was surprised to hear the drone of aircraft engines close overhead. Looking up I discerned two light planes, quite low, flying towards Churchill. I learned later they were transporting drilling equipment, prior to spring break-up, for investigation of the harbour floor. This was the first winter season flight to Churchill. The pilots were, Capt. F. J. Stevenson, D.F.C., subsequently killed in a crash at The Pas, for whom Winnipeg's International Airport is named; and Balchen, who became Colonel, U.S. Air Force, of fame in polar flights with Admiral Byrd.

Review of the Railway Route During Summer

Canadian National planned construction of a branch line northeasterly from Eldersley, Saskatchewan, into the highly productive Carrot River Valley, which would become tributary to the Port of Churchill. So, before the winter survey organization was disbanded, we located this line. I then returned to supervise construction of lines in the Turtleford territory.

Mr. Burns wired me, about mid August, to report to him at Winnipeg as quickly as possible. He told me it had been requested that I traverse, under summer conditions, the route I had reconnoitred the previous winter from Amery towards Churchill.

As freeze-up was not far off, time was limited. I sent for Benny Sabourin to meet me at Amery and wired a request to Luke Clemons to engage two Indians, as packers, to accompany us. This little party of four set out on foot, packing the bare essentials of gear and supplies, early in September, slushing through the muskegs, seldom dry below the knees and frequently wet to the waist. However, there was one favourable circumstance - the nights were cool enough to curtail the ardour of the mosquitoes and blackflies. Frost set in before we returned. It was an ideal season for this assignment.

My companions were excellent fellows, Benny in particular. Nothing clouded his cheery outlook. Once when we were sinking to our knees at each step, Benny remarked, "I wish there were some of the city slickers here who insist on having thick plush carpets in their offices, they would have them". On another occasion there was a heavy morning fog. It was difficult to maintain direction and progress was slow, so I suggested we might as well "boil the kettle". When the water bubbled and I threw in a handful of tea, Benny pulled a mickey of brandy from his pack and dumped it into the pot saying, "I brought this along, just in case"; the fog soon cleared and all was well.

We reached the Deer River, fifty miles south of Churchill, beyond which drainage improved. We about-turned and retraced the terrain to Amery before temperatures dropped seriously. I wired a confirming report to Mr. Burns. We had been walking daily for almost one month; the toes of my boots were worn right through, although they were new and of the best quality at the start. On reaching The Pas, I called on the store where I had purchased these boots and pointed out their condition to the proprietor, Mr. Bunting, whom I knew well. He replaced them free of charge but my conscience pricked, for no boot would have withstood such a grind unscathed, constantly soaked and being pulled up through the fibrous muskeg at every step. Mr. Bunting laughed and assured me that he would return the worn boots to the factory, without personal loss.

The Railway Location from Amery to Churchill

It was early in October, 1927, that Mr. Burns instructed me to organize to take to the field with all possible haste and that Ross Wilkinson would be assigned as locating engineer under my general direction. I could have no more co-operative partner.

No one questioned my decision to employ dogs entirely for transport. Ten toboggans, each to be hauled by six dogs, would be required. In accordance with railway procedure, I requisitioned sixty dogs and quickly had a phone call from the purchasing agent requesting me to drop into his office. He informed me that this was the first request he had received to purchase dogs, so I had better do it myself. This I agreed to, if $1500.00 would be credited to my bank account, to be accounted for in due course.

Hudson Bay Railway Revived, 1926

Walking by the Empire Hotel to lunch, I was elated to see Luke Clemons. After the usual greetings, I nailed Luke to assist me in buying my dogs. It was agreed that I would pick him up on Sunday morning and we would drive to Selkirk and communities northerly to Gimli, where Luke had many good friends. Wherever we called we were pressed to partake of cold roast duck and a drink; it was a very enjoyable fall day. Many husky dogs were shown to us for selection and I agreed to pick up those we chose in a few days. It was near midnight when I returned Luke to his hotel and I arrived home full of duck and good cheer.

Crates were built at the Fort Rouge B. & B. shop for shipping the dogs. I took a truck to gather the huskies up and was well satisfied with their strong build and appearance. It was quite a performance to crate sixty powerful dogs and transport them, all howling, to the City, particularly from the north end along Main Street to the Union Station, then load them aboard a baggage car which was assigned for movement on the passenger train to The Pas and beyond. Some of these huskies appeared ferocious, biting at the wooden bars, so I was left to my own devices to handle my friends enroute with food and water; none however attempted to find out how I might taste. The majority of these animals were bred from stock of the Icelandic fishermen so had been well treated and they responded accordingly. The Hudson Bay Company purchased sleigh dogs from the same source for the Shackleton polar expeditions.

Selection and packaging of supplies for up to twenty-five men and sixty dogs for a period of six months, required much careful planning to be compact and of minimum weight without sacrificing quality, for all was to be transported on toboggans with a maximum width of fourteen inches. Tents were all of light sail silk. Cooking utensils all nested into light plywood boxes. Meats were cut into steaks and roasts, wrapped individually and frozen, so that they could be easily separated when required. Each month's supply was identical, identified by the respective letter; all boxes and sacks were numbered and the contents listed so there would be no confusion on the trail when the cook needed a certain article. The logistics were of such importance, that Fred Eaton was appointed assistant draftsman with actual duties of quartermaster. Fred was a tall rangy fellow, a good runner and personally drove a team of dogs, he did an excellent job of having the right supplies when and where required. Fred chummed with a tall Indian, Jimmie Westasicut, and at evening time they cooked together for their dogs.

As we would be in the field at Christmas, the festive ingredients - turkeys, plum puddings and all, including a gallon crock of 150 P.O. rum - were prepared in Winnipeg, to be easily cooked in camp to celebrate this day of days.

At The Pas, I met Dick Halcrow who had recently returned from four years of trading with the Inland Eskimos north of Nueltin Lake - Farley Mowat's "People of the Deer". Dick was at a loose end and accepted an offer of employment as a dog skinner. I assigned him six beautifully matched young huskies, resembling German Shepherds; he soon had them obediently trained. Dick accompanied me on personal reconnaissance throughout the winter. Further to being an excellent dog handler, he had been educated at St. John's College School and was an interesting partner by the camp-fire.

Luke Clemons met me at Amery with a wonderful present - a moose-hide parka, trimmed with red fox, a pair of deer-skin gauntlet mitts, trimmed with polar bear, and three pairs of moccasins, all expertly tailored by his wife.

Pandemonium reigned for a day or two until the dogs and skinners became accustomed to one another, then all smoothed out into an efficient organization. The instrumentmen and others of Ross Wilkinson's party were experienced professionals, most of whom had been associated for some years. Camp was set up about five miles northerly and the project was underway. I spent more time in Ross's camp than during the previous winter to assist by selecting camp sites ahead and in the forwarding of supplies but, too, Dick and I were engaged in reconnoitring on our own, to increase our general knowledge of the terrain.

In addition to the extensive gravel deposit just north of the Limestone River, we discovered three other good sources of train fill and ballast materials. One, six miles east of Mile 460, was especially interesting; walrus skulls and tusks were uncovered indicating that the bed of Hudson Bay is gradually raising during the centuries.

We celebrated Christmas, 1927, camped on the fringe of the taiga - "Little Sticks". Dinner was delicious, with the gallon of O.P. rum providing everyone two stiff drinks. In the evening I was delighted to hear the voice of my wife and two young children over our radio receiver, and Mrs. Wilkinson spoke to Ross. This survey party was the first of the C.N.R. to be equipped with radio,

but it was restricted to one way. This event was given wide publicity in the press; the Gazette of Montreal reported, in part, "John was very shy. Talking to Daddy when he could not see him was an experience altogether too new. But Daddy, hundreds of miles away, was listening in his tent and John at last summoned up enough courage to speak into the microphone. 'Hello Daddy', he said, 'have you seen Santa Claus up there? Merry Christmas. I hope you are well. Good-bye.' Babs was not so diffident and she spoke as nicely as a Christmas card. 'Don't let the polar bears get you', said Mrs. Charles".

Christmas was the only day we took entirely off. New Year's passed without special observance. Although the fellows did not go out to run line on Sundays, there was work to be done on maps and notes for at least part of the day. The cook and cookee worked seven days weekly, with no breaks. It requires an exceptional type of man to carry on throughout a long northern winter. It is not to be wondered at that cooks, in general, indulge in a real binge when they return to town. Fred Moran was cook; he had lengthy experience and never failed with baking good bread in a tent when the temperature outside was down to fifty below and, at times, as low as sixty. His secret was sour-dough which he tended as though it was a baby. On moving days he protected it in his bedroll; hairs and things accumulated in the pot but Fred's sour-dough raised delicious bread.

Frequently moving camp with dogs, but not being able to ride, took a toll on Fred, now in advanced years. It became necessary, much to our regret, to relieve him. Like all first-class men, however, Fred had tutored Joe Cameron, his cookee, to take over without a hitch. The bullcook, Walter Cochrane, a Metis from near Selkirk, too, was a remarkable man. He kept the cook tent supplied with firewood, cutting the 'little sticks' and packing them in on his back; also, he assisted in melting snow for water - in all, a man-size job which few could have performed. Walter now rests in old St. Clement's Churchyard.[42]

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[42]Walter, as a young man, was one of the J. W. Tyrrell's Geological Survey Party of 1893 which crossed from Lake Athabasca to Baker Lake and Chesterfield Inlet, thence southerly by the shore of Hudson Bay to Churchill, York Factory and to Fort Garry. They were the first white men to enter this sub-arctic territory since Samuel Hearne, 1769/72. Accounts of northern expeditions are to be found in Samuel Hearne, A Journey from Prince of Wales's Fort in Hudson's Bay to the Northern Ocean undertaken for the Discovery of Coppermines, a North West Passage, et cetera in the Years 1769-1772

Photo 75. The "Barrens"

Photo 74. The 'Land of Little Sticks'

Photo 73. Survey to stake the H.B.R. location to Churchill winter 1927/28. One camp site, in a good stand of spruce by Lost Moose Creek, was very comfortable. Ben Saborin.

Photo 78. Eskimo women and children

Photo 76. Transport was 10 toboggans, with six dog power, hauling about 350 lbs. each.

Photo 77. "Boil the kettle" for hot oxo or tea.

Other key personnel were Jack Benedick, transitman, Menzie Farquahar, levelman, Harold Nunn, topographer and Jim Walker, draftsman, an expert craftsman working in a tent where it was necessary to keep the drawing ink close by the stove to prevent it freezing and, in the evenings, plotting maps and profiles by the light of a Coleman lantern in order that they would be up-to-date daily. The chainmen, rodmen and axemen were all top rate pros too.

Apart from Sundays and Christmas Day, there was only one occasion this party did not run line. On moving days, breakfast time 5:00k, all would be packed and tents dropped before daylight, then the engineering personnel would walk out to the line and extend it, and the dog skinners and cooking staff moved camp, it would be a long day with supper later than usual.

On the occasion referred to, the morning was clear but the stars twinkled over brightly, indicating atmospheric disturbance. Camp was being loaded on the toboggans and Ross, with his crew, left to run line. After the outfit was on its way, I took a circuit to see how the line was progressing, then proceeded towards the new camp site. Very shortly a blizzard struck with such force that it became difficult to see and I was surprised to feel a dog at my heels. Looking around, I found Fred Eaton and his team, so we continued together to the Deer River, the new camp site. Two toboggans had arrived but there was no word of the others who had become separated in the storm. This was a worry but before long they all came in and later Ross and his men arrived too. Fortunately, the river bank provided some shelter for our tents. This blizzard continued for two days, so strongly that fine snow was blown through the fabric of the tents and settled on our bedrolls. When conditions abated, observations of the "Barrens" above the river bank showed the general terrain to have been swept clean of snow into the hollows, to the extent that on the following move, hauling conditions on almost bare tundra, were very heavy for the dogs.

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[42](London: A. Strahan and T. Cadell, 1795). Reprint editions are available, A Journey to the Northern Ocean, ed. by Richard Glover (Toronto: Macmillan, 1958), and also A Journey from Prince of Wales's Fort in Hudson's Bay, to the Northern Ocean... (Edmonton: Hurtig, 1971). See also James Williams Tyrrell, Across The Sub-Arctics of Canada; A Journey of 3,200 Miles by Canoe and Snowshoe Through the Hudson Bay Region. Reprint edition, Across the Sub-Arctic of Canada (Toronto: Coles, 1973).

In the Deer River there was an interesting phenomenon. When chopping through the ice to obtain water, stones and fair size boulders were seen imbedded in the ice, somewhat similar to raisins in a rice pudding. When the river is frozen to the bottom, ice grips rocks on the river bed, then subsequent flow raises the ice, together with the boulders and stones. This may be repeated several times during one winter and, with spring break-up, the rocks are carried downstream and deposited wherever the ice may thaw. This is miniature of the action of a glacier. A traveller, when walking through an area strewn with boulders, enquired of his guide the reason for the condition. The guide explained that the boulders had been transported during a glacial age. The client then asked, "Where are the glaciers now?" The guide, becoming impatient, replied, "They have gone back for more boulders!"

Our final camp site was in the scattered stunted spruce, all leaning towards the south-east, as caused by the prevailing winds, just south of the ancient rock formation at the sea-ward entrance to Churchill Harbour. After the cook tent had been pitched, some of the fellows, not familiar with the salt water, chopped a toboggan load of ice and hauled it in to the cook. They soon found this water to be unpotable and had to fall back on the slower process of melting snow.

A topographical survey was made of the east shore of the harbour and of the adjacent area where wharves, railway yard and facilities would be constructed. During this period all the party personnel had an opportunity to visit the Hudson's Bay Company post, the Anglican Mission and the ruins of Fort Prince of Wales, on the west shore. I was able to renew my friendship with the Company Manager, Mr. Barstow, and with the Missionary and his good lady.

Eskimos, the "Inuit" as they prefer to be termed, arrived with the "Winter Packet" - mail from the northern posts - to be transferred to the Chipewyan Indians who would carry it along the coast to York Factory where Crees would relay it southerly for delivery to Hudson Bay House in Winnipeg.

There is a very noticeable difference in the sociology of Eskimos and Indians, particularly with respect to methods of travel. The former, in the open on wind packed snow, hitch each individual dog on a rawhide trace directly to the sleigh, perhaps

Photos 79 & 80. Churchill March 1928, the 'Winter Packet' (mail) arrived, relayed by Eskimo, from northern posts for furtherance south by Indians. Eskimo, in open territory, use a fan style hitch, to long sleds with mud runners which are re-surfaced daily, or more, with a thin layer of ice, by applying water with a piece of fur.

thirteen dogs in a fan shaped arrangement with the leader, on the longest trace, in the central position. Their sleighs are built of two fairly heavy wooden runners with a platform of cross slats lashed together with rawhide thongs. The runners are faced with a composition of mud, frozen on, in appearance resembling the ball of a railway rail. The frozen mud is smoothed and warm water is applied with a piece of polar bear hide, to form a nearly perfect running surface, far superior to any other. It is re-iced daily and during the spring break-up, frequent repairs may be necessary. However, it is a practical and ingenious vehicle for winter travel north of the taiga. Whereas, Indians are restricted to the use of toboggans hauled with about six dogs, hitched in tandem, for travel along trails broken in the snow through wooded country, except where advantage may be taken of frozen lakes and rivers.

Other diversities of character were, Indians took pride in speed of travel between specific posts, whereas Eskimos considered the weight their dogs could haul to be more important. Also, Eskimos were more self reliant. They were always at home in a snow house (igloo) wherever they stopped. While waiting at Churchill for the packet from the south, instead of occupying the company bunk-house, they would go out on the Bay, build their own shelter and hunt seal.

The Eskimo mail-men did, however, accept our invitation to camp for Sunday dinner of pork chops; they really tucked in.

By early in April 1928, the railway location had been mapped, designed and staked on the ground to Churchill. The party was then faced with the return journey, about 165 miles by trail to the end of steel at Amery. As it was much preferable to travel in small groups, it was decided that no more than five men, with two toboggans and twelve dogs, should travel together to facilitate bivouacing and cooking on an open fire, so all could be comfortable. Each small party was provided with rations for seven days. Surplus supplies were donated to the Anglican Mission at Churchill. They were gratefully received, as some basic items had been almost exhausted and the next shipment would not arrive, through Hudson Strait, before the end of July.

Dick Halcrow, Jim Walker, the draftsman, and I travelled together. The dogs were in excellent condition; the trail was good and the hours of daylight were lengthening. We made it through in four days, however, this was tough on Jim for he had worked in

the office tent, except on moving days and had not had the same opportunity to harden as Dick and I had, travelling frequently. Where the trail was particularly good, Dick was able to let Jim ride from time to time, but when Jim had to resume on foot his muscles became increasingly stiff, especially at the start of each day. The next best time for the trip was five days and all arrived within six days.

The outfit was then loaded aboard the train for The Pas and on to Winnipeg. I arranged for the sale of the dogs for an aggregate sum close to the cost price. On the train, of course, everyone relaxed, especially after visiting the liquor store during the stop at The Pas. Between there and Winnipeg there were many laughs. The cook related about bieng given an extra shot of rum to liven up the sauce for the Christmas pudding, but he drank it, substituting spice for the sauce and no one had detected his villainous deed; nevertheless, all were happy.

Jack Benedick, transitman, received a letter fron his fiancée containing an ultimatum, "find a new mode of livelihood or a new bride-to-be", so he said, "You birds can do as you wish but this is my last survey job". The railwaylost a first-class man to a girl's demand; I wondered what the future held for Jack - perhaps a humdrum life in a concrete jungle.

Ross Wilkinson, locating engineer, was a grand fellow with a good sense of humour and ability to inspire his men. During the winter Ross developed a severe case of hemorrhoids, so acute that, wherever Ross evacuated the snow was stained with blood, but Ross kept going without complaint. The first thing he had to do on reaching Winnipeg was to arrange for an operation.

Jim Walker, draftsman, produced maps and profiles of the highest order. As the survey proceeded and the railway was designed on the job, maps and profiles were forwarded progressively to Mr. Burns at Winnipeg. This permitted tenders for clearing, grading, culverts and timber bridges to be called for immediately.

Scotty Morris, Mr. Burns' office assistant engineer and an old friend of mine, said to me, "You know J.L., you are keenly interested in your vocation, you work hard and are ambitious, but all of the axemen and chainmen are not so dedicated, some of them think you are a son-of-a-bitch". Be that as it may, after a week or so in the office, I returned to construction in Northern Saskatchewan.

