The CPR's 'Big Hill', 1885 - 1909; Stan's Photo Gallery; The Field Speakeasy; Leonard Seton, Q.C.; A. Herbert MacDonald; Heritage Business Car
La « Grande Pente » du CP, 1885 - 1909 • Les photos de Stan
Le légendaire Hôtel Monarch à Field, C.-B. • Leonard Seton, Q.C.

Canadian Rail

THE MAGAZINE OF CANADA'S RAILWAY HISTORY

No. 565 • MARCH - APRIL • 2015

Canadian Rail

Published bi-monthly by the Canadian Railroad Historical Association
Publié tous les deux mois par l'Association canadienne d'histoire ferroviaire

Suggested Retail Price: $9.75 **ISSN 0008-4875** **Postal Permit No. 40066621**

TABLE OF CONTENTS

The CPR's 'Big Hill' / *La « Grande Pente » du CP,* by/par Philip Mason 47
Stan's Photo Gallery / *Les photos de Stan,* by/par Stan Smaill 62
The Field Speakeasy / *Le légendaire Hôtel Monarch à Field, C.B.,* by/par Stan Smaill. 74
Leonard A. Seton, Q.C. – 1917 - 2014 by/par Peter Murphy 84
Heritage Business Car 85

For your membership in the CRHA, which includes a subscription to Canadian Rail, write to:

CRHA, 110 Rue St-Pierre, St. Constant, Que. J5A 1G7

Membership Dues for 2015:

In Canada: $50.00 (including all taxes)

United States: $50.00 in U.S. funds.

Other Countries: $85.00 Canadian funds.

Canadian Rail is continually in need of news, stories, historical data, photos, maps and other material. Please send all contributions to Peter Murphy, X1-870 Lakeshore Road, Dorval, QC H9S 5X7, email: psmurphy@videotron.ca. No payment can be made for contributions, but the contributor will be given credit for material submitted. Material will be returned to the contributor if requested. Remember "Knowledge is of little value unless it is shared with others".

INTERIM CO-EDITORS: Peter Murphy, Douglas N.W. Smith

CARTOGRAPHER: James Taylor

FRENCH TRANSLATION: Michel Lortie, Jean-Maurice Boissard, Denis Vallières, Gilles Lazure, Jacques Loiselle et Luc Hamilton

ENGLISH PROOFREADING: Garth Stevenson

LAYOUT: Gary McMinn

PRINTING & DISTRIBUTION: Pub Cité

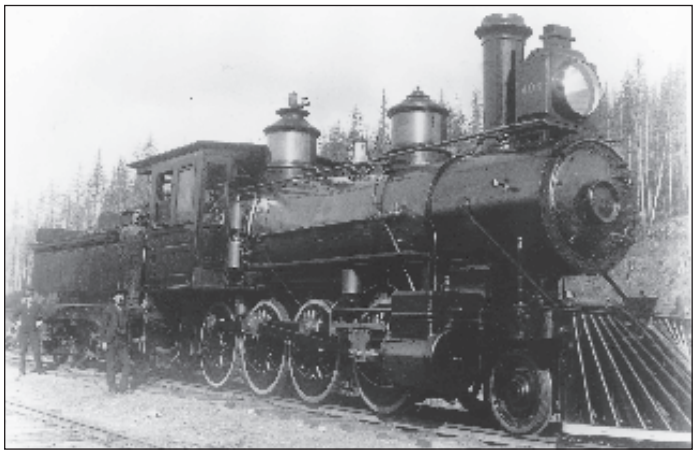
The Canadian Railroad Historical Association is a volunteer, membership based, not for profit corporation, founded in 1932 and incorporated in 1941. It owns and operates Exporail, the Canadian Railway Museum in the greater Montreal, Quebec region (www.exporail.org) and publishes Canadian Rail bi-monthly. Membership in the Association includes a subscription to Canadian Rail and discounts at Exporail.

FRONT COVER: Canadian Pacific 8860 leads the charge up the grade at Yoho, British Columbia MP 129.9 on the Laggan Subdivision on February 2, 2010. Kevin Dunk

BELOW: Locomotive 403 was built by the Canadian Pacific's New Shops in December 1886. It was one of a fleet of Consolidation Type pusher engines used on the 'Big Hill'; this photo dates from circa 1887. McCord Museum of Canadian History MP.1993.6.6.32

PAGE COUVERTURE: Un long train de marchandises, avec la 8860 du CP en tête, monte la « Grande pente » à Yoho, C. B., au point milliaire 129,9 de la sous-division Laggan, le 2 février 2010. Kevin Dunk

CI-DESSOUS: La numéro 403 fut fabriquée aux ateliers New Shops du Canadien Pacifique en décembre 1886. Elle faisait partie d'une flotte de locomotives d'assistance de type Consolidation utilisées sur la « Grande Pente ». Cette photo date de circa 1887. Musée McCord d'Histoire Canadienne MP.1993.6.6.32



We acknowledge the financial support of the Government of Canada through the Canada Periodical Fund of the Department of Canadian Heritage.

Nous reconnaissons l'appui financier du gouvernement du Canada par l'entremise du Fonds du Canada pour les périodiques, qui relève de Patrimoine canadien.

Canadian Heritage Patrimoine canadien Canada

The CRHA may be reached at its web site: www.exporail.org or by telephone at (450) 638-1522

The CPR's 'Big Hill'

By Philip Mason

Version française : Jean-Maurice Boissard

Phil Mason is a retired CPR locomotive engineer living in Kamloops, BC; he operated freight and passenger trains between Field and Revelstoke and west to Kamloops.

Why it was built

When the Canadian Government issued a charter to the Canadian Pacific Railway (CPR) to build a railway line from Central Canada to the Pacific Ocean through the western mountains, there was a stipulation included that gradients would not exceed 2.2% (2.2 feet elevation in 100 feet of track). From earlier railway construction projects, this had been established as the maximum practical gradient for conventional steam locomotives.

After some debate over a practical route through the Rockies and the Selkirk mountain ranges, Major A. B. Rogers plotted out a route which used the Kicking Horse Pass to carry the line through the Canadian Rockies and Rogers Pass to carry the line over the Selkirk Mountains.

As plotted by Major Rogers, the descent down the western slope of the Kicking Horse Pass would have been at a maximum grade of 2.2% as stipulated by the Charter. When further surveying of the route was carried out, the mountainsides along which this route would have been built were found to be too unstable for a rail line. While it would have been possible to push a 1400 foot long tunnel under Mount Stephen, this would have been a time consuming and very expensive operation.

Instead, the CPR applied for and was granted a 'temporary solution' involving a 4.4% gradient that closely following the Kicking Horse River westward from its source at Wapta Lake to a point just east of Mount Stephen, where the grade decreased to 2.2%. For obvious reasons, railroaders named the steep incline the 'Big Hill'.

Curiously, because the original plan was to complete the 2.2% grade when time and finances permitted, west of Field, (the operating terminal established at the base of the Big Hill), the rail line was built up to a location named 'Muskeg Summit' where the planned 2.2% route would have connected with it. This portion was in service from 1885 to 1902, when the 'Ottertail Diversion' was built lower down the valley of the Kicking Horse River.

The 'Temporary Solution'

As built, the 4.4% gradient was part of the 'Mountain Section' of the main line of the CPR, which ran from Laggan, North West Territory (present day Lake

La « Grande Pente » du CP

Par Philip Mason

Version française : Jean-Maurice Boissard

Phil Mason est un mécanicien de locomotive retraité du CP qui vit à Kamloops (C.-B.). Il conduisait des trains de passagers et de marchandises entre Field et Revelstoke, et vers l'ouest jusqu'à Kamloops.

Pourquoi sa construction

Quand le Gouvernement du Canada publia la charte autorisant le Canadian Pacific Railway (CPR) à construire une ligne reliant le Canada central à la côte du Pacifique, il fut stipulé que la déclivité ne devait pas dépasser 2,2 % (2,2 m d'élévation pour 100 m de longueur de voie). On considérait alors à l'époque que c'était la pente maximale que pouvaient franchir les locomotives à vapeur classiques.

Après plusieurs discussions quant à la meilleure route à suivre à travers les Rocheuses et la chaîne Selkirk, le Major A.B. Rogers établit un trajet passant par le col du Cheval-qui-rue (Kicking Horse Pass) à travers les Rocheuses et le col Rogers à travers la chaîne Selkirk.

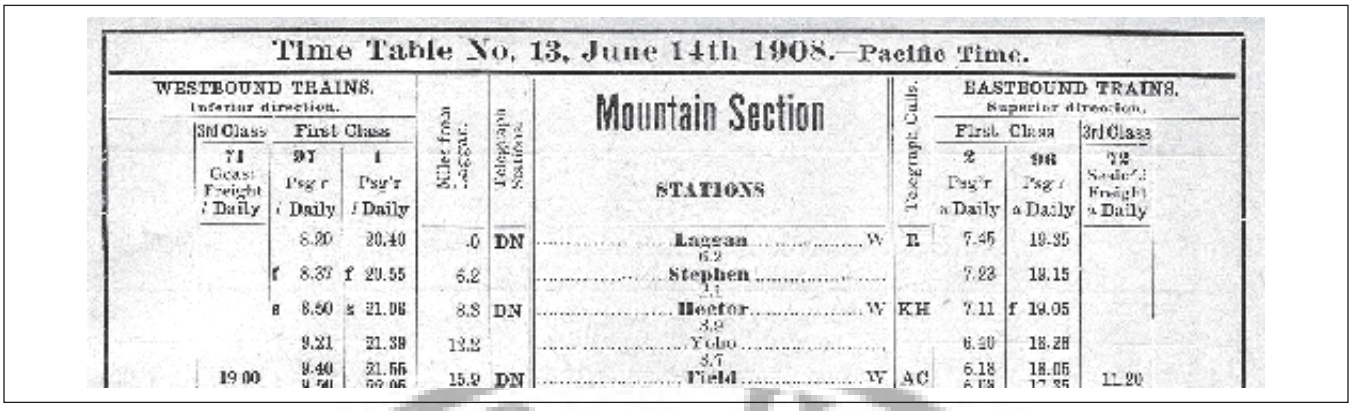
Selon le tracé établi par le Major Rogers, la descente côté ouest du col du Cheval-qui-rue aurait bien eu la déclivité maximale de 2,2 % autorisée par la charte. Mais après plusieurs arpentages, on constata que le flanc de la montagne était trop instable pour y construire une voie de chemin de fer. On pourrait bien creuser un tunnel de 1400 pieds (427 m) sous le Mont Stephen mais ce serait une opération fastidieuse et onéreuse.

Au lieu de cela, le CPR demanda et obtint une « solution temporaire » impliquant un dénivelé de 4,4 % qui suivait de près la rivière Kicking Horse vers l'ouest depuis sa source au lac Wapta jusqu'à un point situé juste à l'est du mont Stephen, où la pente fut ramenée à 2,2 %. Pour des raisons évidentes, les cheminots nommèrent cette pente raide la « Grande Pente » (ci-après Grande Pente).

Curieusement, parce que le plan original était de parachever, lorsque le temps et le budget le permettraient, la pente de 2,2% à l'ouest de Field (le terminal des opérations établi au pied de la Grande Pente), la voie fut construite jusqu'à un endroit nommé Muskeg Summit, où la voie avec la pente de 2,2 % aurait dû se raccorder. Ce segment fut en service entre 1885 et 1902, jusqu'à ce que la déviation d'Ottertail soit construite en descendant la vallée de la rivière Kicking Horse.

La « Solution temporaire »

Telle que construite, la pente de 4,4 % fit partie de la section « montagne » de la ligne principale du CPR, qui allait de Laggan dans les Territoires du Nord-Ouest



Time Table No. 13, June 14th 1908.—Pacific Time.

WESTBOUND TRAINS. Inferior direction.			Miles from Laggan.	Telegraph Stations.	Mountain Section STATIONS		Telegraph Calls.	EASTBOUND TRAINS. Superior direction.		
3rd Class	First Class							First Class		3rd Class
71 Coast Freight Daily	97 Pass'r Daily	1 Pass'r Daily						2 Pass'r Daily	98 Pass'r Daily	72 Scheduled Freight Daily
	8.20	20.40	.0	DN	Laggan	W	B	7.45	19.35	
	f 8.37	f 20.55	6.2		6.2 Stephen			7.23	18.15	
	s 8.50	s 21.06	8.3	DN	2.1 Hector	W	KH	7.11	f 19.05	
	9.21	21.39	13.2		4.9 Yoho			6.40	18.28	
19 00	9.40	21.55	15.9	DN	3.7 Field	W	AC	6.18	18.05	11.20

Extract from CPR Employee Timetable No. 13, June 14, 1908 showing Laggan (mileage .0) to Field (mileage 15.9) Ronald Ritchie collection

Extrait de l'Indicateur pour employés numéro 13 (14 juin 1908) montrant de Laggan (borne milliaire 0,0) à Field (BM 15,9). Collection Ronald Ritchie

Louise, Alberta) to Revelstoke, B.C., a distance of 146 miles. A railway terminal called Field was established at the bottom of the Big Hill with yard trackage and locomotive servicing facilities. Then as now, track miles are measured east to west on the CPR. Thus Laggan was Mile 0 of the 'Mountain Section'.

The Continental Divide and the summit of the Kicking Horse Pass was at Stephen (Mile 6.2), but the westward descent was very gradual until Hector (Mile 8.3), which consisted of a station and water tower along the shore of Wapta Lake. As the Big Hill line followed the Kicking Horse River west from Hector, the gradient westward downhill increased from 1.5% to 3%. After crossing the Sherbrooke Creek bridge at Mile 9.8, the westward downhill gradient increased to 4.4%, and remained so until Mile 13.0.

Three 'runaway tracks' were located on the 4.4% gradient, at the beginning of the grade at Mile 9.8, another at Mile 10.7, and a further one at Mile 12. These were designated as 'Safety Switch' 1, 2 and 3. The track switches for the runaway spurs were manned by 'switchtenders', who would align the Safety Switch for the main line only after they were assured by whistle signals from descending trains that the movement was in control.

At Mile 11.1, there was a short spur to the Monarch Mine, a lead-zinc mine located in the flank of Mount Stephen.

At Mile 12.2, the early timetables show Yoho as a station without a siding. Times for scheduled passenger and freight trains are shown. Many trains had to make a 'thermal stop, at Mile 13 to allow the cast iron wheels to cool down at the en dof the 4.4% grade. Yoho was likely a hold point for following westbounds.

(aujourd'hui Lac Louise, Alberta) jusqu'à Revelstoke, C.-B., une distance de 146 milles (235 km). Un terminal ferroviaire appelé Field fut établi au bas de la pente avec des voies de triage et des installations pour l'entretien des locomotives. À cette époque au CPR, tout comme aujourd'hui, la voie est mesurée de l'est vers l'ouest. Laggan est donc le point 0 de la section « montagne ».

La ligne de séparation des eaux et le sommet du col du Cheval-qui-rue étaient à Stephen, à la borne milliaire (BM) 6.2 (km 10); cependant la descente vers l'ouest était très progressive jusqu'à Hector à la BM 8.3 (km 13,4), une gare et un château d'eau construits le long de la berge du lac Wapta. En descendant le long de la rivière Kicking Horse à l'ouest d'Hector, la Grande Pente augmentait de 1,5 à 3 %. Après la traversée du pont sur le ruisseau Sherbrooke à la BM 9.8 (km 15,8), la déclivité passait à 4,4 % et restait ainsi jusqu'à la BM 13.0 (km 20,9).

Trois embranchements d'emballement furent situés sur la pente de 4,4% : un à son début, à la BM 9.8 (km 15,8), un second à la BM 10.7 (km 17,2) et le dernier à la BM 12.0 (km 19,3). Désignées « voies de sécurité » 1, 2 et 3, leurs aiguillages étaient manœuvrés par des aiguilleurs qui n'autorisaient l'accès à la voie principale que s'ils étaient informés par sifflet que le train descendant était en parfait contrôle de sa vitesse.

À la BM 11.1 (km 17,9), un court embranchement desservait la mine Monarch, une mine de plomb et de zinc sur le flanc du mont Stephen.

À la BM 12.2 (km 19,6), les premiers horaires indiquent Yoho, une gare sans voie de contournement, avec les heures de passage pour les trains réguliers de passagers et de marchandises. De nombreux trains devaient s'arrêter pour laisser les roues de fonte de leurs wagons refroidir à la fin de la pente de 4,4 %, à un point d'« arrêt thermique » à la BM 13.0 (km 20,9). La gare de Yoho servit alors probablement de point de tenue à distance pour les trains suivants en direction ouest.

A Baldwin 2-8-0 'pusher' locomotive is on one of the three 'runaway tracks' at the foot of Mount Stephen just prior to the inauguration of scheduled service.

Une locomotive d'assistance Baldwin 2-8-0 est en position sur l'une des trois voies d'emballement au pied du mont Stephen, juste avant le début du service régulier.

Operations on the 'Big Hill'

Experience at other locations in North America showed that train operations on grades of over 4% were possible, but only with extreme care and caution.

When the CPR was completed in 1885, air brakes had yet to be adopted. Also, 'link and pin' couplers were used to connect the locomotives and cars. Trainmen risked life and limb using this type of coupler. This coupling system was also prone to breakages and there was a great deal of slack between the cars. Break-aparts were the frequent consequence of slack action, and with only hand brakes to stop the cars, runaways were a distinct possibility.

Les opérations à la « Grande Pente »

L'expérience en d'autres endroits d'Amérique du Nord a montré qu'il est possible de faire circuler des trains sur des pentes de plus de 4 %, à condition de faire preuve d'une extrême prudence.

Quand la voie du CPR fut terminée en 1885, les freins pneumatiques n'étaient pas encore adoptés. Les attelages avec la locomotive et entre les wagons se faisaient aussi par barre et goupille. Ce système se brisait fréquemment et laissait un grand jeu entre les wagons. Le manque de rigidité des attelages causait souvent la rupture de convois et, avec seulement les freins à main pour arrêter les wagons, le risque existait de les voir s'emballer.

Link and Pin couplers

The link-and-pin coupling was the original style of coupling used on North American railroads. The link-and-pin coupler consisted of a tubelike body that received an oblong link. During coupling, a railworker had to stand between the cars as they came together and guide the link into the coupler pocket. Once the cars were joined, the employee inserted a pin into a hole a few inches from the end of the tube to hold the link in place. This procedure was exceptionally dangerous and many brakemen lost fingers or entire hands when they did not get their hands out of the way of the coupler pockets; many more were killed as a result of being crushed between cars or dragged under cars that were coupled too quickly. Brakemen were issued with heavy clubs that could be used to hold the link in position, but many brakemen would not use the club, and risk injury. Between 1877 and 1887, approximately 38% of all railworker accidents in North America involved coupling.

Attelages par barre et goupille

L'attelage par barre (timon) et goupille fut le système originalement utilisé par les compagnies de chemins de fer en Amérique du Nord. Il consistait en une barre tubulaire (un timon) avec un trou à chaque extrémité. Durant la manœuvre d'attelage, l'employé se tenait entre les wagons et devait maintenir cette barre pour qu'elle s'engage dans l'étrier de l'autre wagon. Une fois le timon entre les wagons en place, il insérait une goupille dans le trou à l'extrémité du timon dans l'étrier. Cette opération était particulièrement dangereuse et beaucoup de serre-freins y ont perdu des doigts, voire la main complète, lorsqu'ils n'ôtèrent pas leur main assez vite quand la barre arrivait dans l'étrier. Beaucoup ont été tués, écrasés entre les wagons ou entrainés sous l'un d'eux lors de manœuvres trop brusques et rapides. Les serre-freins reçurent de solides perches pour soutenir les timons, mais beaucoup ne s'en servirent pas et risquèrent des blessures. Entre 1877 et 1887, les opérations d'attelage furent impliquées dans 38 % des accidents chez les cheminots en Amérique du Nord.