Hudson Bay Railway Revived, 1926

Construction - Amery to Churchill

Major J. G. MacLachlan, in charge of rehabilitation of the Hudson Bay Railway between The Pas and Amery, 356 miles, was assigned the responsibility to direct construction of the final section, 154 miles, of this line to Churchill.[43]

Resident engineers and their respective parties were moved in over the frozen terrain, to stake the various works to be undertaken, as designed in accordance with the location survey. In the meantime, a contract for grading, etc., had been awarded to Stewart & Cameron, of Winnipeg, who moved onto the job prior to the spring thaw, 1928. Grading in the normal manner, however, was restricted to the absolute minimum, only levelling the higher muskeg hummocks and excavating essential drainage ditches, in order to preserve the general condition of the permafrost throughout the "Lowlands". Wooden duck-walks, similar to those used on the Western Front during World War I, were laid along the right-of-way to facilitate pedestrian movement during the coming summer.

Timber bridges, required to cross the many water-ways flowing easterly over the northerly direction of the railway, were constructed in advance; piles were steamed into the frozen ground formation.

As the formation of the road-bed was designed to be predominantly embankment, it was planned to lay the skeleton track directly on the natural surface of moss, lichen and peat of various depths, above the basic glacial till, in a condition of permafrost which does not thaw annually to a depth of more than 12" to 18" except in some areas of dry granular materials where the thaw - active layer - may extend to several feet.

The large area of sand and gravel near the railway right-of-way, just north of the crossing of the Limestone River, was opened for a source of train-fill and ballast, convenient to the point of commencement of construction of the diversion of the railway from Nelson to Churchill. This permitted tracklaying to be resumed early in the summer of 1928, to be lifted immediately by train-filling as it advanced, until freeze-up.

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[43] The writer had a part in the basic planning for construction before he left in the spring of 1928, so was conversant with the methods employed and with the principals responsible for carrying them out. He did not have an opportunity, however, to return to the Hudson Bay Railway until September 1934.

Laying of skeleton track on the natural surface of the frozen tundra continued throughout the winter - the temperature was as low as 50 degrees below zero Fahrenheit - reaching Churchill on 29 March 1929.

Two very resourceful foremen were responsible for the day-to-day progress from the railhead - Andy Anderson known as "Moonlight" because of his aptitude for obtaining equipment and materials which were not rightfully his during hours of darkness to push his particular job ahead, 'come hell or high water'. It was said that during tracklaying of the Canadian Northern through the Thompson River valley, Andy was short of some necessities, so he crossed the river in a boat, by moonlight, to the Canadian Pacific to gather the items he urgently required.

Winds on the open tundra quickly caused snow-drifts on the skeleton track which had to be cleared by operation of snow-ploughs. Any small obstruction, such as a tuft of moss, to the wind-swept snow, would cause accumulation on the track. Before the spring thaw, there was a cut through the drifted snow some thirty miles long. During this period Andy was faced with having to turn a snow-plough without a wye or turntable. His ingenuity overcame this situation; Andy laid a spur track onto the ice of a slough which the wind had swept clear of snow. He ran the plough to the end of the spur, then cut the track in the rear and, by massive manpower, turned the plough through 180 degrees, re-connected the track to return it to the main track and resume operation southward.

This situation became so serious that, in May, a passenger train enroute to Churchill became stalled in the extensive snow-drift. Relief supplies had to be sent with dog teams to the stranded passengers.

In preparation for train-filling and ballasting, spur tracks were laid to the three deposits of sand and gravel discovered during the location survey. The most important was an esker six miles easterly of Mile 467.

Steam shovels, hart cars, ploughs, fuels, explosives and supplies, as necessary, were placed in each potential ballast pit prior of the spring thaw. Then the granular materials were excavated and loaded into hart cars to be distributed along the spurs to the main line, to lift the skeleton track onto the distributed

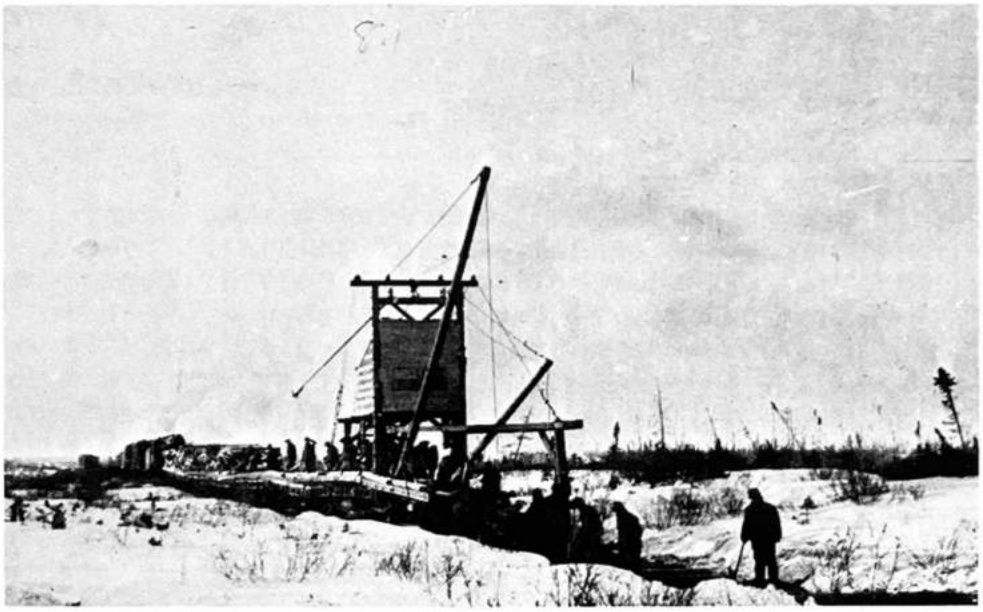

Photo 81. Winter 1928/29 track was laid on the natural surface of the tundra, to preserve the condition of permafrost; this has been carefully retained.

Photo 82. Skeleton track was laid into Churchill, 29 March 1929; this shows it across the "Barrens" at spring break-up when train-filling and hacking was commenced to build embankment and subsequently ballast the new railway. Note telegraph line on tripods.

filling by jacking, layer upon layer, until embankments were formed four or five feet in height in relation to the grade line designed by the engineers during the location surveys. As this procedure raised the elevation of each spur, it was continued from the junctions with the main line southerly and northerly, to be finally connected with train-filling and ballasting from each pit, throughout the open season of 1929 and of 1930, thus completing the basic rail line.

The other outstanding track foreman was Michael John O'Shea, a husky, jovial Irishman with the faculty of promoting morale in the gangs under his jurisdiction, which was of the utmost importance working in the severe climatic conditions - cold and wind during winter and mosquitoes and blackflies in the summer.

Because of the permafrost, the normal method of telegraph line construction was impracticable. The pole butts would, within a year or so, be heaved from the ground and fall over together with the wires. To counter this, tripods, each of three cedar poles, were set on the surface instead of single poles. It was simple and effective with respect to construction and maintenance; tripods withstood the actions of frost and wind, also rotting of the butts has been minimal. The completed telegraph line, on tripods, parallel to the track attracted considerable comment. Most other items of construction were affected by permafrost, such as water supplies and foundations of dwellings for maintenance forces, but the effects were not so visible as on the telegraph line.

Mr. George Kydd, of Ottawa, was appointed engineer in charge of the development of Churchill Harbour to a port. This included dredging, establishing aids to navigation, constructing wharves, docks, freight sheds and a grain elevator, together with relative facilities. He was a capable engineer with the personal characteristics which enabled him to deal with unusual problems on this project, far from the base of supplies and consultations.

The design of the port facilities was directed by Mr. D. W. MacLachlan, Ottawa, with C. D. Howe & Co., Port Arthur, consultants. A contract for construction of the grain elevator, capacity 2,500,000 bushels, was awarded to Carter-Halls-Aldinger Co., Winnipeg. The first shipment of grain, 277,000 bushels, was loaded on the S.S. Farnsworth. She sailed for London on 18 September 1930, a distance of approximately 2,950 nautical miles, some 460 miles longer than from Halifax to Liverpool, but effecting a reduction in railway distance from the mid-prairie grain lands to the sea-board of 1650 statute miles, and an overall saving of 1150 miles to Europe.

Hudson Bay Railway Revived, 1926

The Federal Minister of Railways and Canals stated, "Beneath official figures of money, materials and railway construction, there is a colourful story of human endeavour in this vast project, commenced, carried on, and now almost completed, in the high hope that it will give the West a new and shorter trade avenue to the markets of Europe than any now existing. Whether the project will realize all the high hopes for it, is a matter the future alone can determine, but an uncontrovertible fact is that the Dominion Government is doing its full share and that the work of construction to date has been an Homeric undertaking in which the people of all Canada can take a justifiable pride".

13. COMPETITIVE BRANCH LINE CONSTRUCTION

Northern Saskatchewan

The northerly limit of grain production and mixed farming in western Saskatchewan is about the Beaver River, 110 miles north of the wholesale distribution centres of North Battleford and Prince Albert. Construction of branch lines, by both C.N. and C.P., through these pleasant rolling park lands was very active prior to the financial disaster which precipitated the "Hungry Thirties".

C.N. had pioneered this territory some twenty-five years earlier; it was rightfully C.N. country. C.P., however, now became keen to compete in this potential source of traffic and achieved its objective by obtaining running rights over certain C.N. lines and then building northerly to Meadow Lake. From Meadow Lake, C.P. had under consideration building westerly, by Cold Lake and Lac la Biche, to connect with the Northern Alberta Railways (joint C.N. and C.P.) at Lesser Slave Lake and building easterly, through Nipawin and Flin Flon, to The Pas, thus establishing a line through the north-lands, although partly joint with C.N., between the Peace River country and the Hudson Bay Railway, perhaps with a view to gain access by running rights to the Port of Churchill.

Fred Eaton, who had done such a good job as quarter-master on the location survey to Churchill, was promoted to be resident engineer on a section of construction between Medstead and Speers. He set up camp at Mullingar and I established my headquarters with him. Fred had an excellent cook, a widow, Mrs. Shipherd, a rather frugal person who sewed her intimate articles from used flour sacks. One day she became very annoyed, spotting one of the boys photographing her pants hanging on the wash line, showing "Red Roses" across the seat!

Leon Chapman was Fred's neighbouring resident engineer to the south. Leon was an old friend. He had been instrumentman on the first party I was on, between Tofield and Calgary. He was a first-class engineer but would go on the most horrible drunks; I could have cheerfully shot him on many occasions, but he was one man I considered justified to go on binges.

Leon was severely wounded during an early attempt to capture Vimy Ridge. When our force withdrew, Leon found himself alone in a crater and with much of one hip blown off, caused by the explosion of a bomb he was carrying which was detonated by being

struck by an enemy rifle bullet. He was in no man's land. Each time Leon tried to crawl back to his own line, the Germans opened fire; one of their potato mashers exploded nearby, drawing blood from his scalp. Leon said, "That's killed me", but pulled himself together with the thought, "If I can think I am dead, I can't be dead".

The German machine gunners facing Leon became amazed with his courage and motioned him to come to their line and held their fire. As it was Leon's only chance for life, he crawled to the German trench and was well tended by the front line men. When he was moved to the rear, however, he was very poorly treated. The only medical treatment he received was from a fellow prisoner of war, a Russian doctor. Rations were so meagre, that only parcels sent by the Red Cross kept starvation away.

The Russian prisoners did not receive anything from the Red Cross. Leon described watching the Russians picking through the garbage pails for scraps of anything which might give nourishment; and how he and other Britishers thought they would never stoop to scavenging, but, later, when the Red Cross parcels were not delivered, he too picked over the dumps. Prisoners were dying daily and had to be carried from the huts for burial. Leon said that although he was so weak he could barely lift one pound, he was forced to go through the motion of placing his hands under the bodies. After about a year, with his hip not healed and festering, Leon was medically examined and classified as physically useless. He was repatriated through Switzerland to England, to make a remarkable recovery, but he was so very deaf he was unable to participate in normal social functions.

This was the year, 1928, that construction from Turtleford, easterly to Medstead, thence south-easterly to Speers, was nearing completion. The right-of-way was through a very productive area, known as Keatly Ridge, where two of the original settlers - Mr. Keatly and Mr. Brevick - had developed prosperous holdings and, in the process, a bitter feud.

The line crossed five quarter sections of the Brevick property. One quarter was his homestead; it was a convenient location for a siding and station to be established. Before leaving the previous fall to survey the location of the H.B.R. to Churchill, I recommended that this station should be named Keatly. The following spring, 1928, during my first inspection of progress, I

drove into the Brevick yard, to be greeted with a burst of vituperation by Mr. Brevick. "You are the son-of-a-bitch, I'll never permit the name Jim Keatly on my land" and, after he cooled down, he said, "I have the money to assure this does not come about".

So, Brevick drove to Saskatoon to consult with his lawyer. It was discovered that CN right-of-way agent had overlooked the fact that the station site was on Brevick's homestead and that for the land transfer both Mr. and Mrs. Brevick's signatures should have been affixed. As Mrs. Brevick had not signed, the agreement was nullified until the name Keatly was eliminated.

This lead to some amusing incidents between supporters of Keatly and of Brevick, also C.N. It came to a head at a meeting in the local school-house. The railway representative became fed up after some hours of petty bickering. He sarcastically proposed "Why not name this station 'Peacedale'". All agreed and, subsequently, Peacedale was approved by the National Geographic Board. Some twenty-five years later, however, I picked up a copy of the Gazette and read the name Peacedale had officially changed to Keatly. Both of the principals of the argument had gone, beyond squabbles of little consequence.

During the summer I purchased a new car and drove to Leon Chapman's camp. I found him pretty high, so I suggested he might enjoy a ride in the new car and perhaps sober up. On reaching the main highway, I opened up. Leon, lolling beside me, said, "Ha! you can't scare old Leon" - he was so right!

Leon had a wealth of experience in his profession and in association with his fellows - in such contrast to the young engineer on the residency to the south, the only engineer I ever fired. Walking over this young man's section, I came on two old Swedes building a cedar box culvert. It was obvious that when completed the top of the culvert would be higher than the elevation of the railway roadway. I knew these Swedes well as first-class workmen and drew their attention to the situation, saying, "You know better than that". They replied, "Of course. When we read the markings on the stakes, we recognized there was an error and walked some miles to advise your engineer and request him to return with us to check his stakes. We were ignored and instructed to build this culvert as staked". I continued on to the engineer's camp and found him and his gang there. He, unabashed, admitted the Swedes had come to him, but he thought his stakes were correct

so did not go to check them. This, to me, was utter disregard for kindness, involving considerable personal inconvenience of two experienced tradesmen and showed a serious lack of responsibility.

As usual, when the school term closed for the long summer vacation, my wife and children joined me in camp at Mullingar, a very pleasant location with Meeting Lake a few miles away. There was good fishing and swimming at Meeting Lake. We had the use of a small sail boat and had many happy Sundays there.

One evening Helena was accompanying me over the job. We drove through Brevick's yard and he invited us to supper. During the repast, he made some derogatory remarks about Jews, but being Norwegian, Brevick was unable to pronounce J. Consequently, Helena misunderstood him to be talking about his ewes (sheep). Brevick became exasperated and thumped the table, exclaiming, "No, no, the damned ewes (Jews)".

With the commencement of fall and time for my wife and children to return to Winnipeg for school, Mr. N. B. Walton, General Superintendent of Transportation, wired me that there was a very serious epidemic of infantile paralysis in Winnipeg and advised against returning until the situation improved. We were grateful and the family remained together in camp until it appeared safe to return to Winnipeg. Notwithstanding our precaution, almost immediately our daughter, Babs, aged 11, became infected. Fortunately Dr. Meindl responded quickly when called, commencing treatment without delay and was successful in preventing lasting disability.

Construction of the branch line from Turtleford, easterly through Medstead and, thence, south-easterly to Speers, also the relative line from Spruce Lake westerly to Frenchman Butte, were completed by freeze-up. After the estimates for payment to the contractors were finalized, I reflected that I had not had a holiday for ten years and, as my mother's age was advancing, I would request leave for six weeks to take my family to England.

Vacation to Europe

It was early in December 1928 when we, my wife, Eira age 11 and John 9 years and I departed by Canadian National train for Toronto and on to New York, where we stayed for a couple of days

before embarking, via the Cunard Line, for Halifax and London. The passage northward was, as might be expected at this season, so rough that Eira became violently sea-sick. This was quite a worry, considering that she had not fully recovered her strength following the recent serious illness. I hesitated about whether we should continue our journey or disembark at Halifax and return to Winnipeg. Helena, with her characteristic fortitude, however, consulted the ship's physician and he consented to care for Eira. After a rough crossing of the North Atlantic the weather became pleasant between the Isles of Scilly, up the English Channel and the River Thames, to dock at Tilbury, London. By then Eira was enjoying her meals and in fine fettle from the bracing sea atmosphere. It was but a short, non-stop, train trip (the children were amazed at the rapid acceleration of the comparatively light British trains) to Brighton by the sea, where we had a very happy Christmas and New Year with my mother and my sister Doris, age 33.

A drive of about forty miles, through beautiful countryside, took us to visit at the home of my late grandmother, then occupied by my bachelor uncle, Harry J. Baker, and two spinster aunts, the elder Kate (Poulton) and the youngest of the three, Nell (Baker); grandmother had been married twice. They were one of the old established families of Frensham, a small village near Farnham, Surrey. The house, "Crosslanes", was situated high on the slope of a hill, with a vast view over vales and woodlands about the River Wey. There were ample rooms to accommodate a house party and extensive landscaped gardens, with the stable hidden from direct view.

All this revived memories of long summer holidays during my school years with Uncle Harry and Aunts, Kate and Nell. My grandmother suffered a stroke at the age of seventy and was bed-ridden, without speech, until her death at eighty-four. During those years her son and two daughters devoted their lives to the care of their mother.

Uncle Harry was a keen sportsman; always maintained a good saddle horse and was an excellent wing shot. Although Frensham was but thirty-five miles south-westerly from the City of London, it was then agricultural country. The growth of hops was a specialty. There were many kilns, fired with charcoal, for drying the hops, and where we younger fry would have parties baking potatoes. I had a natural love for field sports. Uncle Harry took me under his wing and we had many good shoots - pheasants, part-

ridges, hares and rabbits, also, during severe winters, ducks would come into Frensham Ponds. But now, 1928, this was almost just a memory. Many country homes had been built by businessmen who commuted to the city. Real estate had become very valuable.