CPR 2-8-0 Brown SD Class 401 was built in the Canadian Pacific New Shops in Montreal in September, 1886 for service on the Big Hill. Within a few years they would be replaced by larger more powerful locomotives and reassigned to other duties. This turn-of-the-century (undated) photograph has a hand written inscription overleaf 'First hog to come to Fort William West in the days of the link and pin'. This view clearly shows the link and pin coupler pocket and the air brake hose. CPR Archives, 401

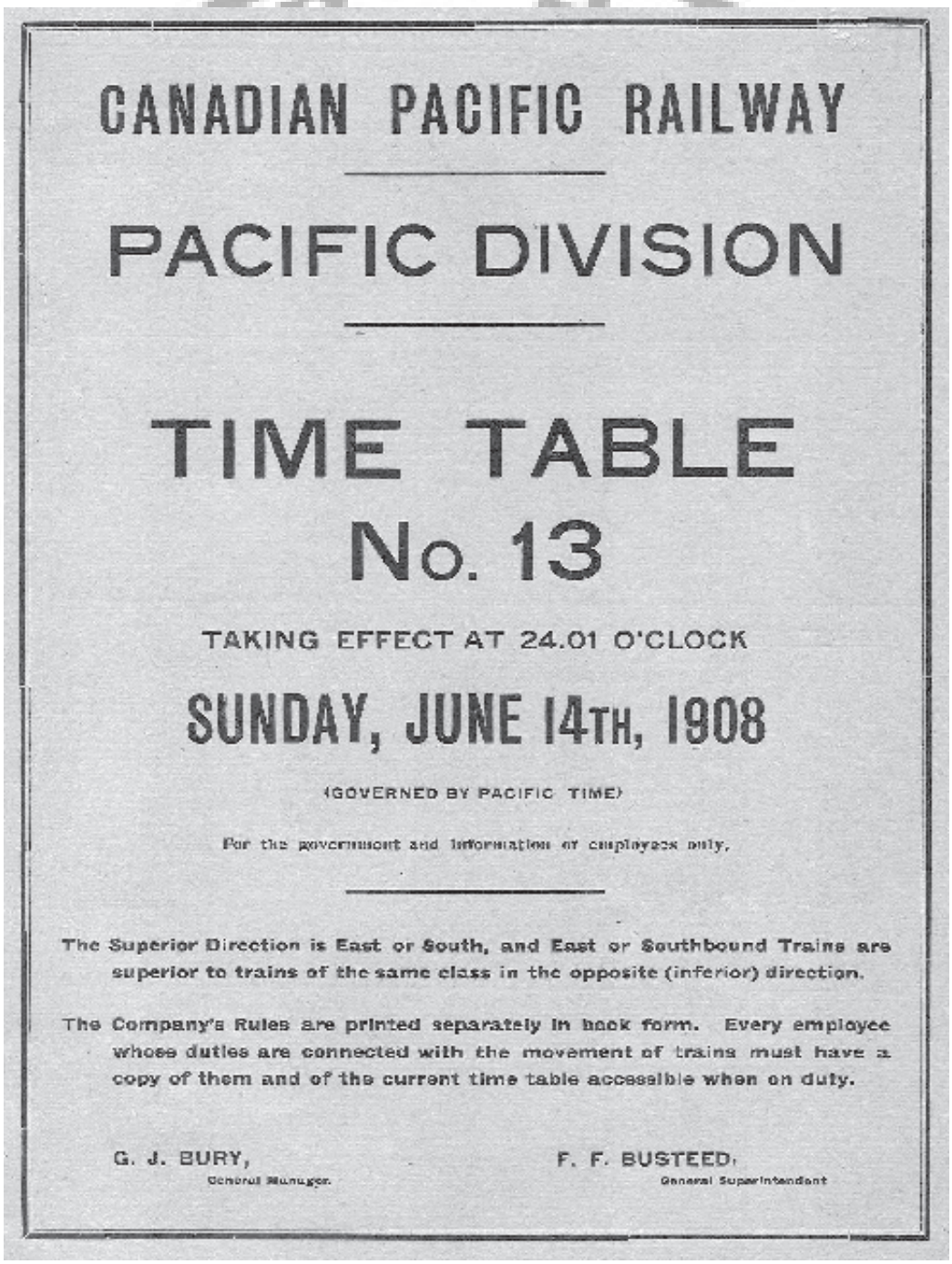
La 2-8-0 numéro 401 de la classe Brown SD fut construite en septembre 1886 aux ateliers New Shops du CPR à Montréal pour servir sur la Grande Pente. Peu d'années après, ces locomotives furent remplacées par de plus grosses et plus puissantes et réassignées à d'autres tâches. Cette photographie sans date, mais autour du changement de siècle, porte à l'endos une inscription faite à la main mentionnant Fort William au temps des attelages par barre et goupille. On y voit clairement l'attelage et le boyau des freins à air comprimé. Archives du CPR, 401

With this in mind, the CPR had 'special instructions' included in the working timetables of the day which included rules to be strictly followed. The number of cars allowed on a train was limited, and very low speeds were permitted when operating downgrade.

Three runaway tracks were included on the 4.4% portion of the gradient, and switchtenders had instructions to assure that the trains coming downgrade were fully in control before lining the switch away from the runaway track.

C'est pourquoi le CPR introduisit des instructions spéciales dans les emplois du temps quotidiens qui incluaient des règles à suivre formellement. Le nombre de wagons par train fut limité et de très basses vitesses furent autorisées lors des descentes.

Les aiguilleurs pour les trois voies d'emballement sur la portion ayant la pente de 4,4 % reçurent l'instruction de s'assurer que les trains descendants maîtrisaient parfaitement leur vitesse avant de leur permettre de continuer sur la voie principale au lieu de les aiguiller vers les voies de sécurité.



CANADIAN PACIFIC RAILWAY

PACIFIC DIVISION

TIME TABLE

No. 13

TAKING EFFECT AT 24.01 O'CLOCK

SUNDAY, JUNE 14TH, 1908

(GOVERNED BY PACIFIC TIME)

For the government and information of employees only.

The Superior Direction is East or South, and East or Southbound Trains are superior to trains of the same class in the opposite (inferior) direction.

The Company's Rules are printed separately in book form. Every employee whose duties are connected with the movement of trains must have a copy of them and of the current time table accessible when on duty.

G. J. BURY,
General Manager.

F. F. BUSTEED,
General Superintendent

TO ENGINEMEN, TRAINMEN, SAFETY SWITCH TENDERS, AND OPERATORS AT HECTOR AND FIELD.

Regulations for the Operation of Freight Trains on the Kicking Horse Grade.

TIME ALLOWANCE OF TRAINS HECTOR TO FIELD.

Freight trains over seven cars, 1 hour; light engine or freight trains seven cars and under, 42 minutes.

STATIONS	Distance Miles	SPEED LIMIT			
		Freight Trains		Light Engines	
		Speed per Hour	Running Time	Speed per Hour	Running Time
HECTOR to Summit Board	0.46	5 Miles	5 Mins.	8 Miles	3 Mins.
to No. 1 Safety Switch	1.25	5 do.	15 do.	8 do.	9 do.
to No. 2 Safety Switch	.94	6 do.	8 do.	8 do.	6 do.
to No. 3 Safety Switch	.9	6 do.	9 do.	8 do.	6 do.
to Yoho	.4	6 do.	4 do.	8 do.	3 do.
to Tunnel	.77	6 do.	8 do.	8 do.	6 do.
to East Switch	2.4	13 do.	11 do.	15 do.	9 do.
FIELD		1 Hour			42 Mins.

Rules Governing the Maximum Tonnage, and Number of Cars to be Handled in any one Descending Train:

By Day	2 Engines	17 Loads or	25 Empties	650 Equivalent Tons.
	1 Engine	12 do.	20 do.	450 do. do.
By Night	2 Engines	12 Loads or	20 Empties	450 Equivalent Tons.
	1 Engine	9 do.	18 do.	350 do do.

Extra precautions must be taken when handling foreign cars, the brake equipment of which appears inferior to the standard of this Company.

Unless otherwise specified the reference rules quoted in these instructions will be found in the General Rules for care and use of air brakes issued July, 1902.

1—The speed of all trains (except passenger trains) will be entirely controlled by the use of water brakes on engines and hand brakes on cars and tenders. Rule 16, clause 5.

2—Before leaving Hector all air brake cars are to be placed next to the engine, all hose to be connected, and air cut in, retaining valves turned up, and reservoirs fully charged. The air brake must be tested as per Rule 17 A, also each hand brake individually. The Engineer must be positive that he has a sufficient supply of sand, and test sand pipes and sand blower before starting.

3—**As the train leaves Hector** hand brakes must be all set up, lightly at first, and tightened each in turn as soon as the Summit board is reached. This application must be gradual, and so retard the train that, although on a grade of 1½ per cent., increasing to 3 per cent. within one mile from the Summit board, steam will have to be used to pull the train until the last car has passed over the short bridge spanning Sherwood Creek, Bridge No. 9.8.

4—**At this point (Sherwood Creek, Bridge No. 9.8) begins the grade of 4½ per cent.** All brakes must be set up, and engineer shut off steam and be prepared to reverse the lever and use the water brakes as required. Engines not equipped with water brakes must be treated as freight tonnage, that is to say, the tonnage of engine included in that of train. Should it happen that the brakes have been applied in full between the Summit Board and Sherwood Creek Bridge, and that steam is not being used to **move** the train, the engineer must be promptly notified by train crew that the brakes are fully applied, and he will then **at once take steps to stop.** Once stopped and protected additional engine assistance must be sent for, **and train not moved until it arrives.**

5—**It is imperative that the speed regulation be not exceeded;** should an engineer find his train exceeding this speed, he must immediately make every effort to reduce it with engine, promptly using sand, and failing to check speed in this way, make an emergency application of brakes and bring train to a full stop; before starting again, the train must be controlled by hand brakes as per Rule 19. Should the Engineer or Conductor have any doubt of their ability to control speed of train, they must ask for assistance, and hold train until it arrives. Note Rules 22 A and 22 B.

Remember that safety in handling trains down the grade is assured only by having them under complete control at the summit, and always bear in mind that the brake resistance decreases as the speed of train increases, and therefore the absolute necessity of having trains under control from the start.

6—**No train will leave Hector** until the Conductor has ascertained that the nearest switch tender is on hand and he has been notified of the time his train is due to leave Hector.

7—**Signal for safety switches.** One long sound of the whistle is to be given at whistle board located about one thousand feet East of safety switch, and if train is fully under control, and not exceeding prescribed speed, four short whistles are to be sounded at board showing switch number as the signal for the switch to be thrown for the main line.

8—When a light engine or freight train is ahead, a train may leave Hector as soon as light engine or train is reported to have passed No. 1 safety switch and is clear. **In the event of telephone not being in working order,** trains may leave thirty minutes after the time that the light engine or train actually left Hector Siding.