This situation did not go unnoticed by my Uncle. Prior to retiring at an early age from the position of local surveyor, he was well informed about the desirable properties thereabouts. He sold "Crosslanes" and built another beautiful home, which he named "Stone Acres", where he and his sisters lived until their deaths. All are now at rest in the picturesque Frensham Parish Churchyard.

From Frensham we returned to the seaside to visit Aunt Sara (Coleman), Mother's eldest sister, at Bognor Regis, between Brighton and Portsmouth. Aunt Sara had recently lost her husband, Uncle Jesse, so was living alone in her comfortable bungalow facing the Channel. Only the shore road separated her garden from the beach. Lena stayed some time with Aunt Sara and assisted her with matters at the bank, etc. There were first-class private schools nearby, so Eira and John were enrolled for a term and did very well, although it did appear that they were not entirely in accord with the discipline, generally firmer than in Canadian schools.

Time passed all too quickly towards the date for my sailing back to Canada. Helena and I, however, squeezed in a delightful trip to Paris. We put up at a small hotel away from common tourist beats, yet convenient to points of interest. Uncle Harry had recommended it. There were so many historic structures and works of art and, of course, to attend the Opera House was a 'must'. Faust was being presented; the "Soldier's Chorus" was a favourite of mine and, apart from the spectacle on the stage, the display in the foyer during intermissions - by superbly gowned and jeweled ladies promenading - was dazzling.

We returned via Le Havre in order to visit the grave of Lena'a brother, Herb (Sgt. H. M. Hamilton, Canadian Field Artillery) who died of influenza on his way home in March 1919. This was a sad excursion but it was somewhat relieved by seeing how well the military cemeteries were being cared for.

After a few days with my mother and sister at Brighton, I left for Liverpool to embark on the R.M.S. Mauritania - the pride of the Cunard fleet and swiftest ship on the Atlantic at the time. In

due course I disembarked at New York. It was still morning when I had passed through the landing formalities and as the train for Toronto was not scheduled to leave until evening, I checked my baggage and walked from the dock amidst the hustle and jostle thereabouts. At noon I decided to enter a restaurant and had literally to elbow my way in. This did not give me a good impression of the water-front area of New York; I was relieved to get away from it. I have never enjoyed crowds of self-centered individuals.

It was a pleasure to board the train for Toronto and doubly so to have a walk in Toronto during the stop there for servicing enroute for Winnipeg. I had a grand feeling of being home in Canada, with a sense of security and orderliness of life, in comparison to the day before in New York.

Helena, Eira and John were not to return until June. On arrival in England they had been quickly embraced into the family and were invited to extend their visit beyond the time I was due back to work. Lena was a gracious and beautiful young woman. Uncle Harry was very proud to introduce 'his niece from Canada' to his friends and took her about in his car to visit the countryside in the beauty of spring and early summer. It would be difficult to surpass the southern counties in these seasons.

They, my uncle and Lena, enjoyed common interests in art and historic architecture. They visited the stately cathedrals at Canterbury, Winchester, Salisbury and Exeter, also many fine ancestral homes. Of course, before I left we had taken the children to London to see the common interests there, such as Westminster Abbey and the Houses of Parliament with Big Ben. We also went to Portsmouth to board Lord Nelson's flagship "Victory" and be shown the spot on the deck where he fell, mortally wounded by a bullet from a French sniper during the Battle of Trafalgar.

On arrival home, Helena related the delightful times she, Eira and John had enjoyed through a beautiful spring in Southern England; everyone had been so good to them. Uncle Harry gave her a parting gift of fine examples of silversmiths' craftsmanship. He had driven them from Frensham to Southampton and assisted them aboard ship for the journey home, having luncheon aboard together before sailing. They had become very attached.

They had a grand crossing of the Atlantic and were impressed with the beauty of dazzling icebergs when approaching Newfoundland. There had been parties and so on aboard. They travelled up the St. Lawrence River, with a call at ancient Quebec City, to disembark at Montreal. When having her baggage examined by a French Canadian Custom's officer, however, Lena said she became furious when it was hinted that her silver might enter duty free, if the custom's officer were given a largesse. This was just too much for Lena to accept on her native soil, but there was no way round.

A long train journey west, relieved by a few days each at Toronto and Winnipeg, brought the three travellers to Regina, where I met them and drove to camp on the bald-headed prairie. What a contrast from a gracious home in Surrey; but I was indeed happy that our little family was together again.

On returning home from wherever we may have been, Helena proclaimed Canada - east, west and north, too - to be tops! I wholeheartedly agree.

Southern Saskatchewan

While the Canadian Pacific was invading Canadian National's territory in Northern Saskatchewan, C.N. intruded into C.P. in the south of the province.

It was February, 1929, when I reported from vacation and was instructed to locate a branch line from Unity, on C.N. main line one hundred and ten miles west of Saskatoon, south-westerly for some eighty miles, crossing the C.P. near Macklin.

I left Winnipeg ahead of the party to reconnoitre the terrain and to arrange to hire trucks for transport. The train arrived about four o'clock in the afternoon, so I took a walk to select a turnoff point before going to the hotel. On the way back across the fields I met a young man carrying a suitcase of good quality leather. This appeared odd to me, so I spoke to him. After some hesitation, he answered my question, "What are you going to do?" with, "I am going to freeze to death", whereupon I replied, "That's a hell of a thing to do". Then the young man asked me to post a letter to his parents. It was near sunset and the temperature was dropping - no night to lay out under a

straw-stack - so I persuaded the despondent fellow to accompany me to town. During our walk he said that he had travelled by freights from town to town seeking employment, without a hope of success, as thousands of others were doing. He had been chased along by the local police and had, that afternoon, been told to get out of Unity. On reaching town, I called on the Chief of Police, a one man force, and remonstrated against the harshness of the situation. This resulted in the destitute young man being jailed overnight and put on a train west, no doubt to be greeted at the next stop in a similar manner.

It was but at the approach of the "Hungry Thirties". Conditions worsened.

This was an interesting location project. In the first mile out from Unity there is a wide coulee, eighty feet deep, which necessitated a major timber bridge. The country was mostly cultivated, however, of easy access with an auto and trucks, so maps, profiles and estimates of cost were completed for tenders for construction to be advertised in order that the work could be commenced that summer. A. J. Sill, supervising engineer, was assigned to this.

At the time there were six supervising engineers responsible for location surveys and construction on the Western Region, reporting to Mr. Wm. Burns, Engineer of Construction, and Mr. E. M. M. Hill, principal assistant. Each of the six supervising engineers had four or five resident engineers with appropriate staffs, to lay out the respective projects and inspect the contractors' work from day-to-day, also to measure the quantities for monthly payments and at completion of the jobs.

Mr. Burns directed these entire activities between the Great Lakes and the Pacific, from his office at Winnipeg. He had just one office assistant engineer, A. J. (Scotty) Morris and one secretary-stenographer. All this was managed smoothly, without fuss or bother. I have spoken of this in recent years and have been looked at with the inference, "You must be romancing". Each engineer was responsible to submit completed maps, etc., from the field, where they worked a minimum of ten hours, six days weekly and, often, seven days. There were no coffee breaks. It was an efficient, happy organization, unfortunately soon to be dispersed because of the collapse of the world economy and, subsequently, World War II.

In the meantime I moved from Unity, to supervise construction of three branches farther south: from Mawer, some eighty miles north-west of Regina, a length of fifty-five miles south-westerly towards the C.P. city of Swift Current; an extension from Neidpath for thirty miles to Swift Current; and a connection of twenty miles between C.N. lines at Kindersley and Glidden.

I made my headquarters' camp by a lake on the Mawer S.W. branch, with Ed Hughes, one of the resident engineers, The nearest town was Morse on the C.P. main line. Mervin "Red" Dutton, who was awarded the contract for grading, etc., camped close by. Apart from the fact that there were no trees, the country was pleasant, with rolling hills which caused the grading of the railway to be fairly heavy for prairie work. Two other resident engineers were Aird Stevens, who camped about six miles out from Mawer, and George Wardrope, with a camp in the hills at Calderbank. Bert Ireland, who had only one eye, was resident between Kindersley and Glidden and Bill Thomlinson Sr. was contractor; on the Neidpath extension John Calshaw and Fred Eaton were the engineers and Jim Millar had the contract.[44]

Supervising these projects during the one summer was a full-time job involving driving thousands of miles over prairie trails and dirt roads, none were paved and few even graveled at the time. It was from the camp north of Morse that I drove, about the 1st of July, to Regina to meet Helena, Eira and John on their arrival from Overseas and to introduce them to our canvas home by the little lake, amidst the virgin prairie of the extensive Jankie Ranch, with a grand herd of white faced Hereford cattle.

In spite of the periods of hot and dusty conditions, this was a delightful summer. Eira and John had congenial companionship with Merv Dutton's two boys, Joe and Alex. They each had a pony and careened about the prairie with more abandonment than good judgment. One day Alex's pony, at full gallop, put a hoof into a badger hole, throwing the rider over its head into sparse turf and fine gravel. Alex was naturally very freckled and into his face little stones were ground in so his appearance was that of a wounded warrior. As Merv was away, it fell on me to drive Alex to Morse for a bout with the doctor. Alex exhibited great pluck during the probing of the stones and patching up.

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[44]Bert Ireland was draftsman on the Tofield-Calgary Branch G.T.P., where I commenced on railway engineering, April, 1910; I have mentioned Fred before.

Then there was the time Merv found the three boys smoking behind one of the horse tents. He invited them into his own quarters and produced cigars for all to have a smoke together. Mrs. Dutton came on the scene and accused her husband of 'killing the boys' but, as far as I learned, it did not deter them from smoking; they were tough. The advice given to children, "Don't smoke, it will stunt your growth" would appear to be bunkum. Some years later, when John had attained a height of well over six feet, we were in the elevator of the Union Station in Winnipeg together when Bill Walkden, Bridge Engineer, also a tall man, stepped in. Bill turned to me, remarking, "Hello, Shorty!"

Ed Hughes, with whom we shared the camp by the lake, had been brought up in hard circumstances of a Welsh coal mining district, which resulted in a somewhat serious character. He brightened with Helena, however. They went for walks together and Ed described the local geology.

Aird Stevens was entirely different; full of spontaneous action. He drove a large expensive car, not paid for, whereas the rest of us drove Fords or Chevs. Aird would often drive to Moose Jaw for a week-end with his sister, who was married to the principal of the College. After one trip, Aird came into our camp with a lively pedigree wire-haired terrier pup for Helena. This was so typical of him, a gentleman through and through. Nevertheless, he had an affair with the wife of one of the store proprietors at Central Butte where there was a rather nosey lady across the way running a restaurant and keeping tab by waiting up to watch from her bedroom window. Aird was greatly amused, so drove close to the window exclaiming, loudly, "Mrs. Jones, all's well, I am going back to camp. You can go to bed".

At Calderbank, George Wardrope's camp was midway between Ed and Aird and, George's attitude to life was also about midway. His early years in Scotland had been frugal, which taught him not to buy without paying cash. The cook at his camp was an excellent, motherly woman, with two snappy teenage daughters, so I often made a point of being there for a meal. Once, at supper, the boys were discussing going to a dance at the local school-house. The cook said, "Mr. Wardrope, why don't you go with them?" George replied in his strong scottish brogue, "Madam, I can only do one thing properly at a time. Right now I'm working". But when George was in town between jobs, he surely made up for his abstemious camp life.

A telegram instructed me to meet Mr. Burns at Morse. He arrived on the C.P. transcontinental train, alone, without fanfare. I had had many interesting inspection trips with Mr. Burns, but this one surpassed them all. He was naturally reticent, except when alone with a person he knew to be interested in the history of the West. We were driving through the hills south of the South Saskatchewan River where the prairie wool (grass) was as it had been for centuries but for the pair of ruts we were following and several pairs of parallel ruts cut by the passage of Red River carts during the seasonal buffalo hunts and freighting for the Hudson's Bay Company. As the ruts became so deep as to cause the axles of the carts to scrape on the ridge between the pair, the carts moved over a few feet to travel there until the new trail had to be abandoned too. Mr. Burns narrated that this was the trail he had travelled, as a young man, with a brigade of Red River carts, from Fort Garry to Fort MacLeod. They had forded the river near the present city of Swift Current.

On arrival at Fort MacLeod where the survey party he was working with were in camp, Mr. Burns humourously related that a powerful Indian entered their tent, looked around, picked up a vest, donned the garment and swaggered out. "We made no attempt to stop him", said Mr. Burns. At that time there were still a few buffalo running free.

The most colourful ceremony Mr. Burns remembered witnessing was the signing of the treaty with the Indians at Fort Qu'Appelle. The officials from Ottawa and the Mounted Police were all in their dress uniforms and the Indians wore their splendid tribal trappings of the era, all in the carefully selected and dignified setting of Qu'Appelle Valley, beautiful with brilliant sunshine, so characteristic of the prairies.

It is to be regretted that no one recorded Mr. Burns' experiences of the many historic events he had a part in. He was born and educated in Ontario, then commenced the profession of engineering in the employ of the Canadian Pacific Railway on the location of its main line in the rugged Canadian Shield around the north shore of Lake Superior, circa 1880. Camp conditions, even during winter, were little better than bivouacs. The highlight, Mr. Burns said, was a cast iron bean pot which was considered a luxury.

When the Canadian Northern Railway was incorporated, Mr. Burns transferred to it and he became responsible for the location and construction of its main line west of Dauphin to Edmonton, during

which he established the sites and names of many of the towns along the way and also for the more northerly line through the Carrot River Valley and the town of Melfort. Later he located the Canadian Northern main line through the Yellowhead Pass, west of Jasper.

Merv Dutton took a few days off to take his boys, Joe and Alex, and our John to the Calgary Stampede. They left our camp, north of Morse, after supper. Merv had a powerful Packard car and drove, as he did everything, all out. From what I heard, they had a wonderful time. Then, of course, the girls had to have a holiday, so Merv drove them, Phyllis (Mrs. Dutton), Helena and Eira, to Banff Springs hotel and to Lake Louise for a little luxury.

Such good progress was achieved on the grading of this line that tracklaying was possible in the late fall and completed by Christmas, when the engineers' camps were closed and the personnel moved into Winnipeg for the holiday season. Just prior to this there was an amusing incident near Aird Stevens' camp. In the depressed market conditions, turkeys were almost unsaleable, so one farmer organized a party to dispose of his flock by means of playing hands of poker. This was a huge success. Aird was in his element as master of ceremonies, with a cigar, dealing the hands - emulating a professional. In addition to furnishing the prizes, the host supplied a generous amount of roast turkeys for his guests. As the evening advanced, the floor became increasingly slippery from dropped pieces of fat and skin. Our party was lucky in winning a number of birds, all alive and active with their wings trussed under one another. We threw them into the back of my car, then on the drive to camp, we stuck in a snow-drift. The shovel and tire chains were beneath the turkeys. What a night that was!

We ate turkey day after day and had some birds for Christmas and New Year.

Aird Stevens called on Christmas day at our apartment in Winnipeg, to wish us a happy holiday season. Of course, we invited him to dinner. It would appear to the uninitiated that Aird was suffering from a cough, so Helena called from the kitchen, "haven't you anything to relieve Mr. Stevens' cough?" I had no alternative but to pour him another drink, on top of what he had already had during the day. At the table, I opened champagne - it was the undoing of poor Aird - he collapsed without tasting the turkey. Helena, Eira, John and I, however, enjoyed it and later called a taxi for Aird to return to the Fort Garry Hotel. The wire-haired terrier pup, Chummey, had now grown to a lovely dog, definitely one of our family.

The champagne had been delivered Christmas Eve as a complimentary gesture. At the time I had an instinctive premonition that under the prevailing conditions this would not continue. Within a month, the good life terminated with a crash, not to be revived for many years - until after World War II.

14. A VISION NORTHWARD

Prior to the crash, Mr. Gzowski envisioned that future mining developments might be extended north of Flin Flon into the North-west Territories and railway transport would be called for. Consequently, when I reported in from Southern Saskatchewan to Winnipeg, December 1929, I was instructed, through Mr. Burns, to plan to undertake a major reconnaissance from Flin Flon northerly to Brochet at the north end of Reindeer Lake, thence north-westerly to the north of Wollaston Lake and Lake Athabasca, to Fort Resolution at the south shore of Great Slave Lake, then southerly to return to settled country at Peace River. Ed Hughes, having some knowledge of geology, was assigned to be my assistant.

The immensity of this project, through the taiga and tundra of the sub-arctic, fired my enthusiasm. It was what I had dreamed of. The first phase was to obtain letters of credit from the Hudson's Bay Company to be supplied with rations, etc., at its posts within the territory and to establish caches during the coming winter when cross-country travel would be practical with dog teams, for use the following summer for travel by canoes. This entailed much detailed planning as it was expected that most of one year would be necessary to carry out the assignment.

There was just time to make a quick trip to Flin Flon and return before Christmas. The Hudson Bay Mining and Smelting Company was constructing its hydro electric generating station at Island Falls on the Churchill River, sixty miles north of the mine, then in the development stage. The winter road to the Falls had just been ploughed out in preparation for freighting construction materials and supplies with Lynn tractors, which would haul trains of sleighs and a caboose for accommodation of the crew and cook enroute. These trains travelled around the clock, in all weather conditions. The drivers faced the elements without the protection of a cab; they only had an open wind shield as it would be dangerous to be enclosed if the tractor should break through the ice into deep water of the lakes and rivers.

It appeared that a runthrough to Island Falls would facilitate jumping off in the beginning of January, 1930. Mr. "Baldy" Green, General Manager of H.B.M. & S., made his Hupmobile sedan available to me. He requested me to take along a honeymoon couple from Mexico. The weather was clear and cold, about thirty below. Although the pair in the back seat sat fairly close together, they were not too warm, sowhen we stopped at a midway camp for coffee, we borrowed two eiderdown sleeping bags, zippered them together and slid in the newlyweds - they were snug as bugs in a rug.

The return drive was at night, under bright moonlight sparkling on fresh snow - most beautiful along the narrow trails cut through the boreal forest, as portages between the lakes. The young visitors from the South were enraptured with the frosty white jewels on the dark green boughs of spruce and jack-pine.

Passing through The Pas, one could observe the slackening of the boom, brought about by completion of tracklaying to Churchill, Flin Flon and Sherridon, all of which had been directed by Major MacLachlan. Harry MacLean's organizations were gone both from The Pas and Cranberry Portage. This caused a substantial drop in the prosperity as he contracted for all items of construction to Flin Flon and to Sherridon, including the tracklaying and ballasting with his own locomotives and railway rolling stock. There were only a few contractors with sufficient capital resources for such undertakings.