9—As soon as a train or light engine arrives at Field, the Conductor of the former and the Engineer of the latter must promptly notify the Switch Tender of No. 3 Switch.

10—**No train must be moved up hill without an engine behind the rear end of last car.** If necessary to reduce the number of cars on a train after leaving Field, either go back to Field, or else back up the rear of the train to the West end of one of the Safety Spurs, set off the car or cars with the front engine, and after coupling up again proceed with balance of the train and both front and rear engines to destination.

11—**Assisting Engines.** Cutting off assisting engines when train is in motion is absolutely forbidden.

12—Westbound trains must stop after passing through tunnel 13.1 a sufficient time to make a proper thermal test. and if wheels are found hot, they must be allowed to cool before train proceeds.

Special care must be exercised in making the examination at this point, and

Conductors will advise the Switch Tender at Third Switch when train is ready to leave.

Special Instructions to Switch Tenders and Operators, Hector and Field.

13—The Switch Tender at No. 3 switch will not allow trains to pass until he has been notified by the ringing of the gong stationed at tunnel that the train ahead has entered the last block; when gong sounds he will immediately note time in his register, and in case of the gong being inoperative or not ringing from any cause, making it impossible for such an advice to be received, he will notify the conductor and engineer of the approaching train which will proceed with greatest caution twenty minutes after the actual time of departure from safety switch No. 3 of the preceding train or engine.

14—**Should a train or engine be sighted** approaching a safety switch before the train or engine ahead, as the case may be, has been reported as having passed the next safety switch, such train or engine must be stopped or turned into spur. **Remember that there must always be a clear switch block between each train or light engine. In case of the telephone being out of order** a following train or engine must not leave safety switches No. 1, 2 or 3, before twenty minutes have elapsed since the departure of the light engine or train ahead.

15—**Operators at Hector** must use their train order board to hold trains to comply with rules.

16—**The normal position of a safety switch is for the spur.** When a long whistle is sounded at whistle board, the switch tender must take position at lever of switch and be fully prepared to throw switch when four short whistles are given at signal board showing switch number.

It is the switch tenders special duty to closely observe the speed of an approaching train, and if it is apparent to him that it is in excess of that prescribed by these regulations, he **must not set the switch for main line,** thus requiring train to take safety spur or be stopped before reaching it.

If a train is observed to be running faster than speed prescribed for such train, the electric gong must be sounded by pressing button in watch shack and this will be a signal to all switch tenders and also the operator at Field, that a train is running too fast, and the switch tenders will at once take their station at switch and carry out the foregoing instructions.

17—**Switch Tenders** will carefully watch and point out to trainmen sliding wheels.

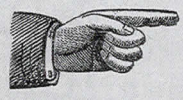
18—**In case of an obstruction** to track from any cause, the switch tender first aware of it will promptly advise Field and Hector and then the other switch tenders. The switch tenders immediately above and below will flag and notify all trains of the fact, as well as the nature of the obstruction.

19—Switch tenders must get correct time from Field at 10 o'clock daily and note the variation of their watches and clocks accordingly.

20—As soon as notified of the departure of a train or engine from Hector, the first switch tender will advise the man in charge of switch No. 2, and the latter in turn the man at switch No. 3. A switch must not be set for the main line until the attention of the man ahead in the direction of the train has been secured, and of course, the receipt of the regulation whistle signal for the switch from the approaching train or engine (and in that case only if he is satisfied that the rate of speed does not exceed that authorized).

21—Immediately a train in either direction passes one safety switch, the time train passed must be telephoned to the other switch tenders, who will record in the register book kept for that purpose, the time of all trains passing the other switches as well as their own.

22—It is the duty of the switch tenders to see that the automatic speed recorders and gongs are in good working order, and should they become inoperative from any cause the agent at Field must be notified, and he will arrange for the lineman to make necessary repairs



ENGINEMEN, TRAINMEN, OPERATORS, AND SWITCH TENDERS:

Obey the Rules, be watchful, and run no risks.

19

Extract from CPR Employee Timetable No. 13, June 14, 1908 indicating the Regulations for the Operation of Freight Trains on the Kicking Horse Grade. Ronald Ritchie collection

Extrait de l'Indicateur pour employés numéro 13 (14 juin 1908) stipulant le Règlement d'exploitation des trains de marchandises sur la pente du col du Cheval-qui-rue. Collection Ronald Ritchie

Special locomotives required

Prior to opening the line for operation, CP conducted tests on the Big Hill with two Baldwin 2-8-0s built in 1884 especially for operation on it. They were numbered 312 and 313 by the CPR. In the initial test on January 20, 1885, wood was used as the fuel. In the upgrade test, there was insufficient steam for the locomotive to haul the test train upgrade. The locomotives were modified to burn coal, and on January 28, 1885, another uphill test was conducted that was successful with an uphill average speed of 4.29 miles an hour. Later, a successful test was conducted with a 12 cars train operating downhill at average speed of 8 miles per hour. The test locomotives were equipped with a special steam brake which applied brakes on all the wheels of the locomotive. The steam brake was shown to work in helping to hold back the weight of the test train.

With the design of the locomotives a proven success, a further two 2-8-0's number 314 and 315 were purchased from Baldwin in 1886. These four locomotives would serve as the assisting engines or 'pushers' for many years on the Big Hill.

Le besoin de locomotives spéciales

Avant d'ouvrir la ligne à la circulation régulière, le CPR fit plusieurs essais sur la Grande Pente avec deux Baldwin 2-8-0 construites en 1884 spécialement pour l'opération sur cette ligne. Elles furent numérotées 312 et 313. Au premier essai en montée, le 20 janvier 1885, la locomotive fut chauffée au bois mais il n'y eut pas assez de vapeur pour réussir à tirer le train. Les locomotives furent alors modifiées pour brûler du charbon et, le 28 janvier 1885, un autre essai en montée fut réalisé avec succès à la vitesse moyenne de 4.29 mi/h (6,9 km/h). Plus tard, on fit un essai concluant avec un train de 12 wagons qui descendit à la vitesse moyenne de 8 mi/h (12,9 km/h). Les locomotives d'essai furent équipées d'un frein à vapeur spécial qui permettait de freiner toutes les roues de la locomotive. Il fut démontré que le frein à vapeur contribuait à retenir le poids du train d'essai.

La conception de ces machines s'avérant un succès, deux autres 2-8-0 portant les numéros 314 et 315 furent achetées de Baldwin en 1886. Les quatre servirent de locomotives d'assistance (ou de « poussée ») pendant plusieurs années sur la Grande Pente.

Baldwin built locomotive 315 when new photographed probably on the turntable at Field. CPR Archives, A. 1911

La locomotive numéro 315 de fabrication Baldwin photographiée, toute neuve, probablement sur la plaque-tournante de Field. Archives du CPR circa 1911

Baldwin built Consolidation 1080 was built as CPR 736; it posed with its crew in Big Hill country in 1899. CPR Archives

La Consolidation numéro 1080 reçut le numéro 736 lors de sa fabrication par Baldwin : elle est ici présentée avec son équipage dans la région de la Grande Pente en 1899. Archives du CPR

A further adaptation applied to these four Big Hill locomotives was a 'water brake' that used hydraulic pressure rather than steam pressure to apply the locomotive brakes.

Also, the 2-8-0 wheel arrangement was proven to be ideal for train operation in the mountains, and many further locomotives of this type were purchased by the CPR from a variety of manufacturers.

The 'Big Hill' in service

With the tracks in place and special pusher locomotives in service, the Big Hill went into service early in 1885. Field, the railway community at the bottom of the grade, became home for locomotive crews and others required to operate this very special piece of track. Fifty-nine employees based at Field were directly concerned with the operations on the Big Hill. Although some runaway incidents and employee injuries and fatalities took place in those early years, the extreme care taken in operating the Big Hill showed it to be a practical temporary solution to operating a railway in the Canadian Rockies.

It did however prove to be a time consuming operation, as the size of trains was limited by what the locomotives could haul uphill, and what the handbrakes and other appliances could handle downhill. Freight

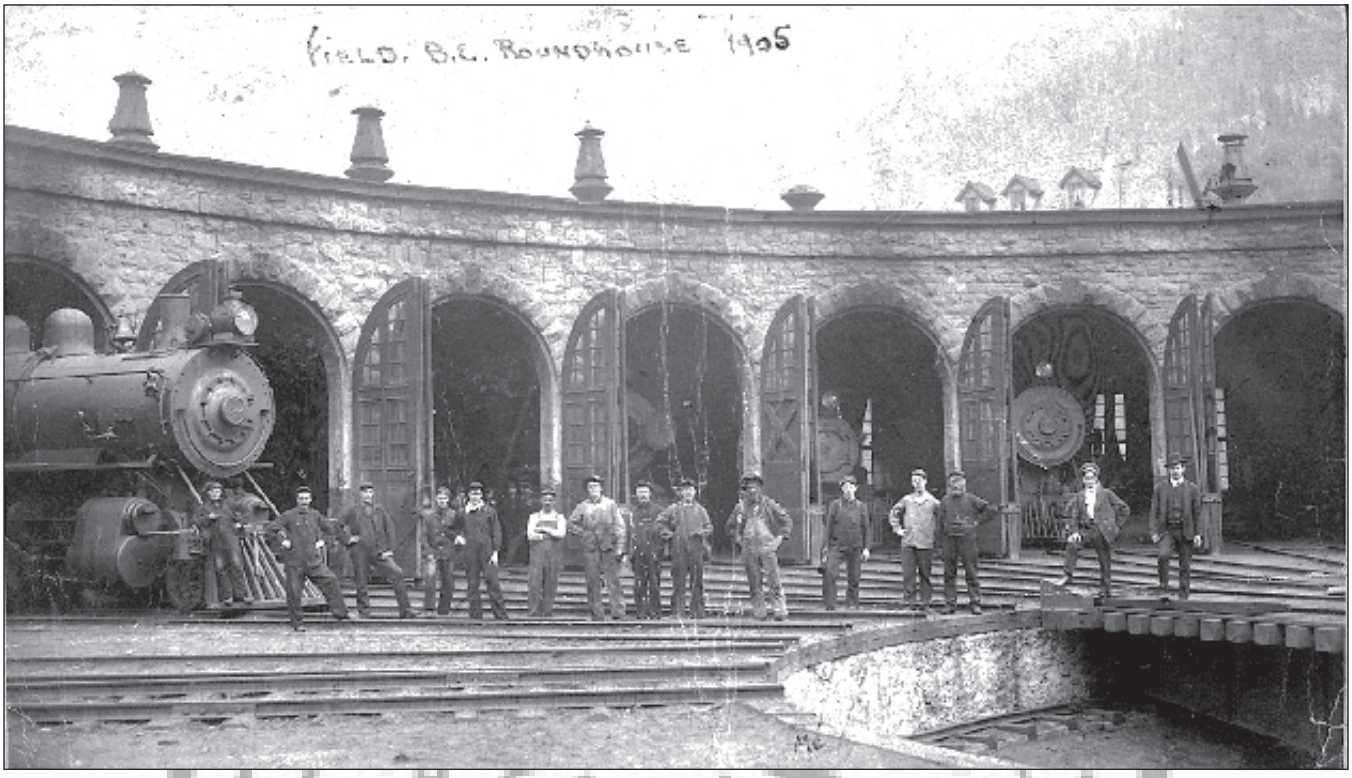
Une autre modification apportée plus tard à ces quatre locomotives fut un frein hydraulique utilisant la pression de l'eau plutôt que celle de la vapeur pour serrer les freins.

La configuration en 2-8-0 des roues de ces locomotives fit aussi la preuve qu'elle était idéale pour les opérations en montagne et plusieurs autres locomotives de ce type furent achetées de différents manufacturiers par le CPR.

La Grande Pente en service

Une fois la voie posée et les locomotives d'assistance en service, la Grande Pente fut mise en service au début de 1885. Field, la communauté ferroviaire au pied de la côte, devint la résidence des équipes de conduite et d'entretien nécessaires à l'exploitation de cette voie spéciale. Cinquante-neuf employés basés à Field servirent directement aux opérations sur la Grande Pente. Malgré quelques emballements, blessures et décès dans les premières années, les précautions extrêmes prises pour les opérations de la Grande Pente ont prouvé qu'il était possible d'exploiter, avec cette solution temporaire, un chemin de fer dans les Rocheuses canadiennes.

Toutefois, l'opération s'avéra coûteuse en temps car la taille des trains était limitée par la capacité des



Field, British Columbia roundhouse and crew in 1905. CPR Archives, NS 2749

La rotonde de Field (C.-B.) avec son personnel en 1905. Archives NS 2749 du CPR

Another view of CPR Consolidation 315 coupled to two business cars which hosted a 'photographer's special' in 1889 or 1890 (conflicting dates). The location is safety switch 1, the run-off track is clearly visible in front of the locomotive. McCord Museum of Canadian History, view 2508

Un autre aperçu de la Consolidation numéro 315 du CPR, accouplée à deux voitures particulières, composant un "extra de photographes" en 1889 ou 1890 (les dates sont en conflit). Le site de la photographie est l'aiguillage de la voie de sécurité numéro 1 clairement visible en avant de la locomotive. Musée McCord d'Histoire Canadienne, cliché 2508

trains had to be reduced in size to operate over this portion of track.

Air Brakes & knuckle couplers adopted

American industrialist and inventor George Westinghouse (b.1846-d.1914) is credited with the invention of a practical system of train air brakes, for which he obtained a U.S. patent in 1869. The concept proved very hard to sell to the railways. After achieving some success in France in the adoption of train air brakes, locomotives à grimper la côte et celle des freins à main et autres dispositifs à retenir le train lors des descentes. Les trains de marchandises devaient être raccourcis pour emprunter ce passage.

L'adoption des freins pneumatiques et des attelages automatiques

L'industriel et inventeur américain George Westinghouse (1846-1914) est considéré comme l'inventeur du frein pneumatique fonctionnel pour trains

The 'knuckle' coupler

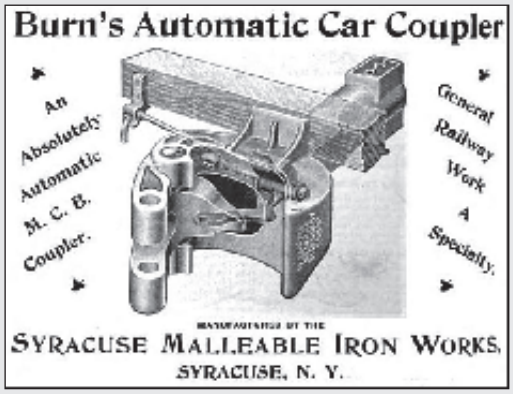
The knuckle coupler or Janney coupler was invented by Eli H. Janney, who received a patent in 1873 (U.S. Patent 138,405). Janney was a dry goods clerk and former Confederate Army officer from Alexandria, Virginia, who used his lunch hours to whittle from wood an alternative to the link and pin coupler.

In 1893, satisfied that an automatic coupler could meet the demands of commercial railroad operations and, at the same time, be manipulated safely, the United States Congress passed the Railroad Safety Appliance Act. Its success in promoting switchyard safety was stunning. By 1902, only two years after the RSA's implementation date, coupling accidents constituted only 4% of all employee accidents. Coupler-related accidents dropped from nearly 11,000 in 1892 to just over 2,000 in 1902, even though the number of railroad employees steadily increased during that decade.

L'attelage articulé

L'attelage articulé ou attelage Janney fut inventé par Eli H. Janney qui en obtint le brevet en 1873 (Brevet U.S. 138405). Janney fut un commis d'épicerie et ancien officier de l'armée confédérée qui vécut à Alexandria, en Virginie, et passa ses pauses de midi à tailler dans du bois un système d'attelage comme alternative à celui à barre et goupille.

En 1893, convaincu qu'un attelage automatique pouvait satisfaire les opérations des compagnies commerciales de chemin de fer et en même temps être de manipulation sécuritaire, le Congrès des États-Unis promulgua le US Railroad Safety Appliance Act (Loi sur la sécurité ferroviaire). Son succès dans la promotion de la sécurité dans les cours de triage fut surprenant. En 1902, seulement deux ans après sa mise en application, les problèmes d'attelage ne constituèrent plus que 4 % des accidents des employés des chemins de fer. Ils chutèrent de près de 11 000 en 1892 à un peu plus de 2000 en 1902, et ce malgré une augmentation constante du nombre de cheminots durant cette décennie.



Syracuse Malleable Iron Works transition coupler 1894. The gap in the knuckle accommodates the link of a link and pin coupler and the vertical hole in the knuckle accommodates the pin.

L'attelage de transition de la Malleable Iron Works de Syracuse de 1884. La fente faisant fourche dans l'articulation permettait l'insertion du timon et les trous verticaux, celle de la goupille.

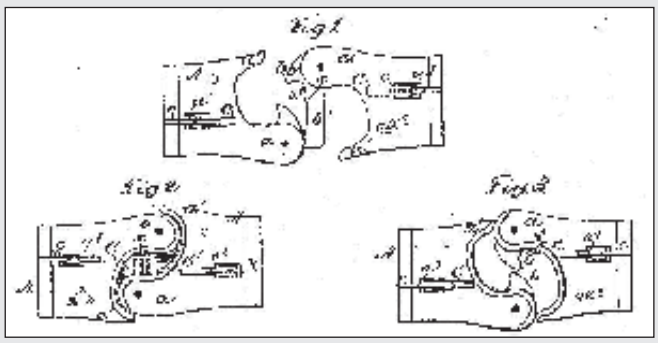


Diagram of the top view of Janney's coupler design as published in his patent application in 1873.

Esquisse de la vue de dessus du concept de l'attelage de Janney, telle que publiée dans sa demande de brevet en 1873.

he was able to prove to the US Government that air brakes would allow for safer operation of longer and faster trains.

In 1873, another American, Eli Janney, obtained a US patent for a semi-automatic 'knuckle' coupler, which was both stronger and far safer to operate than the previous link and pin system.

Throughout North America, in the last two decades of the 19th Century, there was a huge increase in the mileage of railway lines and rail serviced facilities. With the increase in train operations, there was also a corresponding increase in the number of train wrecks and crew fatalities and injuries brought about by the primitive braking and coupling systems.

In 1893, the US Congress enacted the "Railroad Safety Appliance Act" which mandated the use of air brakes on all US railroads by 1900. A later amendment to this act made 'Janney' knuckle couplers mandatory by 1903. Cars without air brakes continued in use in Canada for a few more years, and were to be marshalled at the end of trains operated over the Big Hill.

Electronic Staff System adopted

When the Big Hill went into service in 1885, the method of controlling railway traffic was a combination of timetable schedules and train orders issued to specific trains. Train order stations were located at Laggan, Hector and Field.

Once the Big Hill operation was established, delays to train operations occurred as the number of light engine movements and trains divided into sections to navigate the Big Hill taxed the capabilities of the timetable and train order system.

qu'il fit breveter aux États-Unis en 1869. Le concept fut cependant très difficile à vendre aux compagnies de chemin de fer. Après plusieurs succès en France qui adopta les freins pneumatiques sur les trains, il fut alors capable de prouver au Gouvernement américain que ces freins à air permettraient une opération plus sécuritaire de trains plus longs et plus rapides.

En 1873, un autre américain, Eli Janney, obtint un brevet aux États-Unis pour un attelage articulé semi-automatique, qui était à la fois plus solide et plus sécuritaire que le système à barre et goupille existant alors.

À travers l'Amérique du Nord, durant les deux dernières décennies du XIXe siècle, l'augmentation du nombre des infrastructures desservies et la longueur des lignes de chemin de fer fut considérable. Mais elle s'accompagna d'une augmentation proportionnelle des accidents de train et des morts et des blessés parmi les cheminots, dûs aux systèmes rudimentaires de freinage et d'attelage.

En 1893, le Congrès américain promulgua le « Railroad Safety Appliance Act » (Loi sur la sécurité ferroviaire), qui exiga l'utilisation de freins pneumatiques par toutes les compagnies américaines d'ici 1900. Un amendement subséquent obligea l'utilisation des attelages articulés Janney d'ici 1903. Des wagons sans freins pneumatiques continuèrent de circuler au Canada pendant quelques années encore et durent être placés en queue des trains empruntant la Grande Pente.