Harry MacLean demanded action; on the other hand, he was very generous. He staged huge Christmas parties for the children of The Pas during the height of his operations there. It was said that on one of the Christmas mornings, Harry called to pay his respects to the Roman Catholic bishop who, with acumen, poured Harry a drink and received a cheque for several thousand dollars with which to purchase X-ray to equip the hospital.

At the junction just north of Cranberry Portage, where the line to Sherridon turns off from the line to Flin Flon, Harry MacLean had an imposing cairn erected of local rock in honour of the workers, in particular those who had given their lives during construction of these lines. He had four bronze plaques cast, with Kipling's immortal poem, "The Sons of Martha" inscribed thereon - one set on each of the four faces of the cairn. Later, although Harry had no part in the construction to Churchill, he had another such cairn built upon the ancient weather-beaten rock overlooking the harbour. Years later, he had a third cairn built. It is erected near East Hawk Lake by the C.P.R. main line between Winnipeg and Kenora. This was the site of a gigantic contract Harry undertook to quarry and crush rock from the Canadian Shield for ballast, reflecting another facet of Harry MacLean's amazing character of which there are so many legends. He was one of the great contractors of the era.

With the entrance of the New Year, 1930, the crash struck with devastating effect. My dream of reconnaissance from Flin Flon northwesterly to Great Slave Lake was shelved, much to my disappointment. We did not know at that time that I would undertake it, on a more extensive scale, thirty-three years later.

15. THE HUNGRY THIRTIES

The Last Location Surveys for 20 Years

Before an overall closure of new line construction, Mr. Burns instructed me to establish locations for connections of the two uncompleted lines projected between North Battleford and Edmonton, north of the North Saskatchewan River, astride the Saskatchewan-Alberta boundary (the fifth meridian) from Frenchman Butte to St. Paul de Metis and from Loon Lake to Cold Lake, respectively. Ross Wilkinson was assigned to run a second party in order to complete these surveys by spring break-up.

These jobs were in pleasant park-like country with enough topographical features to be interesting. Our transport was with teams and sleighs and I had a saddle horse.

My last camp site was on the Frog Lake Indian Reserve. While shovelling snow to clear a space to pitch the office tent, the wrinkled, weather-beaten old Chief stood by contemplating and, after some time, said to me, "Me no tobac, too bad, too bad". Our draftsman was a young Scot, Harry Brown. It was his first experience on a survey so the cook, always creating some fun, persuaded a young squaw to go into the office tent where Harry was working alone during the day. Harry was naturally reserved and nonplussed with the girl sitting on his bed in the corner of the tent watching him stoically, without saying a word. The cook, of course, had to drop in on Harry and, at supper that evening, he enlarged on the situation. I do not think Harry ever forgave this innocent fun.

Old-timer, Leon Chapman, was levelman. He was naturally light as a feather so, if there was a little crust on the snow, his snowshoes would support him and he could skip along on the surface when his companions would break through and have to slug forward with each step. Leon derived a great kick from our greater exertions.

About daybreak one fine morning in March, I was riding by a log shack, facing east, when an Indian opened the door and salaamed toward the glorious sunrise. This impressed me deeply. I wondered about the beliefs of our indigenous neighbours, that they have perceptions which we, so-called sophisticated settlers in this grand land, do not fully comprehend but, to some extent, might well emulate in our attitudes to life - one to another and towards conservation of God given natural resources.

With the jobs wrapped up, we moved south across the North Saskatchewan River to Lloydminster to load our equipment and return to Winnipeg, wondering what the future might hold.

In the Drought and Dust of Southern Saskatchewan, 1930-33

The first blow was a general reduction of ten percent in rates of pay for non-scheduled employees and drastic curtailment in staff.

I was one of the fortunate to be retained; to supervise completion of ballasting on the Mawer South-westerly line and the Neidpath Extension but without assistants, cook or pleasant camp life. It was quite a change to live and 'batch' in a converted box car, commonly termed a boarding car. I moved out to a spur near our camp site of the preceding summer by the little lake where, at least, there was water within view.

These conditions appeared to portend a less than jolly summer for my family; however, my wife, always a good sport, would not hear of not joining me as usual. To ease the situation somewhat, I engaged a farmer's daughter to assist with the chores. We had picnics at the Jankie ranch house, a rambling log shack, whitewashed,built in a coulee with a fair growth of poplar overlooking the South Saskatchewan River. It was a typical ranch establishment with a Chinese cook, operated by the three Jankie sons and extra help when required; the eldest son was boss.

Mr. Jankie Sr. lived in Morse. He had visions that his sons would graduate from the University of Saskatchewan but each, after the first term, arrived home with all his belongings for Christmas and their father wisely concluded they preferred life on the ranch. It was managed in a very business-like manner. They invited John to spend a couple of weeks with them during which he learned quite a lot about horsemanship.

Although there were days of parching heat and dust, especially when I drove the family, including Chummey, our lively dog, to Regina during a following wind and no means to gain a breeze, it was a happy summer. It was indeed a relief to check into a hotel and take a cold bath while waiting to entrain for Winnipeg for the return to school. But we had been together and appreciated how fortunate we were to receive a monthly pay cheque. I drove back during the night to my boarding car where I would be alone until the approach of Christmas.

At freeze-up I moved my boarding car into the service track opposite the station at Mawer and assumed the duties of acting as roadmaster and trainmaster - a jack of all trades - to operate the two branch lines just completed from Mawer S.W. to Main Centre and from Neidpath to Friend, seven miles east of Swift Current.

I had two section gangs of four men each on the fifty-two miles out from Mawer. The foreman for one was the ingenious Moonlight Anderson. There was never a dull moment around Andy. He was the first to design and put into service a combination car to operate either on the railway or highway, as convenient. He quickly converted his Ford sedan, at any road crossing, by jacking it up and placing two cedar timbers longitudinally, with four hand car wheels attached, under the Ford's axles as guides to run on the railway. The front two wheels with pneumatic road tires were completely above and free of the rails, but the two rear road wheels ran on top of the rails supporting part of the Ford's weight for traction. This proved to be an efficient machine and during winter Andy attached a drop nosed snow plough which could push through quite a depth of snow. When Andy wished to convert his car back to operate on the road, he just jacked it up at a crossing, removed the timbers and flanged wheels, to be away in a few minutes. Andy should have been acknowledged for this development but the track motor car manufacturers purloined his idea to produce the rail-road cars now in general use.

Andy was most good hearted, always ready to help anyone who was hard up. There were many thus along the line. At Gouldtown, the young people wished to have a skating rink but had no timber to build sides, so Andy stripped the bracing from the stockyards for them. The other foreman, however, was jealous of Andy and he wrote an anonymous letter reporting Andy's transgression to the Investigation Department. There was quite a fuss about the misuse of Company materials but we succeeded in bailing Andy out. The incident did not do the informer any good.

We operated a train weekly from Mawer, out one day and return the next day. The overnight stop was at Main Centre where we had a bunk car set out for the enginemen and another for myself. The trainmen, of course occupied their caboose. My duties consisted of riding on the train, assisting in unloading wayfreight and public relations with shippers, especially where we were in close competition with the C.P.R. Empty box cars were spotted at the

grain elevators at each station and loads picked up the following week. I also secured shipments of cattle from the Jankie ranch, which were formerly treked to our competitor. This was a new experience for me, which I found challenging.

There was no regular train schedule on the Neidpath Extension. Box cars were taken in for loading when requested by the elevator company agents. Then I had a roundabout journey from Mawer, via Moose Jaw, to Neidpath. This made a change in routine and gave me opportunities for a night in a hotel with a bath, also some variety in meals from Mrs. Pever's menu at Mawer where I ate most of the time, happy to have them, especially considering the price of 40¢, instead of cooking for myself in the bunk car. During this period, I read extensively by exchanging books at the libraries in Moose Jaw and Regina.

With the onset of winter, snow-storms roared across the open prairie to drift into the railway cuttings. When this occurred, it was necessary to request from Regina a snow-plough extra (train) with two locomotives for sufficient power to clear the line. Operating the plough was another new experience for me, one I enjoyed very much, especially when sighting a heavy drift ahead. I would signal the two engineers pushing for more speed to hit the snow and send it flying overhead, particularly at night. Sometimes there would be a covey of Hungarian partridges burrowed into the snow. They would rise like a bomb exploding in the glare of the powerful headlight. Where the line ran through summer-fallow fields, there was fine dry soil mixed in with the snow, demanding increased power to clear such drifts and presenting a potential cause for derailment and possibility of a serious wreck. This gave me pleasurable excitement, similar to that of running rapids during earlier times on the Nelson River.

During the Christmas-New Year holiday, I was able to have ten days at home in Winnipeg. We had a happy time but there was no champagne as of last year. Helena, however, had somehow managed to save enough to buy me an eighteen carat gold watch, appropriate to wear with the solid gold chain she had given me on her return from England in the summer of 1929. This was no small sacrifice considering the cost with Eira at St. Mary's Academy and John at St. John's College School.

After the holiday I returned to the bunk car on the siding at Mawer to supervise maintenance and train service on the new lines which had not been turned over to the operating department.

Approaching Swift Current, the line from Neidpath is at the base of a side-hill adjacent to the trunk highway. The spring run-off was rapid, causing water to be impounded in a ravine above the railway embankment where the culvert was obstructed with hard packed snow, threatening a wash-out. I borrowed a shovel from a neaby farm and was shovelling snow from the culvert when John Dutton, Merv's elder brother, driving on the highway, saw me and stopped for a little merriment, saying, "It surely tickles me to see you on the end of a shovel. You have bawled me out many a time for not trimming our grading contracts to perfection". We had quite a laugh, then John roared away in his Packard.

Physical conditions and the economy continued to deteriorate. Soil lost the little moisture it gathered from the spring run-off and drifted from the summer-fallow fields, to pile up together with tumble-weed and Russian thistle along the fence lines. When driving along roads, between such piles of weeds and soil, the drifting soil would obstruct the trail. It was not advisable to stop for fear that soil would pile up around the car wheels and it would be almost impossible to start again without assistance.

Storm windows, usually removed in the spring, were left in place to guard against fine grained soil being blown into houses. Even so, if one was privileged to be given white sheets and pillow cases, the pillow cases and exposed parts of the sheets would be nearly black by morning, except where one's head had rested. Farmers, previously prosperous, were reduced to having to gather buffalo chips (dried manure) to use for fuel, even in the cook stove. Wheat was roasted and ground as a substitute for coffee. There was insufficient water for the growth of vegetables. Cattle and chicken were lean and wan.

This was the era of the Bennett buggy.[45] Persons unable to purchase gasoline, removed the engines from their cars and hitched on teams for periodical drives to town. Children often walked miles to school, with but dry bread in their lunch pails. Teachers fortunate enough to be retained, worked for their board, without salary. Families undertook to board the local teacher on a rotation basis.

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[45] Named, in satire, after the Hon. R. B. Bennett, Prime Minister, with the Conservative party in power.

The Hungry Thirties

Time after time, in the afternoon of sweltering heat, dense black clouds would accumulate, indicating rain (if not a cloud-burst) was about to fall and relieve the terrible situation. But not a drop would fall and the sky would clear. The optimism of the farmers was amazing and gave them the courage to carry on, seeding their land spring after spring in hope that conditions would improve. There were no welfare payments; some eastern communities donated car loads of apples which were shipped by rail to the south-west. On arrival, committees distributed the apples (and sometimes clothing) to the needy, as the cars were opened at the respective railway sidings.

Thousands of men and some women were wandering about the country unemployed. They "rode the rods" - in empty box cars on the railways - without food and shelter, except in some of the cities where the soup kitchens were set up to give hand-outs. In Regina, the unemployed from throughout the west organized to march on Ottawa, but were dispersed by police with violence.

One bitter winter evening at Moose Jaw, when the fireman was lowering the water tank spout to fill the tender, he found a young fellow laying on top of the coal, black and half frozen from exposure. He was taken to the caboose and given hot coffee and a chance to warm up. Not all train crews and railway police were so humane. Some would have given, what they considered a 'bum', a kick in the pants and chased him off.

Others were drifting on the highways. I picked one up when driving west from Regina. He had nothing but a small newspaper wrapped parcel. For many miles he was quite morose but, after awhile, I got him into conversation and learned that he was endeavouring to go home to Prince George, west of the Rockies. I discovered that he knew Mr. L. C. Gunn well. I had worked with Mr. Gunn on the location survey for the main line of the G.T.P.R. during 1912. The little parcel this young traveller clutched, contained a crust of stale bread - his all!

Many of these persons left their homes in order not to add to the burdens of their parents who were almost destitute. The rate for common labour, if it could be secured, was 25¢ per hour. This was the rate being paid to a former railway construction supervisor, reduced to being a watchman of equipment stored in a ballast pit at a desolate spot at the end of a spur from a line on which construction had been suspended. Another supervisor, when he was laid off, claimed he was senior and therefore entitled to this pittance. This was the last straw; the former shot himself and was found dead in his lonely bunk car.

Bill Chandler, resident engineer with me on several projects and transport officer on location surveys, having in all over twenty years of continuous service, was laid off. But Bill did not sit back. To support his wife and three daughters, he took work as a section labourer on maintenance of a line he had recently constructed. He was a stalwart example of quiet determination 'to stand on his own feet'!

Aid was given to ranchers to move herds from the parched prairie to pastures in the north and to cover the cost of rail freight on hay from the north to the south. Many farm families from the dust bowl travelled slowly, with weak horses and a cow or two, to start anew in the northern park and bush lands. They presented tragic spectacles on the roads.

Relief camps were set up in the bush to make work cutting wood and clearing lands for parks. Three of my friends, professional engineers, were in a camp near Lac du Bonnet, while their families eked out existences in Winnipeg.

The few of the C.N. Construction Department who were retained could never do enough in loyalty to the Regional Chief Engineer, Mr. H. A. Dixon, and the Engineer of Construction, Mr. Wm. Burns, as well as Murray Hill, who were under continual pressure from higher authority to reduce expenditures even further. Some twenty-five years later, after World War II when I was appointed Regional Chief, I realized more and more how much I owed these true gentlemen.

16. HUDSON BAY RAILWAY - MAINTENANCE AND OPERATION

Return to the North

By September 1934 the Construction Department had been reduced to a bare skeleton; Mr. Burns had retired, at age seventy, after an outstanding career, to be succeeded by Mr. E. M. M. Hill. The entire field staff had been placed in other positions or laid off, excepting those engaged on the Hudson Bay Railway, and their function was transforming to that of maintenance and operation, under the management of Major J. G. MacLachlan, with headquarters at The Pas.

However, there was still a heavy annual program of betterments - drainage, ballasting and bridging. The Major's staff was highly experienced - George Brown in charge of train movements, in a similar position to that of assistant superintendent in the Regional Operating Department; Tom Rafter was both B. & B. Master and Roadmaster; Bill Woodcock was locomotive foreman and master mechanic, based at Gillam; and Michael John O'Shea, who, with Moonlight Andy, laid the track into Churchill, was section foreman at Thicket Portage; Scotty Devenny and Lorne Bunn installed and maintained water supplies; Pete Campbell built new structures and Eddie Barker was accountant in charge of payroll.[46] A grand team of good fellows.

I was delighted to be relieved from the southern "Dust Bowl" to join them as supervising engineer in this northern land with clear flowing rivers, lakes and green foliage and, an abundance of game and fish. Although opportunities for employment were scarce, the North was a veritable "land of milk and honey" compared with the South.

Murray Hill arrived in his business car to make his first inspection of the line to Churchill and invited me to accompany him. He was particularly interested in the track north of Amery, where he and Bill Chandler had become seriously ill early in January 1927, which had prevented them from undertaking reconnaissance to establish the route to Churchill.

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[46] Eddie - E. S. Barker - was active on the School Board and other community affairs, also in the Knights of Columbus, and was honoured by the Pope for his initiative and leadership. Eddie progressed in railway service and was Area Manager, Saskatoon, at the time of his retirement in 1970.

To travel with such an esteemed friend and senior officer, in a commodious business car, with an excellent steward to serve first-class meals, across the "Land of Little Sticks" and the "Barrens", recalling breaking trail ahead of the dog teams and camping in company with Mathias and Jim,[47] some nights in the open, was indeed a gratifying experience, especially considering the train speed of thirty to forty miles per hour compared to our four miles per hour.

We came to a stop by a modern station, Churchill, with hot and cold water and inside plumbing; then the car was switched onto a siding. Our first duty was to inspect the roundhouse, machine shop and other engine and car facilities, then walk along the spur serving the wharves, ocean-side freight shed and the grain elevator, where the manager, Bill Twolan, conducted us through his domain. He took us aboard one of the ships moored alongside being loaded with grain, and introduced us to the captain, whose greeting was hospitable - with tax free liquor. He described the navigation features through Hudson Strait and into Churchill Harbour. The Strait controls the length of open season, late July to mid October.

Mr. George Kydd, engineer in charge of construction, took us across the harbour to view the ruins of Fort Prince of Wales. A bronze tablet records, "FORT PRINCE OF WALES - built upon plans drawn by English Military Engineers to secure control of Hudson Bay for the Hudson's Bay Company and England. Construction commenced in 1733 and completed in 1771. Surrendered to and partially destroyed by a French naval force under La Perouse in 1782".

Our tour continued along the west shore of the harbour, by the old Hudson's Bay Company post and the Anglican Mission, where I had been hospitably received when on reconnaissance in March 1927 and, again, in March 1928. It was on this shore that Jens Munck, the Danish explorer and discoverer of Churchill, wintered 1619/20, and it is interesting to see inscribed in the rock at Sloop Cove, "Sl Hearne, July ye 1, 1767", also a sketch illustrating the hanging of one from the Isle of Wight, for stealing a goose. The cairn commemorating Munck's discovery is on Battery Point, however, on the east shore of the entrance to the harbour; the tablet records, "Port Churchill - Discovered in 1619 by the ill-fated Danish expedition under Jens Munck. In 1689 the Hudson's Bay Company built the first Fort Churchill which in the same year

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[47] Mathias and Jim, Split Lake Indian dog skinners with me, winter 1926/27.

was destroyed by fire. In 1717 the Company re-built Fort Churchill, for nearly 200 years its most northerly post on the Bay and the starting point for many Arctic explorations. The Hudson Bay Railway was completed to this point 1st April 1929".

And, the cairn erected by Harry MacLean in remembrance of the "Sons of Martha" stands on the ancient bare rock, facing the elements.

On our south-ward journey, during the stop to take water at Mile 474, I was able to show Mr. Hill that there was a depth of barely one foot through the lichen to permafrost. This was in September, after the full effect of summer. I bade au revoir to Murray at The Pas and took up my abode there while the Chief returned to Winnipeg.

Life at The Pas

The H.B.R. headquarters consisted of a rambling frame building, with the office on the ground floor and, above, living quarters - a "bull-pen", although partitioned into rooms - to accommodate single members of the staff and others, including myself, away from home. There were also six bungalows to house officers with their families and a lone bunk-house which I occupied later - all located in more or less a company compound, near the bridge crossing the Saskatchewan River.

If it had had power of speech, the "bull-pen" could have related many interesting and amusing incidents. The partitions were of one-ply t & g boards - far from sound-proof. From one room, about midnight, a sweet feminine voice was heard "You're hurting me", then from another room, a strong masculine voice, saying, "Come over here, I won't hurt you". The quiet of Sunday mornings would be awakened by a discourse from Larry Guinan urging George Van Burren to dress for church and confession. Both were attractive young fellows with a wide circle of friends.

As there were no facilities for cooking in the quarters above the office, we walked about one-half mile to take our meals, usually at the Opasquia Hotel with hosts Bill and Mrs. Shore; a most hospitable atmosphere, difficult to come by in later times. The large rotunda floor was bleached white from weekly scrubbings Saturday mornings. Four buxom Indian women would walk from the Reserve, on the north bank of the Saskatchewan River, about three miles into

town, and, then, on hands and knees, in line, scrub the floor boards. After receiving their wages and relaxing sitting on the plank side-walks around town, these native women paradoxically engaged a taxi to return to their homes on the Reserve. The Indians were a lucrative source of revenue for the taxi drivers. Some would demand an extra two-bits for music from the car radio and apparently bootlegging was another side line.

The friendly pioneer spirit of the North pervaded. If one joined in, life at The Pas could be delightful. Many families had summer cottages at beautiful Atikameg Lake, seventeen miles north of town, with a sandy beach for swimming, at other points rocky shores and an abundance of lake trout in the amazingly clear water, a depth of two hundred feet. Winter activities included badminton at the Legion Hall; there was an excellent covered rink for both curling and skating, where one evening I bumped into a teenage girl and apologized for being clumsy. She said, "OK granpap". (I was 43!) Also, there were the customary dances and parties. Poker continued pretty well around the clock, at times for very high stakes. Although there was a Government liquor store and several beer outlets, bootleggers flourished during the off hours.

Conrad Gran, an athletic Norwegian bachelor about my age, was office engineer with me. He gave a few of us instruction in skiing and we had enjoyable picnics in the bush - I cooked moose steaks. Mr. and Mrs. C. R. Neely and their two nieces, school teachers, were among the group. C.R. was one of the most gentlemanly of men it has been my good fortune to know. At an earlier time he was manager of the Bank of Commerce at The Pas. One of his customers was Carl Sherritt, the prospector grub-staked by Pete Gordon, who discovered the Sherritt-Gordon Mine and became wealthy. Carl decided to fly and went to the United States for instruction and, when licensed, he purchased a plane and piloted it home to The Pas. Shortly thereafter he had a fatal crash. Carl's brother and sister became beneficiaries of his considerable estate and they wisely requested Mr. Neely to resign from the bank to administer their financial affairs for a firm period of five years. During this time C.R. was mayor of The Pas, until Sherritt-Gordon Mine requested him to administer the new town of Sherridon and, subsequently, the District of Lynn Lake.[48]

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[48] When the ore body at Sherridon was exhausted after 20 years of mining, the plant and town was moved with tractors over the winter trail, about 175 miles, to Lynn Lake, leaving a skeleton of the hotel and a few other buildings at Sherridon.

Hudson Bay Railway Annual Budget

Fall was the season for making the last overall inspection of the railway for the year, to note conditions of the various items of work to be included in the budget for the next year. Considerable time in the field was required to go over the 510 miles to Churchill, including frequent stops along the way to climb about bridges, look into culverts and ditches, examine buildings, water services and note track conditions. However, we had a Hudson Coach with steel wheels to run on the track and the weather was usually favourable, with enough frost to kill off mosquitoes and blackflies.

All in all, this was a pleasant task. With some judicious planning, first-rate hunting could be included, to stock up with game birds and perhaps a caribou. Sharp-tailed grouse, commonly called prairie chicken, imigrated northerly along the railway right-of-way to feed on grain which trickled from cars in transit to the sea-board. Some seasons these birds were very plentiful. One of us would sit on the hood of the car and take them as they flew up from the undergrowth. This was really good sport, with the car moving and birds on the wing, without taking too much time.

Chicken and partridges (ruffed grouse) worked northerly to the Limestone River, Mile 352, but not beyond into the Hudson Bay Lowlands where muskeg and lichens prevailed. There willow ptarmigan were found. Also of the grouse family, this is a beautiful bird; in summer and fall its plumage is predominantly a rich reddish brown with splashes of white, but in winter it adopts effective camouflage of pure white, except for wing tips of black showing in flight. Ptarmigan generally run when first disturbed and are loath to rise. As it is not sport to shoot a bird on the ground, we would chase them. This was strenuous in the soft surface; when the birds did fly, we were often too puffed out and missed them. The flight of ptarmigan when they do take off, is swift. We had many a good laugh at one another.

Sometimes we might chance on a duck or goose, but organized hunts were necessary for them, as it was for moose too. Bears were often seen on the right-of-way, but unless a person really wanted a good rug, there was no point in shooting them, for it is quite a job to skin a bear and scrape off the fat.

On return to The Pas, our notes and recommendations would be discussed with Major MacLachlan and he would instruct us on what items should comprise the budget for submission to Ottawa. This was before the line was integrated into the Canadian National System. It was a busy time in the office, together with Conrad Gran, Charlie Prescott, chief clerk, Steve Leaver, general clerk and the stenos; also Fred Collins' staff. Fred was auditor, representing the Department of Railways and Canals, quite a character, with a happy, executive ability.[49]

The Major came from solid Ontario country stock and was inherently a good housekeeper. Nothing under his management had a rundown appearance. The Department would authorize the aggregate sum of his budget and he would expend it as he saw fit during the year, without further reference to higher authority.

Winter Maintenance

After a few days at Christmas with my family in Winnipeg - all too brief - and following the New Year's Eve party, also Helena's birthday, I was obliged to take the train that morning to return to The Pas. A job was a job in the Thirties and one took no chance on losing it.

The more practical season, rather than summer, to survey for improving drainage of the railway was when the muskegs were frozen. Drainage to me was all important. Train-fill could be poured onto embankments crossing muskegs, summer after summer, without lasting benefit if the toes of slopes were in water.

My old associate, George Wardrope, with a small party, ran the drainage and other surveys under my direction. In some of the very flat muskegs it was necessary to go up to three miles to obtain an effective off-take gradient.

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[49]Fred, F. H. Collins, was very young when he volunteered for service in World War I. He was awarded the Military Medal for gallantry. He was promoted from the H.B.R. to be financial officer for the Northwest Territories. When World War II struck, Fred volunteered to serve with the Welland & Hastings Regiment and, prior to demobilization, he was posted Lieut.-Col. Post-war he was appointed Commissioner of the Yukon Territory, with headquarters at Whitehorse.

Between The Pas and Amery, track maintenance presented no extraordinary difficulties, except perhaps in the central area about Thicket Portage, Mile 185, where there is an unstable class of clay in the discontinuous zone of permafrost (areas of permafrost, with others free of this condition); heaving of the surface was heavy there, causing hard work for the sectionmen, shimming to maintain a safe rail surface.

Across the Hudson Bay Lowlands, in the zone of continuous permafrost, there were few problems. In fact, there was so little to occupy the section forces during winter, that every other section was closed in this season, even though the length of sections were twelve miles. This meant that in winter sections were twenty-four miles. Track patrol on open track motor cars could be bitterly cold facing strong winds sweeping the Barrens. As the track is laid almost entirely on embankments, three to five feet high, and placed on undisturbed permafrost, there is little settlement and no heaving. Also, it is only on rare occasions that a snow-plough has to be operated.

The section foremen lived alone in their houses and the men, usually three, occupied the bunk-houses. Although there was telephone communication with all points, these men were extremely isolated. Some of them, on holiday in The Pas, spoke to me in a restaurant, laughingly saying, "If you call us on the phone between 8 o'clock and 17 o'clock, no one will answer" - these were hours they should be on line, Monday through Saturday.

Other than the railway sectionmen and pumpmen, the only habitation in the Lowlands was an Indian family at Owl River and two white trappers, Emil Buss and Harry Pienowski, of mid European extraction, by the Deer River and with whom I became well acquainted. These two men occupied log cabins, built by the Railway in a stand of spruce on the river bank in the spring of 1928. Mr. Dixon, the chief engineer, was apprehensive that some of the engineers going in for construction might become stranded, so he instructed me to have a good set of cabins built and stocked with supplies for use in emergency to be headquarters camps for the supervising engineer. On completion of railway construction, the buildings were vacated and the two trappers moved in and maintained the camp in good condition. They were professionals, each operating an extensive trap line, travelling with dogs, stopping at "out camps" overnight. It was a year-round business, for summer months were employed in stocking supplies for themselves and their dogs, repairing equipment and cutting wood, all in readiness for winter. Everything at their base was always shipshape.

At times, this was an overnight stop for me when alone on a small track car enroute to Churchill. It was Easter when these two good fellows introduced me to pre-supper cocktails of pure alcohol. I was a bit timid to partake of them, but was assured the pure spirit would not produce an unpleasant hangover. Their annual income was in the higher brackets from the pelts of white fox, red fox, cross fox, beaver and mink, especially when the cycle for white foxes was at its height. Caribou furnished winter meat and it could be kept towards summer in the natural freezer - a hole in permafrost. Polar bears frequented the area in certain seasons but, in the Thirties the price for their hides was so low it was not worth the labour of skinning and scraping them. Indians from Churchill chopped up whole frozen white bears into chunks for dog feed.

Summer Maintenance

The Hudson Bay Railway is divided into three subdivisions - the Wekusko Subdivision, Mile 0 to 137, where much of the basic formation is limestone; there were no uncommon maintenance features, except between Mile 100 and 130. There were extensive muskegs in very flat terrain, so drainage was difficult, but, apart from a few small islands, the condition of permafrost does not occur. The Thicket Subdivision, Mile 137 to 326, is in the zone of discontinuous permafrost and the formation is predominantly unstable brown clay, peat and solid rock related to the Canadian Shield; heavy annual programs of train-fill and ballasting were essential for a number of years and the section forces had a hard time keeping the track in reasonable surface. The Herchmer Subdivision, Mile 326 to 510, is almost entirely on peat above the basic glacial till within the zone of continuous permafrost; as this condition has been carefully preserved, track maintenance is minimal, in fact, as though it is on a base of solid rock.

Where the piles of timber bridges were steamed into permafrost, however, heaving occurred. Moreover, the heaving was irregular and unpredictable. Piles in the same bent might be affected differently and this required the employment of one bridge gang to maintain the surface of such bridges by cutting off piles that heaved and shimming up others. The accumulated amount of cutoffs was recorded as a safeguard against the extreme possibility of a pile popping out. This situation has been now nearly overcome.

Water pipe-lines had to be laid above ground and be carefully insulated with dry peat, which was covered with half-round corrugated iron to protect it from becoming saturated and negative for insulation. The supply from the Deer River to the Mile 474 tank was difficult to maintain; the pumpman was a Swede, who perforce lived entirely alone. It is noteworthy that Scandinavians endure solitude better than other nationals. Operation of diesel locomotives has eliminated the need for this water supply.

Re-excavation of existing ditches and excavation for additional drainage was an annual process. In my opinion, this is of the utmost importance, but is often disregarded by many young engineers who dislike wading about muskegs, especially in spring and fall when the water is cold and during the summer plague of mosquitoes and blackflies.

The Hudson Bay Railway, however, was fortunate to have an excellent drag-line operator, who performed in the most proficient manner of the many I have observed over the years. Stan Williams always commenced excavation at the outflow from the ditch and worked up-grade, thus ensuring a uniform gradient, without little rapids and still pools so often seen in work by less capable men. To achieve this high standard, Stan walked his heavy machine, with the aid of timber pads, over quaking muskegs from the track to the far end of the ditch survey. With only two helpers, much patience and good judgment were essential. They back-packed diesel fuel and lubricants, wading knee deep - sometimes waist deep - to the machine daily. They lived in bunk cars set out on lonely sidings. Mrs. Williams shared their isolated conditions; during the long working days, 7 o'clock to 18 o'clock, she was entirely alone but for her beloved dogs.

Summer was the season to "make hay"; holidays were not countenanced. Men went out to jobs in the spring and remained until freeze-up - take it or leave it. The rate for common labour was 30 cents an hour and charge for board was $1.00 a day.

One of the foremen, fed up with not having feminine companionship, devoted his winter vacation to the specific purpose of hunting for a bride. On his return, he was quizzed about his venture. He replied, "With more time I might have done better, but she is young and she is quiet".

Operation

The summer schedule was two regular trains; a passenger train, known as the "Muskeg Limited" and a wayfreight, operated from The Pas to Churchill and return weekly. They ran over one subdivision a day and tied up overnight at Wabowden, Gillam and Churchill, respectively. In addition, train-fill and ballast materials were distributed by work trains. There was keen competition by crews for the latter assignments as long hours daily, possible with comparatively little darkness during mid-summer in the North, enabled these men to amass lucrative pay cheques, without over exertion. As the engineman and fireman could spell one another off, and the conductor and brakemen could do likewise, especially when the cars were being loaded in the pit, this was accepted practice in order to gain the maximum progress during the open season.

Speckled trout were caught in the Kettle River and Limestone River while cars were being loaded in the adjacent pits. Many of these delicious fish were wrapped in moss and consigned to the fishermen's homes in Winnipeg and other terminals, depleting the rivers' stocks seriously.

A dispatcher's office was opened at Gillam to control the summer activity and also the annual grain traffic to the elevator at Churchill. There were station agents at Wekusko, Wabowden, Ilford, Gillam and Churchill. The latter agency was a 'plum', with heavy express commissions on shipments of fur by the Hudson's Bay Company to eastern markets and auction rooms in London, England. During winter, train dispatching was handled from Dauphin through the H.B.R. operator, Oren Clearwater, at The Pas. On the side he was proprietor of a business selling and servicing radios, with a captive market comprising most of the railway employees and others along the Bay line.

George Brown supervised the shovel crew loading in the pit and movements of trains in and out. The two roadmasters, H. P. Fuller and Tom Rafter, took charge of the distribution and of the extra gangs lifting and surfacing the track.

Tom was a great character, functioning as both roadmaster and B. & B. master very efficiently; he had a grand sense of humour. Unfortunately, he had one leg torn off when a work train, backing from the Limestone Pit, collided with Tom on his track motor car but he quickly recovered and got around with the aid of an artificial

limb. Tom was regarded as chief magistrate of Gillam and country thereabouts. He was consulted on a variety of matters and had many amusing anecdotes to relate. Once he told us, "On a hot mid-summer day, when inspecting the section gangs working in the Barrens, I stopped and walked to a section foreman's dwelling. The door was wide open and there, lying upon the bed, I saw the lady of the house completely nude. This had the appearance of a trap, so I turned about and went on my way".

Bill Woodcock, master mechanic and locomotive foreman, a big powerful man, was another Gillam character. He was also a first-class officer, with a bent for practical jokes. It was well to be on guard when Bill was near. One of his helpers wore boots with wide sole welts; Bill nailed them to the plank floor of the shop.

The passenger excursion from Winnipeg to The Pas and Flin Flon through to Churchill was a highlight each August. It grew to be very popular, particularly with our neighbours of the United States. Some years an extra train was operated originating at Regina. Canadian National passenger department officers did a topping job of organizing these special trains, so there were no dull hours. I was assigned by Major MacLachlan to accompany one, using his business car 78, with my wife and daughter as guests. We had a delightful trip, including a bang-up dance at Churchill and a visit to Fort Prince of Wales across the harbour.

Another enjoyable assignment was to host a party of hunters, a judge and three lawyers from Memphis, in a business car on the rear of the wayfreight and set out on sidings near good fishing and shooting. They had their own coloured gentleman, Willy, along. He was an excellent cook and knew the wants of his masters. At a shout, "Willy", he responded with a tray of drinks without delaying to enquire what was wanted. Willy was given every consideration; he felt the northern fall temperature to be cold, so during an overnight stop at Wabowden, Willy was taken to the Hudson's Bay store and outfitted with a blanket coat and other warm clothing.

The rear end brakeman, Tommy Jack, had a fund of wondrous tales. Our guests suggested they would like to entertain the train crew so this was arranged during a stop on the main line to unload a car of cedar required to replace a culvert. Willy produced a huge turkey, roasted to perfection, with dressing, including green peppers. It was a truly gourmet repast and entertainment - relating extravagant accounts of northern exploits. Then, in due course, the train proceeded towards Gillam. This was in the "good old days".

Atikameg Lake, Mile 17

On their return from the north, we invited the Memphis sportsmen to our log home by Atikameg Lake for the week-end to fish for lake trout. If one suggested, say about 3 o'clock in the afternoon, "We will have trout for supper", it was reasonably certain that an hour of trolling would result in a catch and fish on the table by 6 o'clock. The average weight was from three to five pounds, but lunkers of up to thirty-seven pounds and more have claimed the first prize of $1,000.00 at the annual Flin Flon Trout Festival. This lake is more commonly spoken of as Clearwater Lake because of its extraordinarily clear water to a depth of 200 feet. During spring and fall, when the water is cold, trout may be taken readily near the surface, but in the heat of summer it is necessary to fish deep.

Jimmy Moors was the builder of the original part of our home, close to the shore overlooking the expanse of some fifteen miles to the far side of the lake, entirely uninhabitable. As I had known Jimmy from 1911, during construction of the G.T.P. Coal Branch southerly from Bickerdike, it was easy for me to make an agreement with him to use this building for as long as I wished, on the understanding that when I did leave and had no further use for it, any additions and improvements I might make would be Jimmy's property.