L'adoption du canton électrique

À la mise en service à la Grande Pente en 1885, le système de contrôle du trafic est une combinaison d'horaires et d'ordres de marche pour chaque train spécifique. Les gares de contrôle furent localisées à Laggan, Hector et Field.

Après cette mise en service, des délais apparurent lorsque les déplacements des locomotives haut le pied et l'obligation de fractionner les trains pour parcourir la section de la Grande Pente surchargèrent les capacités des horaires et des ordres de marche.

This four car passenger train has just come down the Kicking Horse Grade (the temporary solution) and will continue on its journey westward within the charter acceptable 2.2% maximum grade. CPR Archives, A. 1914

Ce train de passagers de quatre voitures vient tout juste de descendre la pente du col du Cheval-qui-rue (la « solution temporaire ») et va continuer son trajet vers l'ouest sur une pente maximale de 2,2 %, acceptable selon la charte octroyée. Archives du CPR circa 1914

Uphill is another story! Here three locomotives are required to push and pull an eight car train up the Kicking Horse Grade. CPR Archives

La montée est une toute autre histoire! Trois locomotives sont nécessaires ici pour tirer et pousser un train de huit voitures au haut du col du Cheval-qui-rue. Archives du CPR

This time, the solution to traffic control issues came from Great Britain. The staff system involves issuing a metal staff from a 'block instrument' located at the entrance to a portion of track. This machine is connected electronically to all other block instruments, and will only allow one staff to be issued for a specific portion of track.

When a train is in possession of the staff, no other train can obtain another staff until the staff in possession of a train is returned to a block instrument. Because several movements in one direction were required in Big Hill operation, the electronic staff system allowed the staff issued to be broken down into several portions and issued to trains travelling in the same direction. This operation was titled the permissive system in that it permitted more than one train to occupy a controlled block. The exception to this rule was that westbound passenger trains had exclusive occupancy and the staff issued in that case was not to be broken into portions. Once all the trains had passed through the block governed by the staff, the staff was re-assembled and placed into another block instrument. A staff would then

Cette fois-ci, la solution au contrôle du trafic vint de la Grande-Bretagne. Ce fut le système du témoin, une pièce métallique provenant d'un « contrôleur de canton » situé à l'entrée du canton à protéger. Ces contrôleurs furent reliés électriquement entre eux et ne permirent qu'à un seul témoin d'être émis pour utilisation sur un canton spécifique.

Quand un train est en possession du témoin, aucun autre train ne peut obtenir de témoin tant que le témoin sorti n'est pas retourné dans un contrôleur. Puisque, à la Grande Pente, il peut y avoir plusieurs mouvements dans une direction, le système de témoin unique fut divisé en un utilisant un témoin en plusieurs morceaux, un morceau étant donné à chaque train circulant dans la même direction. Il fut intitulé système à tolérance, car il permettait à plusieurs trains d'occuper un même canton. L'exception à cette règle fut que l'on attribua aux trains de passagers en direction ouest l'occupation exclusive d'un canton et par conséquent ceux-ci reçurent un témoin entier. Quand tous les trains de même direction étaient sortis du canton contrôlé, les pièces du témoin étaient réassemblées et celui-ci

be issued to a train going the opposite direction.

It is believed that the system used was a Sykes patent electronic block system from England. After the Spiral tunnels came into service, the staff system was relocated to be used in the Connaught Tunnel in Rogers Pass. The tunnel under Rogers Pass, completed in 1916, had two tracks. When one of the tracks was taken out of service for maintenance purposes, the staff system would be used between Stoney Creek and Glacier, British Columbia. It remained in use until the 1960's when the tunnel was single tracked.

Upgrades and operational changes on the 'Big Hill' after 1900.

The 'Big Hill' remained in use long enough to receive heavier track and steel bridges.

The 2-8-0 type steam engines used on the hill were replaced with newer and more powerful locomotives of the same wheel arrangement, but with compound cylinders, and later superheating to make them more efficient.

At the same time, new freight and passenger cars were heavier. The 4.4% grades of the Big Hill still limited the size of trains that could be hauled up the grade. Downhill operation was at the very edge of controllability.

Just as operation before the advent of air brakes had required the services of brakemen to operate handbrakes atop the freight cars when descending the grade, the first air brake system required the same brakemen to operate valves on the cars called 'retainers' which held the brakes on longer than possible with the engineers brake valve on the locomotive. Emergency air brakes were twenty years in the future, and in some instances the handbrakes still had to be used to hold the train on the gradient while the system recharged after extended use. The cast iron wheels of the day would heat up, and a 'thermal stop' was required at the bottom of the 4.4% to allow the wheels and brake shoes to cool down.

The instructions for air brake equipped trains on the Big Hill were almost as complex as those before air brakes came into use.

The larger and more efficient locomotives, air brakes and track improvements allowed for faster operation and longer trains. In 1899, the locations where crews and locomotives changed both east and west of the Big Hill were altered. Calgary replaced Canmore (just east of Banff) as the eastern terminal of the 'Laggan Section' with Laggan (Lake Louise) as the western terminal. To the west, the crew and engine terminal at Donald, BC was eliminated on the 'Mountain Section' in favour of Revelstoke.

retourné dans le contrôleur. Un témoin pouvait alors être donné à un train en sens opposé.

On pense qu'il s'agissait du système Sykes, un système breveté en Angleterre. Après la mise en service des tunnels en spirale, le système de témoin fut relocalisé au tunnel Connaught près du col Rogers. Le tunnel sous le col Rogers, terminé en 1916, avait deux voies. Lorsqu'une des voies était en cours d'entretien, le système à témoin était utilisé entre Stoney Creek et Glacier, en Colombie-Britannique. Il resta en fonction jusque dans les années 1960, quand l'une des deux voies dans le tunnel fut enlevée.

Améliorations et changements opérationnels sur la Grande Pente après 1900

La Grande Pente resta en fonction assez longtemps pour qu'on y installe des rails plus lourds et des ponts d'acier.

Les locomotives 2-8-0 utilisées sur la colline, furent remplacées par de nouvelles plus puissantes avec le même arrangement d'essieux, mais avec des cylindres compound et ultérieurement des surchauffeurs pour en améliorer l'efficacité.

Dans le même temps, les nouveaux wagons de passagers et de marchandises furent plus lourds. Le gradient de 4,4 % de la Grande Pente limita encore la taille des trains qui pouvaient être tirés sur elle. Quant aux descentes, elles s'effectuèrent à la limite des capacités de contrôle.

Avant le passage au frein pneumatique, il fallait les services de serre-freins pour opérer les freins à main du haut des wagons de marchandises lors des descentes. Les premiers freins à air demandèrent eux que ces employés actionnent les soupapes rétentrices sur les wagons qui maintenaient l'action de freinage plus longtemps que cela n'était possible pour le mécanicien dans la locomotive. Les freins d'urgence n'arrivèrent que vingt ans plus tard et, à certaines occasions, il fallut encore utiliser les freins à main pour garder le contrôle d'un train sur la pente pendant la recharge du système de freinage à air après un usage prolongé. Les roues de fonte coulée de l'époque pouvaient surchauffer et il fallait faire des « arrêts thermiques » au pied de la côte de 4,4 % pour laisser refroidir les roues et les sabots de freins.

Les instructions pour l'utilisation des freins pneumatiques à la Grande Pente furent presque aussi complexes que celles avant l'utilisation de tels freins.

L'arrivée de locomotives plus puissantes et plus efficaces, l'amélioration de la voie et l'utilisation des freins pneumatiques permirent des opérations plus rapides et des trains plus longs. En 1899, la localisation des points de changement du personnel et des locomotives fut modifiée et à l'est et à l'ouest de la Grande Pente. Calgary remplaça Canmore (juste à l'est de Banff) comme terminus est de la section « Laggan » et Laggan (Lac Louise) devint son terminus ouest. À l'ouest, sur la section « montagne », le

TO ENGINEMEN, TRAINMEN, SAFETY SWITCH TENDERS AND OPERATORS AT HECTOR AND FIELD.

Regulations for Operating Passenger Trains on the Kicking Horse Grade

Speed Limit and Time Allowance of Trains, Hector to Field.

STATIONS	Distance Miles.	Speed.	Running Time.
HECTOR to Summit Board	0.46	5 Miles per Hour	5 Mins.
to No. 1 Safety Switch	1.25	8 do.	10 do.
to No. 2 Safety Switch	0.94	8 do.	7 do.
to No. 3 Safety Switch	0.9	8 do.	5 do.
to Yoho	0.4	8 do.	4 do.
to Tunnel	0.77	8 do.	6 do.
to East Switch	2.4	15 do.	10 do.
FIELD			47 Mins.

1—Unless otherwise specified the rules and clauses referred to in this circular will be found in the "General Rules for the Care and Use of Automatic Air Brake and Air Signal," issued July 1902.

2—All West bound passenger trains must stop at Stephen, where the handles of pressure retaining valves will be turned up (Rule 18 a), brakemen taking this opportunity to see that the small exhaust port of every valve is clear by inserting a piece of scant 1/16" wire in the aperture. The retaining valves on tenders to be looked after by enginemen.

Test

Immediately the train arrives at Hector brakemen will start from the centre and proceed to each end of train, turning down retaining valves and watching carefully to see that a proper exhaust follows, on arrival at the end of train both will get off on the engineer's side. The engineer will then be signalled to apply brakes, and must do so by a service application reducing pressure in train line 15 lbs. Brakemen must then work from their respective ends of train towards centre carefully examining the brake on each car to see that it is applied, noting the piston travel, that pistons do not leak back, and the brake gear generally is in good condition.

Should a leaky piston be discovered in the equipment of a car, or any defect in the brake system which cannot be remedied; **Such car must be bled of all air and the hand brakes used to Field.**

When brakemen meet at centre of train after satisfying themselves the brake apparatus is in good working order, the signal to release will be given engineer who will release brakes by placing the handle of brake valve in running position (note this is the only time brakes may be released by this method). The brakemen will again walk towards their respective ends of train, noting as they go that all brakes are properly released, shoes are clear of wheel, and there are no leaks at triple exhaust, or the pressure retaining valves on cars equipped with them. After making certain by this examination that brakes have released properly, the handles of all retaining valves must be again turned up.

Should it be necessary to change in the slightest degree any part of the air brake apparatus after this test has been made, another final test of brakes will be required before the train is allowed to proceed.