We added a verandah, kitchen and two bedrooms and, with Pete Campbell's help, built a great stone fire-place in the living room.[50] Helena and Babs developed a picturesque flower garden, with flag-stone

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[50] Pete was a philosopher with a staunch belief in good fellowship. He happened to be in town when the Major was on vacation and, as he had had severe warnings, the problem was to get Pete out before the boss returned. Bill Traquair, of the railway police, knew all the 'joints'; I appealed to him for help. Together with H. McMurchy we found Pete in bed at his favourite resort; he took one look at us and pulled the sheet over his head. If only we had taken the undertaker along, Pete would have really thought the "Last Trump" was at hand.

walks. It was a very comfortable log home - summer and winter. Helena, Babs and I, and also John for part of the time,[51] had three very happy summers there, and some winter months too, with a large polar bear rug in front of the open fire and two magnificent caribou heads, one Bushland and one of the Barren Lands, set in the gable ends.

In my opinion, there is no more seductive setting for sheer enchantment than a polar bear rug in front of a log fire and hot rum, with lemon juice and honey, at hand. The other extreme, is a tropical crescent-shaped beach, with overhanging coconut palms and lazy waves lapping the sand under soft moonlight. Lena and I have experienced both.

The family's arrival for the first summer was by the way-freight, which had a passenger coach in the consist. In conversation with the conductor, Helena spoke of her love of dogs. On his return from Churchill, the thoughtful fellow dropped off a beautiful black husky pup, with a white chest, paws and tip of his tail; one of a litter belonging to a trapper "Barren Lands' Smith". All was strange to this young dog; he had seen no one other than Smith - women were especially strange beings. When I arrived Saturday evening I found Helena and Babs trying, in shifts, to console the home-sick pup. He howled day and night. They named him Jack and he slowly accepted them; he developed to be a magnificent animal. He just tolerated me, but would have nothing to do with anyone else. Lena took long walks through the bush with Jack and no one would dare approach her; and, on train days, Babs would take him to the station to be admired.

Fine Sundays, we would go by canoe about nine miles to a beautiful secluded little beach where we could bathe and picnic to our hearts' content. On a few occasions, however, a storm struck and it was no easy matter to cross the open expanse with high waves running. I was relieved when we made it to our dock and thankful to the 'Powers'; grateful also for being blessed with a lovely wife who was never jittery.

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[51] Mr. Dixon kindly offered John summer employment as chainman with Resident Engineer Ostrander on rehabilitation of the line to Prince Rupert, subsequent to the disastrous floods by the rampaging Skeena River. John set off on his own from The Pas; he mailed us a card from Jasper, saying he had hired a saddle horse, for a ride during the seven hour stop to change from the main line train to the train for Terrace.

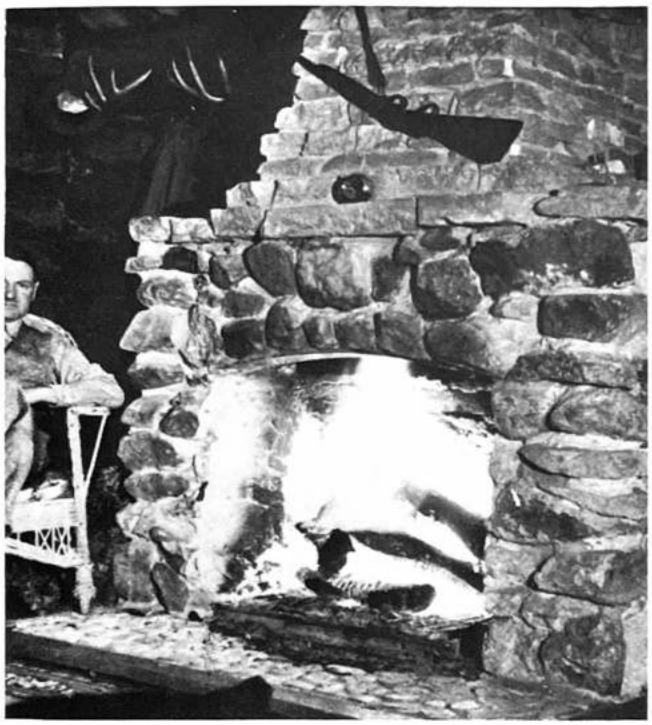

Photo 85. Blazing logs plus rum, lemon and honey generate glowing warmth, sweet aroma and good companionship.

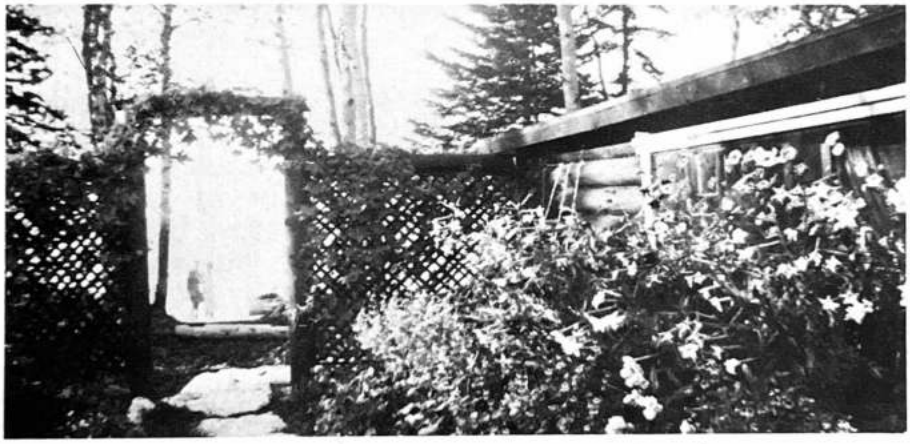

Photo 83. Our home at Atikameg Lake, H.B.R. 1934/38

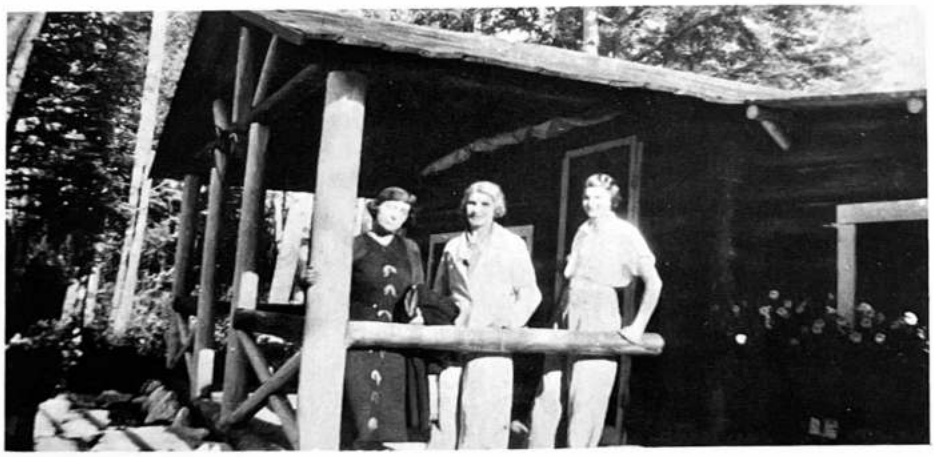

Photo 84. Helena centre and Eira on the right.

There was only one farmer along the Bay Line. He and his large family endeavoured cultivation and raising cattle at Mile 15, not far from us, and supplied fresh milk and cream, as well as wild fruit, in season - strawberries, raspberries and blueberries, a quart tin for fifty cents; a delicious breakfast food.

It was in this environment that the gentlemen from Memphis visited us in the fall. After a congenial evening with the heat from the fire-place and appropriate refreshment, the question was discussed about bedding down. After some opposition from Lena, I allocated the elderly judge to a combination couch-bed facing the glow from the fire, and the others about the room. The judge put on a fur cap and eased into bed; Lena and I bid them good-night and retired to our room. It was not long before we heard a crash - the judge had gone through the improvised couch to the floor. Lena nudged me, saying, "I warned you". All was soon straightened out, however, to find sleep, as only possible by northern waters.

Monday morning I went to the office at The Pas and left Lena to care for our friends. She piloted them to our special beach where they stewed a pot of mulligan with everything possible in it and had a jolly day. In the evening, Lena described it to me, saying, "They had the largest bottle of Johnnie Walker Black Label I have ever seen".

Fall was a glorious season, with crystal clear atmosphere and brilliant foliage, and frosty nights tamed the obnoxious insects; also, the haunting music of loons on the lake and overhead, vast flocks of geese in "V" formations, preparing for their long flight to southern wintering grounds; squirrels and other animals abounded, hoarding food to tide them over until spring. To me, there was a tinge of sadness, however, for my wife and children would have to leave for Winnipeg to resume school and I would not be with them until Christmas, and, then, only for a few days.

Bill Williams, C.N. superintendent of work equipment, Stan's father, made periodic inspections. He was a 'hale, well-meant' fellow. Before entering the Major's office, he would throw his hat in; if it did not bounce out, Bill followed. He was a good shot and enjoyed the sport. I took him, late one evening, by track motor car to Atikameg Lake; he bagged a brace of grouse. On arrival, I lifted the car from the track and we walked about one-quarter mile to my lake side home. I placed the birds on the doorstep, reached into my pocket for the key, opened the door and

leaned down to pick up our prospective supper. It had vanished; there in the fresh snow were the tracks of the thief, a husky dog; it had made off with the grouse without a sound.

So, we had to settle for plain vegetable stew, but we had a superb supplement. While I commenced cooking in the kitchen, Bill kindled logs in the fire-place and poured a couple of shots of rum. We finished supper with the remainder of the bottle in the coffee pot and moved in by the fire-place to relax on the polar bear rug where we were overcome by the pleasant heat, inducing sleep. I have many happy recollections of our great open fire-place and the polar bear rug.

Winter Train Service

Normally the train movement to fill the Churchill elevator with grain would be completed by December and the weekly passenger service terminated at Gillam, excepting each third week when it ran through to Churchill. During January through to March, there was a busy freight haul to Ilford of supplies; equipment and fuels destined for furtherance by tractor trains on winter roads to Gods Lake Mine and the relative hydro generating station being developed on Gods River, also general freight for the settlements at Oxford House and Shamattawa.

The "Muskeg", every third week, was a unique train, consisting of a steam locomotive, baggage cars, day coaches (the leading one for Indians) and sleeping cars. No dining car was in the consist; the news vendor, a famous character by name of Clarence Messett, cooked and served meals in a section of a day coach. The menu was restrictive but satisfying.

Three or four fur buyers made this trip throughout the winter for the Hudson's Bay Company and independents, of whom Fred Kerr of The Pas was the most active. They boarded the train as though they were setting out on the trail, with sleeping bags and grub boxes, to avoid the expense of berths and meals. They also felt more secure with their own provisions.

These traders made purchases at the overnight stops, Wabowden, Gillam and Churchill, and at many intermediate sidings as well as at any point along the right-of-way where a trapper might emerge from the hinterland and flag the train down. A baggage car door

was opened for the trapper to climb in with his fur for sale. The pelts were spread on the floor for inspection by the traders who made appraisals and submitted confidential bids, on little chits, in competition with each other. A bid might be accepted or rejected. If accepted, considerable amounts in cash were paid, there and then. On completion of the transaction, the trapper might jump off and drive with his dogs back into the bush, or pile his toboggan and dogs aboard and ride to visit some pal along the line. The conductor then signalled the engineman to proceed, who whistled off and resumed the run. All this was most colourful and intensely interesting; irregular with respect to operating schedules, but accepted service to the far-flung customers of the Hudson Bay Railway.

Arrival at Churchill was seldom before 21k or 22k. Reg Henderson, the agent, would be on hand to unload express and baggage and to bill our south bound items to leave the following morning, at 7k. Although wind chill and other psychological terms had not been devised for excuses by some persons reluctant to face the elements, nevertheless, the combination of low temperatures and high winds was there and had to be encountered.[52]

Piercing winter winds from the north-west shriek across the ice-bound sea and over the rock promontory, between the Bay and harbour, to strike the station, roundhouse and service tracks, whipping up snow crystals to cut exposed flesh and cause strong men to turnabout to see from under the hoods of their parkas. If the passenger train remained stationary overnight, it would certainly freeze-up. In order to maintain steam pressure and prevent seizing of the car journals, the mechanical department watchman moved the train back and forth, hourly throughout the night, to ensure heat in the cars and that they could be moved without delaying departure in the morning.

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[52]Survey parties on location of the line, Amery to Churchill, worked outside every day, Monday through Saturday, during two winters except when a blizzard blinded vision through the level and transit. Leaving camp in the mornings, accompanied by low temperature and strong wind, one thought it was "damned cold", but said nothing.

To marshall freight equipment which had been standing, often took hours before bearings were loosened so that wheels would not skid along the rails but turn freely to guard against causing flat spots. Other than the watchman and carman, there was no mechanical staff resident at Churchill. The roundhouse, machine shop and boiler room were shut down for the winter season.

In January, George Brown, my son, John, and I took the Muskeg Limited to Churchill. Before turning in for the night, we visited an Eskimo igloo and crawled through the restrictive entrance to be greeted by the patriarch, who inspected us critically and, indicating John and me, said, "You are not dressed", although we were wearing stout woolen coats. He then looked at George, who was in a fur coat, and said to him, "You are OK". We had a pleasant hour with the friendly Inuits and they were delighted to take candy that we happened to have.

Another winter night I stepped off the "Muskeg" and walked into the station, passing a team of powerful huskies hitched to a carriole, occupied by a lady wearing a magnificent parka of caribou skin, trimmed with white fox. The dogs and lady were all resting quietly with backs to the wind. On entering the station, I recognized Big Baptiste paying Reg Henderson, the agent, for an express shipment. After the customer had left, I remarked, "Baptiste has his dogs and lady well trained", to which Reg replied, "Yes! and you would be damned well trained if you had the lesson she received last week". He then explained that after a party in the establishment across the harbour, the revellers had dozed off. Baptiste opened an eye and saw one of the girls going through his friend's pockets. This might be condoned to a stranger, but definitely not to a friend. Baptiste had a laudable code of ethics.

A Derailment in the Barrens

At the station the thermometer registered 51 degrees below zero, Fahrenheit, with relatively light wind at departure time for the Muskeg Limited. Nothing unusual about this; the business car was on the rear of the train. About thirty miles out, Tom Rafter and I were observing track conditions when suddenly we felt bump, bump, bump! Wheels had jumped the rails and were running over the ties; the crew quickly realized the situation and brought the train to a stop before any cars rolled over. Although only the three rear cars were on the ties, it was not a simple derailment which experienced train crews could rectify with climbers carried in a baggage car.

The cause was obviously a broken rail brought about by an internal fissure and extremely low temperature. Wheels and journals were shattered into dozens of fragments. It was no pretty picture - a passenger train stranded on the open tundra without a stick in sight, except a few dwarf willows, fifty below and no assistance of any consequence closer than Gillam, 150 miles to the south. Maintaining steam pressure to keep the locomotive alive and heat the passenger cars was the immediate concern. The engineman, Fred Miller, number one on the seniority list, had been operating north of The Pas since the first tracklaying and took it in his stride. Gene Pilote, the conductor, was an old-timer and Tom Rafter was there too. Nothing phased them.

An emergency telephone was quickly connected to the wires of the pole line at the edge of the right-of-way, to notify The Pas, Gillam and all concerned. Bill Woodcock, in charge of the mechanical facilities, loved emergencies to relieve routine duties. He soon steamed north with the auxiliary, wrecking crane, spare trucks and an extra gang of trackmen but, under the circumstances, it was not advisable to exceed twenty miles an hour, so it was dark by the time he arrived, with no temperature moderation.

Bill kept up steam and operated the crane personally. Fortunately, it was not far to the water tank at Mile 474 and, of course, he had brought a car of coal from Gillam. The cars with damaged trucks had to be lifted clear in order that the track, which had been torn up, could be repaired and new trucks placed under the car bodies. Tom, with his Irish temperament and understanding of men, kept up morale for three days, working in the open, handling steel in spite of the fact that the wind sprang up. All did a splendid job under conditions which must be experienced to realize their severity.

Churchill - Exports and Imports

To date, imbalance of exports and imports presents a serious obstacle to the potential development of the Hudson Bay Route. Grain traffic predominates. It originates from Saskatchewan, as far west as the Alberta boundary,[53] and from areas of Manitoba

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[53] West of the Saskatchewan-Alberta boundary, rates are more favourable to Pacific ports.

which are not tributary to the Great Lakes. One or two experimental shipments of cattle were made through Churchill to Europe but were not continued. International Nickel now consigns some metal from Thompson via this route.

Imports, including liquor and wines from Scotland and Southern Europe for the Manitoba and Saskatchewan Provincial Liquor Commissions, and glass from Belgium, are comparatively very small. This, however, necessitated bringing in a few unionized stevedores each season from Montreal and a railway extra gang was assigned for about one month to load these goods for furtherance by rail. The Major usually sent me to be around the Port at the time. It was a change and interesting.

The S.S. Nascopie, the famous Hudson's Bay Company ship, called annually with cargo and to take on cargo for other northern posts. I was invited aboard to dinner once or twice and had the privilege of meeting her renowned Arctic navigator, Captain T. S. Smellie, O.B.E., and some of his interesting passengers - doctors, scientists, R.C.M.P. and H.B.C. officers - journeying to or from posts in the High Arctic.

Trapper Friends and Whale Hunting

I cultivated a lasting friendship with two professional trappers who based on Churchill. Joe Chambers was at Nelson when the Silcox location survey party emerged from the muskeg in August, 1914. Joe, a native of Ontario, arrived as a ship's carpenter, then decided to make his future in the North and, after the aborted construction at Nelson was suspended, he moved inland to Landing River, Mile 278 H.B.R., where he lived with his wife and infant son, until, by stages, he worked northerly alone and built a very habitable base by Goose Creek, a few miles south of Churchill.

While crossing the Goose Creek bridge on my little track motor car one summer evening, Joe was sitting in front of his home, so I stopped and shouted, "Joe, have you had supper?" and was invited in. After a little conversation, Joe laid the table, much to my surprise, with cold roast swan which had recently been careless in flying too close over Joe's dwelling, tempting him to bring it down. It was delicious. There was no real darkness and we sat talking far into the night. Joe was a recognized specialist in trapping beaver.

Finally, we rolled into Joe's top quality double bed. This impressed me to remark, "A mighty fine bed, Joe", and he replied, "Yes! I have loaned it out for four honeymoons".

A week or so later, Joe ran into me by the water-front. He came right to the point with, "I wish you would get to hell away from here. I want to have a canoe taken down the track by the sectionmen, but they won't do a thing for me while you are around!"