The brake test must be carefully supervised by conductor who must make certain that on all cars the piston travel is properly adjusted, retainer in good order, or else air cut out and hand brake ready for operation, before giving the signal to start, he must also notify the engineer when a car is cut out or any change made in the brake equipment and see that the proper test is carried out afterwards.

3—Enginemen must not start with a train from Hector until they have made certain all reservoirs are fully charged.

The driver brakes are in all cases to be worked automatically with train brakes.

Approaching the Grade.

4—After leaving Hector, and before reaching the sign post on North side of track, about three quarter miles West, which marks the beginning of the descent, engineer will make an application of brakes sufficient to reduce speed of train, and immediately follow by a release of brakes in order to bring the retaining valves into action, and to fully

continued on page 76

Stan's Photo Gallery

March - April, 2015

By Stan Smaill

Version française : Michel Lortie

Introduction

Perhaps it is fateful that Phil Mason's treatise on the CPR's Big Hill is to be published in this issue of Canadian Rail. Your Photo Editor recently concluded a 47 year career with Canadian Pacific which began in Big Hill country back in 1967.

As hard as the work was for a seventeen year old track labourer on Regional Steel Gang No. 1, the job was an education and a chance to live the dream of working for the CPR in the Rockies. The steel gang boarding cars were parked on sidings at Stephen, the summit of the Continental Divide and at Yoho between the Upper and Lower Spiral Tunnels. Our job was to transpose rails on the curves in both tunnels to increase the rail wear lifespan of said rails before replacing them.

Back when I worked on the Big Hill section of the CPR's Laggan Subdivision, I often wondered how the railway operated back in the days before the Spiral Tunnels cut the ruling grade from 4.5 per cent to less than half that value. Phil Mason's treatment of the subject makes it clear as to how it worked and why. This comes as no surprise as Phil spent most of his over thirty year career in CPR train and engine service as a locomotive engineer in the mountain territory between Field and Kamloops, BC.

As the CPR Employee Timetable No. 18 said, "Obey the rules and run no risks" as we travel up and down the CPR's Big Hill with retired CPR mountain section locomotive engineer Phil Mason.

This Photo gallery is dedicated to the memory of the late Floyd Yeats, legendary CPR Calgary locomotive engineer and to great friend Sheryl Ann Moore of Kelly's Pub in Valois, Quebec, hard by the CPR main line. As a non-rail enthusiast, Sheryl showed a special interest in how trains were operated up and down the Big Hill in pre-Spiral Tunnel times, when I was preparing this column recently in her bar!

Les photos de Stan

Mars - Avril 2015

Par Stan Smaill

Version française : Michel Lortie

Avant-propos

Quelle belle coïncidence ! L'article de Phil Mason sur l'histoire de la « Grande pente (The Big Hill) » du CP est publiée dans ce numéro de Canadian Rail, alors que votre éditeur-photo vient tout juste de terminer une carrière de plus de quarante-sept ans comme employé du CP, carrière amorcée justement dans la région de la « Grande pente » en 1967.

Le travail était très dur pour moi ; je n'avais que dix-sept ans, employé de l'équipe de voies régionales numéro 1. Cependant, il m'a permis de recevoir une bonne formation et de réaliser mon rêve de travailler pour le CP dans les montagnes Rocheuses. Notre équipe était logée dans des wagons-dortoirs, garés sur des voies de garage, à Stephen, au sommet de la ligne du partage des eaux ou à Yoho, entre les deux tunnels en spirale. Notre travail consistait à changer les rails courbés de droite à gauche afin que l'usure de l'acier se fasse également d'un côté comme de l'autre avant de devoir remplacer les rails.

Alors que je travaillais dans le secteur de la « Grande pente » de la sous-division Laggan du CP, je me suis souvent demandé comment le chemin de fer pouvait fonctionner avant le perçage des deux tunnels en spirale. La pente était alors de 4,5 degrés. Grâce aux tunnels percés, elle a été ramenée à moins de la moitié. L'article de Phil Mason vous apprendra comment on procédait alors. Phil connaît bien le sujet, ayant mené une carrière de mécanicien de locomotive pendant plus de trente ans dans cette région, entre les villes de Field et de Kamloops, C. B.

« Obéissez aux consignes et ne prenez pas de risque » (inscrit dans l'horaire numéro 18 de la sous-division Laggan) alors que nous allions voyager du haut en bas sur le CP de la « Grande pente » avec l'ingénieur émérite de la locomotive, Phil Mason.

Je dédie cette galerie de photos au défunt Floyd Yeats, le légendaire mécanicien de locomotives de Calgary ainsi qu'à ma grande amie, Sheryl Ann Moore , du Kelly's Pub de Valois au Québec, situé tout près des voies principales du CP et qui, bien que ne connaissant rien aux trains, était intéressée par la légendaire « Grande pente », alors que j'écrivais cet article dans son bar.

Photographer Bill Linley used this marvellous Ron Ritchie image of CPR S2a 2-10-2 5811 piloting the Selkirk road engine on Train No. 8 The Dominion eastbound out of Field, British Columbia back on September 17,1951 in his 2011 book titled Canadian Pacific in Color - Volume 2 Western Lines. I could not resist reprising it considering the Big Hill subject matter of our Photo Gallery in this issue of Canadian Rail. R. S. Ritchie

L'auteur Bill Linley a utilisé cette magnifique photo pour illustrer son livre « Canadian Pacific in Color, volume 2 », Western Lines, qui montre la CP S2a 2-10-2, 5811, suivie d'une Selkirk, en tête du train numéro 8 « The Dominion », en direction est, au départ de Field, C. B., le 17 septembre 1951. Je n'ai pu résister au plaisir de reprendre cette photo afin d'illustrer cet article qui porte sur la « Grande pente ». R. S. Ritchie

CPR heavyweight sleeper Godfrey passes in review as No. 8, The Dominion, ascends Field Hill behind 2-10-2 5811 and a streamlined T class Selkirk 2-10-4 on September 17, 1951. John Godfrey, this one's for you! R. S. Ritchie

La voiture-lit « Godfrey » du CP fait partie du train numéro 8 « The Dominion » qui monte la pente Field derrière la 2-10-2 5811 et une Selkirk profilée de type T 2-10-4, le 17 septembre 1951. John Godfrey, cette photo est pour toi ! R. S. Ritchie

On their memorable trip west in 1951, which included a stopover in Field, Ron Ritchie and Omer Lavallee walked out into the Kicking Horse Flats area just east of Field. The flats provided a marvellous view of a Mikado powered double-headed eastbound CPR freight assisted by an S2a 2-10-2 pushing on the rear. The sound of hard working CPR steam was audible for almost an hour as the freight climbed Field Hill. Both photos R. S. Ritchie

Au cours d'un mémorable voyage dans l'Ouest Canadien, Ron Ritchie et Omer Lavallée se sont arrêtés à Field et ont marché jusqu'à la passe « Kicking Horse » à l'est de Field. Ils eurent une vue imprenable sur un train amené par deux Mikados et assisté d'une S2a 2-10-2 qui poussait à l'arrière. Le bruit de ces trois locomotives fut audible pendant une heure alors que le train gravissait la pente Field. Les deux photos sont de R. S. Ritchie.

At the east end of Field Yard on September 17, 1951, Ron Ritchie found R class 2-10-0 5770 beside the power house facing the ageless mountains of Kicking Horse Pass. The cantilevered semaphore signals were fixtures at Field before target signals and CTC replaced them. R. S. Ritchie

À l'extrémité est de la gare de triage de Field, le 17 septembre 1951, Ron Ritchie a pris cette photo de la 2-10-2 5770 près de la centrale thermique et devant l'énorme montagne qui domine la passe « Kicking Horse ». Les anciens signaux, de type sémaphore, étaient encore utilisés avant la venue du contrôle centralisé de la circulation. R. S. Ritchie

As the steam era in the CPR Rockies waned in September 1951, the original T1a class 2-10-4 Selkirks had been largely relegated to freight and occasional pusher service. Here T1a 5915 takes a spin on the turntable as Field's unusually tall water tank broods above. R. S. Ritchie

L'ère de la vapeur commençait à décliner en septembre 1951 et l'une des premières locomotives à vapeur du type T1a 2-10-4 Selkirk avait été affectée aux trains de marchandises ou comme pousse-wagons sur les trains de ligne. La T1a 5915 est sur la table tournante de la rotonde de Field dominée par le château d'eau surdimensionné. R.S.Ritchie

Meet at Stephen! The 1405, the first CPR FP9, leads flagship train No. 1, The Canadian, at a meet with eastbound Train No. 6, The Expo Limited, at Stephen in July 1967. Stephen siding is at the summit of the Continental Divide in the Canadian Rockies on the CPR Laggan Subdivision. It seems fitting That the rear car on Train No. 6 is Yoho Park! Stan J. Smaill

Une rencontre à Stephen ! La première des séries de diesels, la FP9 du CP numéro 1405, est en tête du train amiral du CP « The Canadian - numéro 1 » et rencontre ici le train numéro 6 « The Expo Limited », en juillet 1967. Stephen, sur la sous-division Laggan du CP est située au sommet de la ligne de partage des eaux dans les montagnes Rocheuses canadiennes. Il semble tout à fait juste que le dernier wagon-observatoire du train 6 soit nommé Yoho Park ! Stan J. Smaill

Train No. 2, the eastbound Canadian led by the last CPR FP9 1415, is about to penetrate the cool darkness of the Lower Spiral Tunnel on a lovely Sunday in July 1967. On this day, No. 2's FP9 is assisted by passenger GP9's from the Calgary based CPR diesel fleet. Stan J. Smaill

Par cette belle journée d'un dimanche de juillet 1967, le train numéro 2 « The Canadian », en direction est, est tracté par la 1415, dernière de série des FP9 du CP. Le train s'apprête à pénétrer dans la fraîche pénombre du premier et du plus bas des deux tunnels en spirale. La locomotive FP9 est ici assistée de deux GP9 provenant de la flotte de locomotives du CP basée à Calgary. Stan J. Smaill

The view from above. A westbound CPR freight with five GP9's using their dynamic brakes to great advantage exits the Lower Spiral Tunnel down Field Hill back in July 1966. Within a year, a new sound would come to the mountains when brand new 5500 series SD40s from GMD in London, Ontario began displacing the older first generation diesels. J. Wallace, Smaill collection