Joe brought up his son Jim, at Goose Creek and was very kind to him. Once a polar bear came sniffing about their home; Joe was outside and Jim was inside with the armament and hesitant to open the door for his father.

During World War II, the Armed Forces encroached on Joe's trap-line, disturbing the ecology; Joe claimed substantial compensation and won. He was a match for any "Brass Hat". It was a refreshing break, some time later, when Joe roared by the receptionist and into my office at Winnipeg to bring me up-to-date on the latest excitements of his realm. He was enroute to visit his brother, proprietor of a general store at Kakabeka Falls.

The old trapper has gone to his final hunting grounds, but quite recently his son, Jim, when passing through Winnipeg to visit his uncle at Kakabeka Falls, proudly told me that he was permanently employed in the power house at Churchill, and had been presented to Her Majesty, Queen Elizabeth II, when she visited the Port.

My other friend, Henry Johnson, was younger. He had a first-class outfit for hunting white whales (beluga) consisting of a canoe, 12 hp outboard motor, .270 calibre Savage rifle and harpoon. These mammals range from ten to fifteen feet long, weigh half a ton or more and were abundant in the harbour during July and August. To be harpooner for Henry, while he manoeuvred the canoe in pursuit of the fast swimming, agile prey, brought out man's primeval instincts for the chase and co-ordinated skills of both members of the team. Standing in the bow, the harpooner had to balance in unison with each sharp turn of the canoe following the elusive whales, swimming singly or in formation up to six abreast, at times in choppy sea.

Following a successful strike, the float, a sealed four gallon oil can, attached to the harpoon by a line, had to be thrown overboard to guard against the possibility of the comparatively light craft being capsized. The whale would then 'sound' (dive), but the float would indicate its whereabouts until the whale was obliged to surface for oxygen. In the meantime, the harpooner took up his rifle in readiness for the target - the head - not an easy mark from a bobbing canoe; a shot elsewhere would merely knock off blubber. The carcass was then retrieved with aid of the float and line and towed ashore to be cut up for dog feed. Barrels of this were stored for future use, in the interval becoming an odorous mess, but nevertheless high in vitamins.

One beluga was awarded special distinction as a specimen for scientific research by Dr. Crile, a surgeon from Cleveland who was endeavouring to pursue a theory with respect to the weight of thyroid glands in relation to the total weight of the relative animal. He had previously come to some conclusions from examination of African species, and journeyed to Churchill to follow this up with northern mammals.

The Doctor was accompanied by his wife, who recorded notes, and a technical assistant. As it was a V.I.P. party, the Major instructed me to host them in the business car. During the north-ward trip, I learned the Doctor's requirements and offered to procure a white whale for him, with the aid of Henry Johnson. We had a successful hunt and duly presented a large specimen, which was dissected with amazing skill and speed. The glands and other parts were carefully weighed and the thyroids were preserved and shipped by express to Cleveland. A polar bear, wolf, fox and some smaller Arctic animals were similarly examined.

Mrs. Crile was author of the interesting book, "Jungle Laboratory",[54] an account of their studies of African animals, with detailed description of dissecting and weighing an elephant, part by part, with primitive means available in the bush.

On another occasion we took Bill Williams out. As passenger sitting in the waist of the canoe, he derived great pleasure from the experience; and another time my son John, a keen sportsman, accompanied us.

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[54] Grace Crile, Skyways to a Jungle Laboratory; An African Adventure (New York: Norton, 1936).

Photo 86. Churchill Harbour, hunting beluga (white whales). John with harpoon, Joe Chambers left, Henry Johnston far right.

Photo 87. Eskimo in his snow-house with a soap stone oil light.

Photo 88. Racing dogs on the Saskatchewan River, The Pas.

I endeavoured to interest the Canadian National Manager of Passenger Traffic to advertise this sport to attract hunters and fishermen to the Bay Line to augment revenues, but the suggestion was not acted on. A plant was established to render oil and ground meal from belugas and provide part-time livelihood to local Indians and Metis who eked out an existence, living in hovels on the 'flats', often addicted to alcoholism. Payment was at the rate of $1.00 a foot, nose to tip of tail. Unfortunately, this business venture failed.

It is reported now that what was once genuine sportsmanship, has deteriorated to slaughter of the harmless belugas being herded, with a fleet of canoes, into shallow water to be indiscriminately shot by tourists - not sportsmen - churning up a bloody mess for a fee. In the interest of conservation and decency, legislation is being drafted to prohibit this senseless practice and to encourage photographic safaris.

Christmas at The Pas, and Other Recollections

By the Fall of 1937, Eira was living in residence at the University of Manitoba and John was at Pickering College, Newmarket - so Helena chose to stay on at Atikameg Lake with her dog, Jack, and a section foreman's daughter for company, until late in November, when we were able to obtain a furnished suite in The Pas. We had wonderful week-ends. There were no others nearby, all was so still and peaceful with new snow on the ground and boughs of evergreens, except during some storms, which were music to entrance us snug by the fire-place.

On a Sunday ahead of Christmas Day, I accompanied Lena to the magnificent Roman Catholic Church. It was an impressive service, including an admonition to the congregation not to become inebriated before attending midnight mass. When walking home, I mentioned this to my wife. She replied, "I have never heard such a thing before". However, there were many happy folks but we encountered no real drunks. Our children joined us for the holiday, as enjoyable a celebration as any we have had.

The blending of old-timers of "Le Pas", and the more recent "The Pas", promoted hospitality. Everyone visited everyone and, on New Year's Day, there was a carefree round of kissing. J. A. and Mrs. Campbell were among those who called to wish us well. Mr. Campbell was a distinguished specimen of manhood. When leaving,

about 3 a.m., it was clear and cold; he spread-eagled on his back, to impress his stature in the snow. He had an esteemed law practice and was a former member of parliament. The station of Jacam, the first north of Gillam, was named for him.

Most of the other station names commemorate the early navigators searching for the North-west Passage, and the ships they sailed - Munk, Ponton, Button, Back, M'Clintock and others; also, men who dedicated their lives to the development of the Hudson Bay Route and branch lines constructed from the "Trunk" to serve the mining, forest and fishing industries in Northern Manitoba. Research of the origin of these place names is indeed fascinating and, in itself, would form an historical treatise.

A well known, big hearted person, "The Diamond Queen", who would never turn away a hungry traveller, with money or without, from the stopping place she operated at the edge of the railway right-of-way where the road turned off from Wekusko to Snow Lake, is also part of the legend of the North. Heaven help anyone who annoyed her; she could really pronounce their pedigree in no uncertain terms. On the other hand, "The Diamond Queen" carried on conversations in a cultured manner. There were numerous stories about her past. Apparently, in her youth, she had been a music hall artist - Sophie Mae - and close associate of a prominent mining magnate in South Africa. It was said that, when going to The Pas one day, "The Queen" occupied a seat on the train with a clerical gentleman she was acquainted with and remarked, "No doubt you have heard many tales about me, and some may be true. I had two so-called faults, but do not worry, old age has resolved one and prohibition the other". Mrs. Lacroix has gone on the final journey we all will have to take; sad to say, there is no station to commemorate her charitable character.

Photo 89. Eskimo offshore near Churchill, with a premature young seal.

Photo 90. H.B.C. York Factory, at mouth of Hayes River. Circa 1913.

17. FOUR PROJECTS, MINOR NONETHELESS INTERESTING

Hesquiat Harbour to Estevan Point

It was a clear cold evening, about thirty below, when George Wardrope, transitman, Colin Morris, rodman, Helena and I boarded the train at The Pas, elated with the prospect of travelling into spring - green grass, flowers blooming and all - at Victoria.

A few weeks earlier, Mr. Dixon had been at Ottawa and some officials of the Department of Transport mentioned in a general conversation that, by reason of the site of Estevan Point lighthouse and radio station on the west coast of Vancouver Island being exposed to the full force of the Pacific Ocean, it was extremely difficult, at times hazardous, to put equipment and supplies ashore there. This often caused long delays, tying up the supply ship for days awaiting improved weather conditions. Further, the Department engineers had studied the situation, without solution. Mr. Dixon had volunteered to loan an engineer, hence, my assignment.

As yet, travel by passenger train was very enjoyable, with excellent sleeping accommodation and dining car service; spotless linen table cloths, polished silver, glass and china, with a wide choice on the menu. The mountains present so many entrancing vistas through the Yellowhead Pass, the Thompson Valleys and Fraser Canyon, then one breaks out below Hope into the wide Fraser Valley with spring awakening. The first new growth we observed is the spring tonic of bears, the pale green of skunk cabbages sprouting from ditches parallel to the track. Coming from The Pas, this sight was indeed exhilarating.

Then, the soft moist atmosphere of Vancouver; the transfer to the Princess Joan - an honest-to-goodness passenger ship, with excellent services aboard - not a ferry as of the present era, for the trip of all trips through Active Pass and by the Gulf Islands, to dock in the heart of Victoria under the shadow of the world renowned Empress Hotel, covered in ivy and creepers, with wallflowers blooming in beds along the front and roses in the side and back gardens. No wonder Rudyard Kipling described Victoria to be the most beautiful of all cities!

George and Colin registered at the Strathcona, while Helena and I checked into the Empress, with a room overlooking the inner harbour. In the mornings gulls would peck at our windows until we opened them and fed them pieces of toast from our breakfast tray.

Four Projects, Minor Nonetheless Interesting

Murray Hill had advised me to call on Norman Fraser, C.N. operating officer on the Island, who had entrée to the offices of government officials and shipping agents. Mr. Fraser introduced me to the right people and to the wholesale supply firms, greatly assisting me to purchase camp equipment and supplies. St. John Munroe, Division Engineer, was helpful in hiring personnel to fill out the survey party and in obtaining coastal charts of the area which we were to study.

The best part of a week was spent assembling everything at the C.P.R. freight shed for shipment to Port Alberni and thence via the S.S. Maquinna to Hesquiat.

As it was expected that the project would require up to two months, it appeared that the fine room in the Empress would be too expensive for Lena to stay in while I would be away. She made numerous enquiries, discovering that accommodation available was either high class and expensive, or shoddy and cheap; there was no nice intermediate. Therefore, without much thought of success, we approached the manager of the Empress. He solved our problem by offering Lena a room, not a spacious one in the front, but quite a comfortable one overlooking the garden at the back, at a monthly rate of $60.00. We, of course, were delighted. The next morning I was away, carefree, knowing my wife would be well looked after.

As to be expected, the train journey to Port Alberni was leisurely, typical of Vancouver Island at the time. The route was through stands of gigantic timber. It was necessary to put up at the hotel overnight, to await the arrival of the S.S. Maquinna, which sailed every third week from Victoria, to provide general cargo and passenger service to settlements along the west coast. This was frequently a notoriously rough passage, exposed to the unobstructed swell of the Pacific. I will confess to losing a meal or two which was the reason most passengers for northerly destinations embarked at Port Alberni; it also saved time.

It was a bright sunshiny Sunday morning when we approached Tofino, passing the cannery manager's beautiful home on a grassy point, with garden ablaze in spring flowers. A miner at my elbow, as we stood near the bow easing to the wharf, turned to me and said, "That fellow must have a pull with God". Another passenger was Major Codville who had been 2/ic 144th Bn. during 1916. He was now grub-staking prospectors and living in Victoria; it was a pleasure to meet him again.

Four Projects, Minor Nonetheless Interesting

It was after sunset when the Maquinna hoved to off Hesquiat, just an Indian village, without a wharf. A crew came out in a large dug-out canoe to take off mail, supplies and passengers. We, together with our outfit, were dumped on the shore to pitch camp in the dark. This was no easy task amongst the huge timber and dense undergrowth, growing right down to high tide mark.

Hesquiat Harbour provided reasonably good shelter for shipping, so, after reconnoitring the intervening distance, about ten miles, to Estevan Point, it appeared to me that freight could be discharged ashore at the harbour and transferred by a narrow gauge railway to the lighthouse and radio station on the Point, over one hundred feet above sea level. The whole area, except for a clearing about the buildings, was densely timbered, mostly cedar, six to eight feet in diameter, with many windfalls up to two hundred feet long on the ground and salal growing ten feet high; tough and impenetrable without cutting a passage with a machete.

Having been advised that the Indians were touchy about intrusion of strangers into their lands, I endeavoured to call on the Chief before commencing to cut a survey line. He was out at sea fishing, however, so I called on the Roman Catholic priest to explain the situation. He suggested that the work proceed and he would inform the Chief on his return.

At noon the Chief and two councillors, in formal attire and "blood in the eyes", walked into camp. Seeing them approach, I waited at the entrance to the cook tent to greet them. The Chief, with great dignity, addressed me in his native tongue, with one of the councillors interpreting, demanding an explanation for disregard of Indian property by cutting a survey line. I replied, through the interpreter, that I had endeavoured to call on the Chief to advise him the reason for the survey but, as he was at sea, I called on the Priest who had kindly offered to inform the Chief when he returned from fishing. Thereupon, the Chief, in perfect English, said directly to me, "That's all I wished to know". His hereditary position having been acknowledged, he was appeased. I invited the three into lunch and, after all were satisfied, hired them, there and then, to be axemen.

We developed friendships as the work proceeded and I guided the axeman in the direction to cut the line, with frequent changes in the course. The dense salal and huge windfall prevented more than about seventy-five feet without establishing a 'hub-point'

where the transitman would set up to measure the angle between adjacent courses. Sometimes the hub would be in such a position that the transit would have to be set up with the tripod legs spread to the limit to enable sighting beneath a windfall; the next hub might be on top of a huge stump so as to sight above nearby obstructions.

George would come up with his instrument, look at the hub site and exclaim, in broad Scottish accent, "How does the son-of-a-bitch expect me to set up here", knowing full well that the Indians and I were just ahead but not visible through the undergrowth. This would happen dozens of times each day, frequently in pouring rain; the annual precipitation is 120 inches. George was followed by the chainmen, measuring the lengths between hubs and the accumulated distance.

Each evening, sitting in our small tent with the light from only a couple of candles, we were busy calculating the positions by latitudes and departures of the numerous short courses run during the day in order to progressively plot a map of the survey. This is exacting work, even under good lighting conditions, but with candles, it can be exasperating, especially with the extreme humidity. Our remarks to one another were not too polite. When undressing at bed time, we placed our clothes in our sleeping bags as we crawled in, so that they would not be uncomfortably damp to put on the next morning. Axes and saws became coated with rust, even under cover; also, much care had to be exercised to guard against food and cloth becoming mildewed. Outside, large juicy slugs, up to nine inches long, slithered about and squished if one inadvertently stepped on them.

When the clouds dispersed and the sun emerged, however, the landscapes and seascapes were indeed rewarding. They dispelled the annoyances and, too, there were local features of special interest.

The first missionary who endeavoured to introduce Christianity to Hesquiat imported some cattle; it seemed his efforts were not appreciated and he lost his life. The cattle went wild. Their descendants have adapted to the local environment and run free, taxing the skill of hunters. Johnny, one of the Indian axemen, did not show up for work one day. In explanation he said he had been hunting wild cattle. That evening I met the Reverend Father and mentioned that Johnny had been lucky to shoot a wild cattle,

whereupon, I was amused with the exclamation, "Wild, hell, it was one of mine". Next day, by the lunch fire, I joshed Johnny about shooting a domestic animal. He laughed and said, "The damned thing was too far from home, anyway".

The Priest had a unique method of disciplining his flock. He was no mean engineer - both mechanical and electrical - applying his knowledge and energy to harness the fall of a brook and generate hydro electric power for lighting his church and vicarage; and the homes of some members of his congregation. If any of them went berserk from home-brew, however, the Father cut off their lighting for an appropriate time.

Hesquiat natives were not as expert axemen and woodsmen as I would have expected them to be but this was understandable as their realm was the sea, where they were superb. On occasions, the sea would be so rough that the Maquinna was almost hidden in the troughs between mountainous waves and the next minute she would ride over them with her propellers churning in mid air. These expert seamen would go out in a canoe and, just at the crucial moment, pull alongside the ship to receive the mail as it was let down on a line and the outward package was hoisted aboard. Although they had one or two power boats they appeared to have more reliance in their canoes, as their people had done for ages.

Whales were becoming scarce but we observed some spouting from time to time as they travelled parallel to the coast. The Chief showed me his old-time whaling gear and related legends about his ancestors' exploits whaling, fifty or more miles out to sea in open canoes, for days, to kill their quarry.

In the forest, I was shown a tall cedar which had a wooden wedge driven into it from the side. It was explained that before axes and saws were available, such wedges were driven to split off a slab with the aid of wind swaying the trees back and forth. Long, knot free, slabs may be easily split from cedar for building purposes.

Heavy precipitation and moderate temperatures produced extraordinarily rapid and dense growth. The attendants at Estevan Point lighthouse and radio station had a continuous struggle to maintain garden clearings from being overrun by native growth.

Four Projects, Minor Nonetheless Interesting

Summer was approaching when this survey was completed. George and the crew returned to Victoria via Port Alberni but I remained a few more days to review some features. The morning for my departure was beautiful, with bright sunshine reflected on the blue Pacific breaking on the shore-line at the toe of the one hundred foot high cliff. Eagles soared in effortless flight, prepared to zoom down to snatch unwary fish for breakfast. It was with some difficulty that I pulled myself away from the rugged, unspoiled magnificence.

A float equipped plane would soon be calling at Hesquiat Harbour to take me aboard for a direct flight to Vancouver. While waiting in the Chief's canoe, riding idly on the gentle swell and absorbing the warmth of the sun, I must confess to a wish that perhaps the aircraft might not come to take me from this little paradise of nature into the turmoil of modern life.

As I found it embarrassing, on landing, to be wearing tattered bush clothes and sharp caulks in the soles of my boots, I spent a couple of hours in Stanley Park while I waited for Helena to arrive, via the afternoon boat, from Victoria with more presentable clothing. It was a perfect evening, barely a ripple on the surface of Coal Harbour. An eight pulled out from the Rowing Club, with oars flashing in the sunlight and the crew in smooth unison - an unforgetable sight. Then the Princess Joan steamed slowly beneath the symmetry of the suspension bridge spanning the First Narrows, towards the C.P.R. pier. It was exciting to greet my wife, but she had a little sad news - our friend, Norman Fraser, had that morning suffered a serious stroke. A taxi rushed us to catch the C.N.R. train for Winnipeg. We both wished, so much, that circumstances might have permitted staying by the sea, with its back-drop of snow-capped mountains, where one can go boating, fishing, swimming and skiing - all within a summer day.

During our journey easterly, Helena told me how kind Mr. Fraser had been to her while I was up country. He had often called at the Empress to take her for long drives, through the country beyond the city, to see the beautiful gardens and fields alive with spring flowers - yellow daffodils, multi-coloured tulips and many others. Then he would take her to tea at his home overlooking the harbour, which he maintained with the aid of an elderly housekeeper, as he was a bachelor.

Photo 92. Hesquiat Village

Photos 93 & 94.

The church. And note huge timber cut to make way for a plank trail.

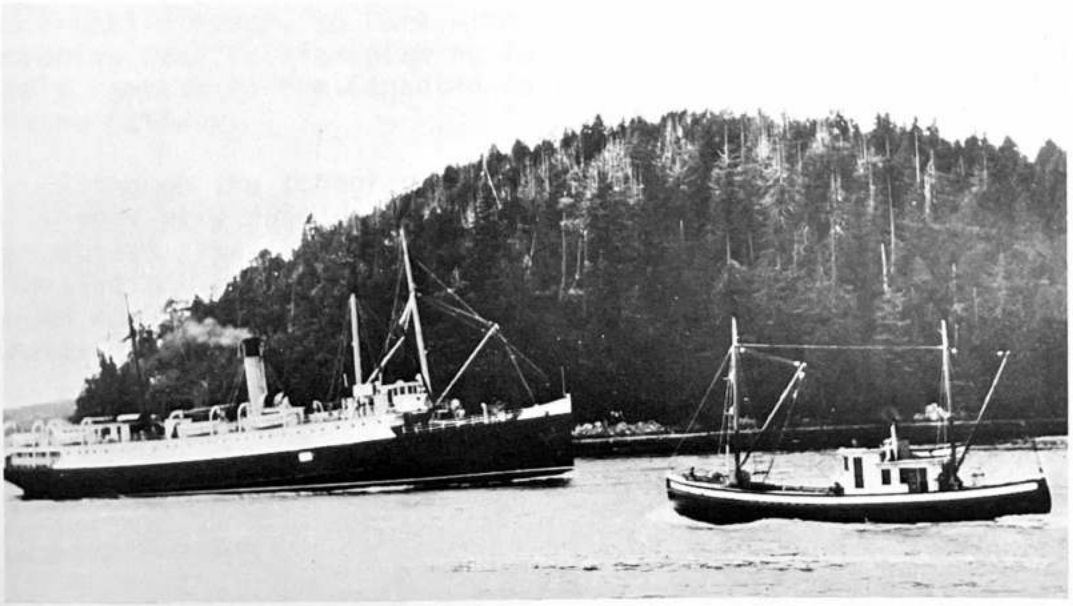

Photo 91. S.S. Maquinna.

Four Projects, Minor Nonetheless Interesting

In one more year Norman would have reached the normal age of retirement from the Railway. He had had an interesting and long career, commencing from the early years of the Canadian Pacific in British Columbia. He amused Helena with horrific tales of experiences during the woolley days when he was a telegrapher and also local magistrate. He had had a woman complain to him that her husband beat her up. She was seeking advice as to what she should do. Norman casually told her to "shoot the miserable devil". She took him seriously and did so. Then, as magistrate, it was his turn to worry, until a sympathetic jury exonerated all concerned.

Another tale, he told, was about Chinese labourers imported under contracts which included a clause - if any died during the period, their remains would be shipped home. At times, some of these men were killed by premature explosions during blasting rock and were blown to heaven or hell. Norman related, "In order to fulfill the terms of the contract, bones were exhumed surreptitiously from Indian cemeteries and consigned to China".

Submission of my maps and report completed this unusual mission for a railway engineer to be involved in. Although I was not aware of it at the time, it would not be long until another minor assignment would take me to Vancouver Island.

Youbou, via Franklin River, to Port Alberni

Concurrently with the opening of service to Vancouver, the Canadian Northern Railway inaugurated operation of a barge-car ferry between Port Mann, on the Fraser River, and Victoria. They also surveyed a location for a railway from the capital city, through the heart of the southern part of Vancouver Island, by Cowichan Lake and Franklin River, to Port Alberni in order to compete for the then lucrative traffic transporting forest products; until that time entirely captive to the Canadian Pacific's wholly owned Esquimalt and Nanaimo Railway.

Although the topography would scarcely be termed mountainous, it is very very rugged, demanding skillful engineering to obtain a practical line. Bridging is extremely heavy. The financial situation caused by the outbreak of World War I, August 1914, suspended work on this ambitious project. Track and operation terminates at Youbou, near the south end of the Cowichan Lake.

Four Projects, Minor Nonetheless Interesting

Shortly before declaration of World War II, Bloedel, Stewart & Welch (now MacMillan, Bloedel), operating the immense lumber and pulp mills at Port Alberni and vast timber limits in the area, approached Canadian National to extend the former Canadian Northern Line, as originally planned, to Port Alberni or, at least as far as Franklin River, where it flows into Alberni Inlet. I was assigned to study the feasibility of this suggestion.

Mr. Smith, Vice President of the gigantic forest complex, met me at the Hotel Vancouver. We drove to Horseshoe Bay to board the ferry for Nanaimo and thence, again in his auto, through the inspiring stand of giant timber, known as "Cathedral Grove", to Port Alberni where we had lunch. There I was shown through the mills and adjacent docks at the end of the long deep water inlet from Barclay Sound, providing access for exports to "Pacific Rim" markets.

Under a cloudless sky, a licensed woman skipper sped us in a small, but comfortable, boat, shooting spray from her bow high in the air, down the Inlet to Franklin River - an exhilarating trip - where we arrived in time for supper and overnight stop at the Company's logging camp. This was the hub of operations south of the Inlet. Logs were, as yet, being hauled over rail lines with steam powered locomotives. There were excellent examples of timber bridges constructed of raw material cut at, or near, the sites.

The following morning, Mr. Smith, his senior engineer and I shouldered light packs and set out to walk through the forest to Cowichan Lake, about forty-five miles. We made an intermediate overnight stop at the Nitinat River. Enroute, we discovered some evidence of the Canadian Northern location line as surveyed prior to suspension in 1914; a little blasting had been done in two or three rock cuts.

It appeared Mr. Smith wished to promote favourable relations. He dispatched two men to walk northerly from Youbou, packing thick juicy tenderloin steaks, fresh vegetables and Scotch whiskey, to set up a bivouac at the crossing of the Nitinat, in readiness for our arrival. These envoys were expert woodsmen. They established everything comfortably on the river bank opposite a crystal clear pool, about twenty feet deep; no finer swimming hole could be wished for, amidst towering Douglas fir and undergrowth of feathery huckleberry bushes and ferns.

Four Projects, Minor Nonetheless Interesting

As there was a fair walking trail from Youbou to the Nitinat River, Walter Moodie, C.N. General Superintendent, Sam Morrison, District Engineer, and St. John Munroe, Division Engineer, decided to join Mr. Smith and me at our bivouac. We had an enjoyable evening and conference in natural grandeur, eventually hushed to sleep by the music of water tumbling amongst rocks of the river bed.

The following day we all walked through to Youbou and drove to Victoria. It was obvious that B. S. & W. Ltd.'s concern was to obtain competitive rail service for its operations. The potential revenues, however, would not be sufficient to justify the capital costs for the heavy construction which would be required to extend the C.N. beyond Youbou, nor the annual operating and maintenance expenditures. So ended an informative and pleasurable exercise.

Functionally Duplicate Lines

Adverse economic conditions during the nineteen thirties precipitated studies with respect to the close proximity of some railway lines to one another, termed "Functionally duplicate lines". It was obvious that the replacement of horse drawn vehicles with motor cars and trucks brought about a very different pattern of marketing of agricultural products, particularly on the prairies. For example, it became viable to haul grain distances of up to fifty or seventy-five miles to country elevators and village stores were being passed by in favour of purchasing in towns and cities.

Joint studies were undertaken by the departments concerned to the Canadian National and Canadian Pacific to come to mutual agreement on which lines of one system or the other might be abandoned without detriment to producers of basic commodities. A number of applications were prepared for presentation to the Board of Transport Commissioners.

The Board advertised dates to hold hearings at several centres with respect to the proposed abandonments. All concerned were invited to submit briefs. Dalton Owens, Western Region Counsel, Canadian National, and Alf Rosevear, Solicitor, with myself as engineering advisor and a similar team from the Canadian Pacific carried the ball for the railways. The learned Justice E. K. Williams represented the Grain Companies whose elevators would become redundant. Other counsel presented arguments on behalf of local communities which would be affected.

Four Projects, Minor Nonetheless Interesting

Although some lines for which abandonment was sought were not more than ten miles, in some cases three miles, from respective neighbouring lines, the counsels for the grain companies, local merchants and others concerned called witnesses to present evidence that abandonment of the railway would cause utter ruin to the rural districts which would be affected. Justice E. K. Williams was a most effective advocate against abandonments. It was a liberal education to attend the hearings. Mr. Williams had a distinguished appearance, with a grey goatee beard and forceful manner; woe to any unwary witness against his case. He would play with the unlucky one, then pounce - as a cat would on a mouse.

The most interesting hearing was at Red Deer, Alberta, from where both C.N. and C.P. ran westerly, just a few miles apart, towards Rocky Mountain House. One of the witnesses against the railways' application, was a substantial businessman, whom I remembered as a freighter with a wagon and four horses during construction of the G.T.P. Tofield-Calgary Branch, 1910.

Dalton and Alf, together with their counterparts from C.P., made logical presentations against strong adversaries, not the least of which was the wish of the Board from Ottawa not render decisions to 'upset the apple cart'. As a result, permission was granted to C.N. to abandon just eighteen miles of branch lines - fifteen between Portage la Prairie and Delta, Manitoba, and three miles near Alix, Alberta.

Now, after forty-five years, the situation is unchanged. The railways plead to abandon unprofitable services but it appears that the powers at Ottawa decline to risk offending merchants, grain marketing companies and railway labour unions. Perhaps, some day, practical economics will prevail.

Steep Rock Iron Mines - Railway Location

Some years before the birth of the present century, members of the Canadian Geological Survey, paddling westerly by the route of the fur traders between Fort William and Fort Frances, observed 'float' iron ore on the shore of Steep Rock Lake and mentioned this in a subsequent report.

The importance of this was not fully recognized until the 'thirties' when Julius Cross, engineer and prospector of the two cities, now named Thunder Bay, took up the trail and deduced that the parent ore body would probably be discovered beneath the depths of Steep Rock Lake. Through much persuasive effort, Julius succeeded in obtaining financial backing from Mr. J. Erington of Toronto, to undertake a program of diamond drilling from the frozen surface. The configuration of the lake resembled a huge inverted "S".

Resultant cores were encouraging and the scope of drilling was expanded, proving three major ore bodies - "A" at the north end of the Middle Arm, "B" at the south end of the same arm and "C" at the north end of the East Arm. Canadian National Railways became interested in this discovery, about three miles from Atikokan, its divisional point, one hundred and twenty-five miles west of Port Arthur - apparently a potential source of heavy traffic.

M. S. (Pop) Fotheringham was mine engineer and Mel Bartley, geologist, at the time of my first visit during the winter 1937-38. Pop and Mrs. Fotheringham were living in a small tent pitched by the lake shore, at the end of the trail from Atikokan. Pop cut their wood to fire the tin heater and his plucky lady cooked on a two burner Coleman stove. They invited me to a delicious steak dinner, although they had to watch the shekels, working to a restricted budget. At night fall they rolled into eiderdown sleeping bags for sound sleep in clear frosty air. Such was the mode of life of a young mining engineer prior to the development of sophisticated mobile homes.[55]

During the ensuing years, the mine engineers had many difficulties to contend with, engineering and financial. Mr. Hugh Roberts, International Consultant, especially with respect to mining and processing iron ore, and Mr. Cyrus Eaton, Canadian born multi-million industrialist of Cleveland, came onto the scene. It was decided that initial production should be sinking a shaft for underground mining of "A" ore body and, concurrently preparing for open pit mining of "B". To carry out the latter, it was necessary to divert the Seine River which normally flowed through Steep Rock Lake and construct a dam at the north end of the West Arm in order that the East and Middle Arms could be de-watered - a gigantic project in itself of which much has been written in professional publications.

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[55]Mr. Fotheringham developed Steep Rock Iron Mines to production and became president of the company. He and his wife are now retired, living at Thunder Bay. Mel Bartley is Dr. Bartley, Consulting Geologist.

Four Projects, Minor Nonetheless Interesting

The mine company built a permanent office, also accommodation for officials and general staff at the north end of the Middle Arm. Mr. and Mrs. Fotheringham were residing in a comfortable modern home when I arrived in the spring of 1939 with a survey party to establish the location for a railway to serve facilities for loading ore into railway cars, at both "A" and "B" bodies for shipment to Port Arthur and transfer to boats on the Great Lakes for furtherance to steel mills thereabouts.

Physical and geographical conditions could hardly have been bettered with respect to railway transportation. The turnoff point from the main track was just west of and convenient to Atikokan divisional yard. The distance to "A" loading point was a little over five miles and another mile from a midway point to "B", which could be designed with gradients favourable to movement of outward loads into Atikokan and thence over the Kashbowie Subdivision, mostly downgrade, to Port Arthur. The local topography, however, was extremely rugged, demanding much careful engineering to establish a viable rail line.

With the exception of Fred Eaton on the transit and two local woodsmen with axes, the party consisted of students on summer employment. We set up camp at a small bay on the West Arm from where all points, including Atikokan, were accessible by canoe. Such a beautiful and convenient situation was one to be dreamed about, but seldom realized. In addition to good swimming at camp, lunch could usually be taken on a rocky point where one could peel off and dive into deep water.

I felt complimented that Mr. Dixon, Chief Engineer, entrusted his only son under my wing. Howard ran level and proved excellent, always straining to do a little extra to dispel possible thoughts of others, that he had the job through his father's position. My son John was head chainman until Howard had to leave, then John took on the level. It was Jack Cann's first summer on the railway. He was rear chainman and Doug Worby was rodman.[56] After we settled into camp, my wife and daughter arrived.

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[56]Howard Dixon served in the R.C.A.F. Following demobilization, he worked for a doctorate degree and is now Director of Research for a major consortium engaged in development of craft for flight in our earth's atmosphere and in Outer Space. Jack Cann graduated with B.Sc. and joined the railway's Bridge Department. Before long, I

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Eira had just graduated from the University of Manitoba with the degree of Bachelor of Science, after a busy year as 'Lady Stick of Science'. She had other qualifications too. Being proficient with a canoe, she took on the job of freighting supplies and carrying mail to and from camp, via the West Arm and the Atikokan River, which flowed close by the railway station. Eira returned from one trip furious that she had been caught in an undignified position of endeavouring to re-start a balky outboard engine, in full view of a train crew of a freight pulling slowly by on the main track adjacent and close to the river. Naturally, spotting the attractive girl, with reddish-brown hair, the fireman leaned out from the cab to give her encouraging advice and banter.

Top quality supplies, including T-bone steaks, fresh vegetables and fruit, arrived by overnight train twice each week from the Sleeping and Dining Car Department's commissariat at Winnipeg. But, there was a 'fly in the ointment'. The cook was pretty crude. The best he could do was to serve stews, which, under different conditions might be acceptable. However, juicy steaks deserved better treatment, so the poor fellow departed and it was some time before he was replaced.

In the meantime, Eria showed her versatility by filling the gap. She did an excellent job and had willing assistance from the boys, washing dishes and so on. Mr. Hill came to look at the mine and was surprised to see Babs, as he knew her, presiding over the cook tent. He said he had not noticed her name on the pay-roll. I explained that under the circumstances, it would not appear appropriate for me to include my daughter on the pay-roll. Murray replied, "Nonsense", so Babs earned her first cheques.

Some of the students were not too handy with an axe, slashing away without much control, fortunately not cutting their feet and frequently striking rock, ruining the cutting edge and causing their efforts to resemble chewing trees down. One noon, George,

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[56] had the pleasure of appointing him Division Engineer at Kamloops, then District Engineer at Vancouver; in due course, he has advanced to the rank of Vice-President at Montreal. Doug Worby was appointed Division Engineer at Calgary and is presently on the System Chief Engineer's staff at Montreal.

an expert local lumberjack, and I were preparing a fire to brew our lunch time tea. I enquired, "George, are there any beaver about here?" He looked towards two of the boys endeavouring to cut line and replied, "Yes! over there". Lord help anyone who might inadvertently pick up George's razor-sharp axe.

Our survey was completed in ample time for those who planned further studying to return to the university for the Fall term, 1939. All in all, it was a very enjoyable and profitable exercise, but a number of serious obstacles, including an effort by a rival company to gain control of Steep Rock Iron Mines had to be overcome before development of the property would be advanced to the point where construction of the proposed railway could be commenced.

Therefore, I prepared to return to the Hudson Bay Railway at The Pas, with little serious appreciation that the holocaust of war would soon precipitate world-wide destruction and sacrifice of millions of splendid young lives, and maiming many millions more.

PART I

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CANADA :~ RAILWAY'S MARCH NORTHWARD

Legend

1 - QUEBEC NORTH SHORE & LABRADOR RY.
2 - QUEBEC CARTIER MINING CO. RY.
3 - C.N.R. TO CHIBOUGAMAU
4 - ONTARIO NORTHLAND RAILWAY
5 - C.N.R. & C.P.R. TO MANITOUWADGE
6 - STEEP ROCK IRON MINES, ATIKOKAN
7 - C.N.R. TO CHURCHILL
8 - " " THOMPSON & KELSEY
9 - " " LYNN LAKE
10 - " " CHISEL LAKE
11 - " " FLIN FLON
12 - NORTHERN ALBERTA RAILWAYS
13 - GREAT SLAVE LAKE RAILWAY
14 - PACIFIC GREAT EASTERN RAILWAY
15 - POSSIBLE ROUTES TO ALASKA
16 - C.N.R. TO KITIMAT
17 - WHITE PASS & YUKON RAILWAY
18 - ALASKA RAILWAY
19 - ALASKA HIGHWAY
20 - MACKENZIE HIGHWAY
21 - C.P.R. TO MEADOW LAKE
22 - C.N.R. TO LAKE MATTAGAMI
23 - PROPOSED TO SERVE YUKON IRON ORE

1962/64 Reconnaissance

Scale in Miles

J.L. Charles, P. Eng. - Canadian National Railways
Winnipeg, Manitoba Oct. 1960 - Revised 17 July 1963, Jan. 1965, Nov. 1965 June 19 [illegible]