Juillet 1966 : un long train de marchandises du CP, tracté par pas moins de cinq locomotives de type GP9, descend la pente, en direction ouest, à la sortie du plus bas des deux tunnels en spirale. Ces locomotives utilisent au maximum leur freinage dynamique. Elles seront bientôt remplacées par la nouvelle génération de locomotives diesel de la série 5500, des SD40 construites par GMD de London, Ontario. J. Wallace, Collection Smaill

Over and under and not posed! CPR FP7 4040 is about to cross over the west portal of the Lower Spiral Tunnel and the rear of its train back in July 1966. CPR 4040 is less than half a mile from the west switch of Yoho siding. Photographer Jim Wallace is the son of Donald B. Wallace, former director of Public Relations and Advertising for Canadian Pacific. J. Wallace, Smaill collection

Par-dessus et par-dessous ! La FP7 4040 du CP arrive au-dessus du portail d'entrée ouest du plus bas des deux tunnels en spirale, en juillet 1966. Elle passe au-dessus de son wagon de queue ! Elle est à moins d'un demi-mille de la voie de rencontre de la gare de Yoho. Jim Wallace, auteur de cette photo, est le fils de Donald B. Wallace, ex-directeur de la publicité et des relations publiques du CP. J. Wallace, Collection Smaill

The new order was well established by December 1969 when CPR SD40 5529 and three of her companions stood ready to depart Field, BC on train No. 901. Immediately behind the engines is an icicle breaker car made from a 1929 mini box car. The racks on this converted box car would dislodge icicles in tunnels that might otherwise fall on and damage the automobiles behind on the open car carriers. Stan J. Smaill

La nouvelle génération des locomotives diesel est bien établie, en ce mois de décembre 1969, alors que la SD40 5529 est en tête de trois autres semblables avec le train 901, au départ de Field, C. B. Juste derrière les locomotives, on peut voir un ancien mini-wagon datant de 1929, modifié avec un bâti en acier pour briser les glaçons qui se forment dans les tunnels, afin de protéger les automobiles transportées, à cette époque, dans des wagons découverts. Stan J. Smaill

The ageless mountains echo to the chant of twin General Motors 567 diesel engines as CPR FP7 1403 and a mate lift eastbound CPR Train No. 2, The Canadian, by the station at Yoho, BC in June 1972. Your Photo Editor began his railroad career at this location over forty-seven years ago. Stan J. Smaill

En juin 1972, le chant des deux moteurs diesel 567 de General Motors se répercute en écho sur les hautes montagnes alors que la FP7 1403 du CP et une compagne de même type sont en tête du train numéro 2 « The Canadian », en direction est, devant la gare de Yoho, C. B. C'est à Yoho que votre éditeur-photo a commencé sa carrière de cheminot, il y a plus de quarante-sept ans. Stan J. Smaill

Going away. CPR No. 2, The Canadian leaves Yoho for the east trailed by the familiar Park observation car back in June 1972. In a moment, FP7 1403 will enter the west portal of the 3255 foot Upper Spiral Tunnel. Stan J. Smaill

Le train numéro 2 du CP « The Canadian » quitte la gare de Yoho, en direction est, avec un wagon-observatoire de la catégorie Park en fin de convoi. Dans quelques minutes, la locomotive de tête, la FP7 1403, va pénétrer dans le tunnel en spirale supérieur, long de 3 255 pieds. Stan J. Smaill

CP Rail FP9 1414, assisted by a passenger GP9 and another passenger F unit, repose at Field, BC in August 1972 with train No. 2, the eastbound Canadian. After changing crews, FP9 1414 will begin its assault on Field Hill which features both Spiral Tunnels. Seats in both dome cars will be at a premium, but the best view is through the front windows of FP9 1414! Stan J. Smaill

En août 1972, la locomotive FP9 1414 du CP, dans un attelage mixte d'une GP9 et d'une autre FP9, est à l'arrêt en gare de Field, C. B., pour un changement d'équipage. Elles sont en tête du train numéro 2 « The Canadian » en direction est. Le nouvel équipage de la 1414 va affronter l'ascension de la « Grande pente » et des deux tunnels en spirale à partir de Field. Les sièges dans les deux wagons d'observation seront certes tous occupés, mais la meilleure vue sera celle du mécanicien du train à travers le pare-brise de la locomotive ! Stan J. Smaill

Forty-seven years after the fact. In June 1972 an almost new SD40-2 5598 leads hotshot freight 901 downgrade past the site where CPR fireman Seth Partridge left his engine back in 1925 to warn the residents of Yoho, BC that a mud and rock slide was about to engulf their little town. Formerly named Mars, the CPR renamed the siding just east of the Upper Spiral Tunnel to Partridge in recognition of fireman Partridge who saved the day for the folks in Yoho.

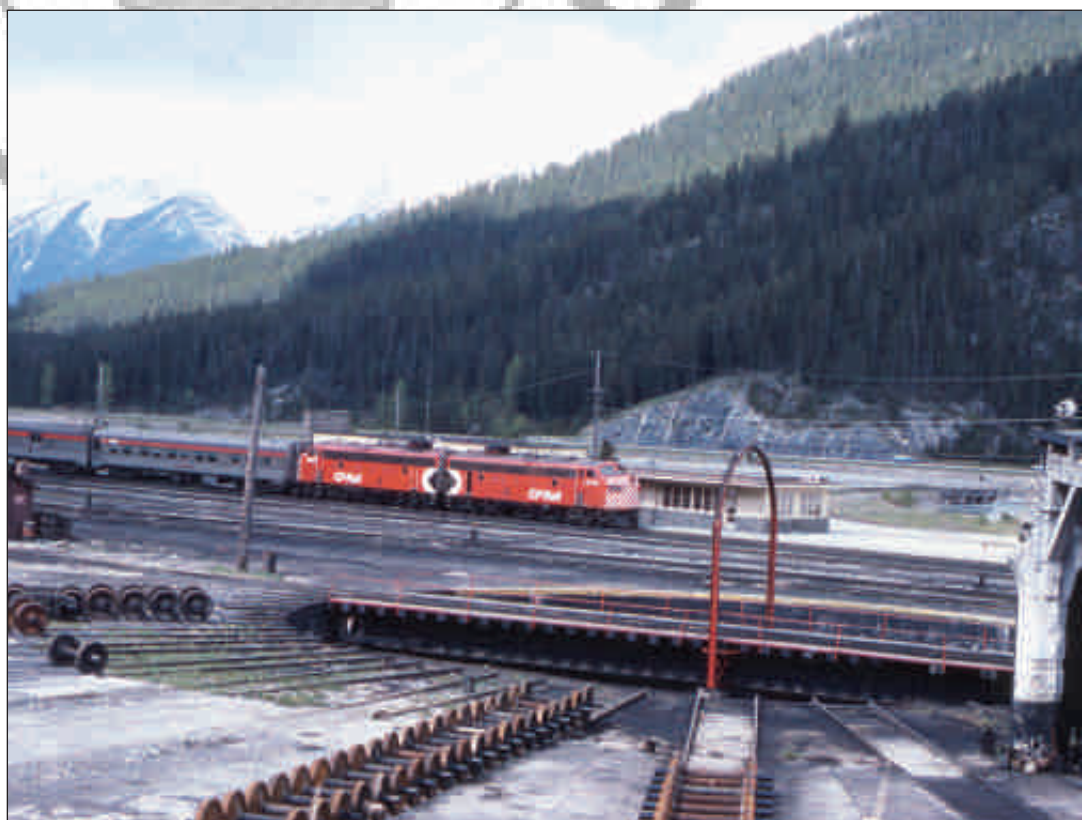
Quarante-sept ans plus tard, en juin 1972, la toute neuve SD45 -2 5598 du CP est en tête du train 901 qui passe à l'endroit où, en 1925, le chauffeur Seth Partridge a quitté sa locomotive et a couru le long d'un petit sentier en contrebas pour aller alerter les occupants de Yoho de la présence d'une avalanche de boue et de roches qu'il avait vue descendre de la montagne. Tous furent saufs et le CP a renommé l'endroit appelé Mars par Partridge afin d'honorer le geste héroïque du chauffeur.

In the second view, CP Rail SD40-2 5598 is just about where the 1925 slide blocked the main at Yoho. To take these two photos, your Photo Editor scrambled down the bank between the two levels following approximately the same path as fireman Partridge did back in 1925! Stan J. Smaill

La deuxième photo montre la même locomotive passant à l' endroit exact où l'avalanche s'est abattue, pour prendre ces deux photos. Votre éditeur-photo a dû suivre le même petit sentier escarpé que celui parcouru par le chauffeur Partridge en 1925. Stan J. Smaill

Back in 1972, foliage had yet to obscure the classic view between the two Spiral Tunnels. On a June afternoon that year, an eastbound manifest freight powered by an SD40-GP9 combo climbs eastward near Yoho, B.C. having just exited the 2,921 foot Lower Spiral Tunnel. Stan J. Smaill

Photo prise en 1972 de l'espace à découvert entre les deux tunnels en spirale. Un long convoi de marchandises monte la pente, en direction est, derrière un attelage composé de SD40 et de GP9. Ce convoi vient de sortir du tunnel inférieur, long de 2 921 pieds. Stan J. Smaill



Two CPR passenger F units pause at the new station at Field with train No. 2, the eastbound Canadian, in May 1976. At that time, a portion of the roundhouse was still standing and the turntable was still used. This photo was taken from the famous roundhouse path which linked the Field Yard with the famous Monarch Hotel referred to in the song The Field Speakeasy! Stan J. Smaill

Deux locomotives diesel de type F du CP sont en tête du train numéro 2 « The Canadian » en gare de Field, C. B., en mai 1976. À cette époque, une partie de la rotonde était encore debout et la table tournante était encore utilisée. Cette photo a été prise depuis le sentier qui allait du triage de Field au légendaire Hôtel Monarch où se réunissaient les cheminots. Stan J.Smaill

CPR FP9 1414 has a long eastbound Canadian well in hand as it passes the old station at Yoho, BC in August 1972. Before the era of pressure maintaining air brakes and dynamic brakes on diesels, most westbound trains were required to stop at Yoho to let wheels cool and to do a thermal check of air brakes. Stan J. Smaill

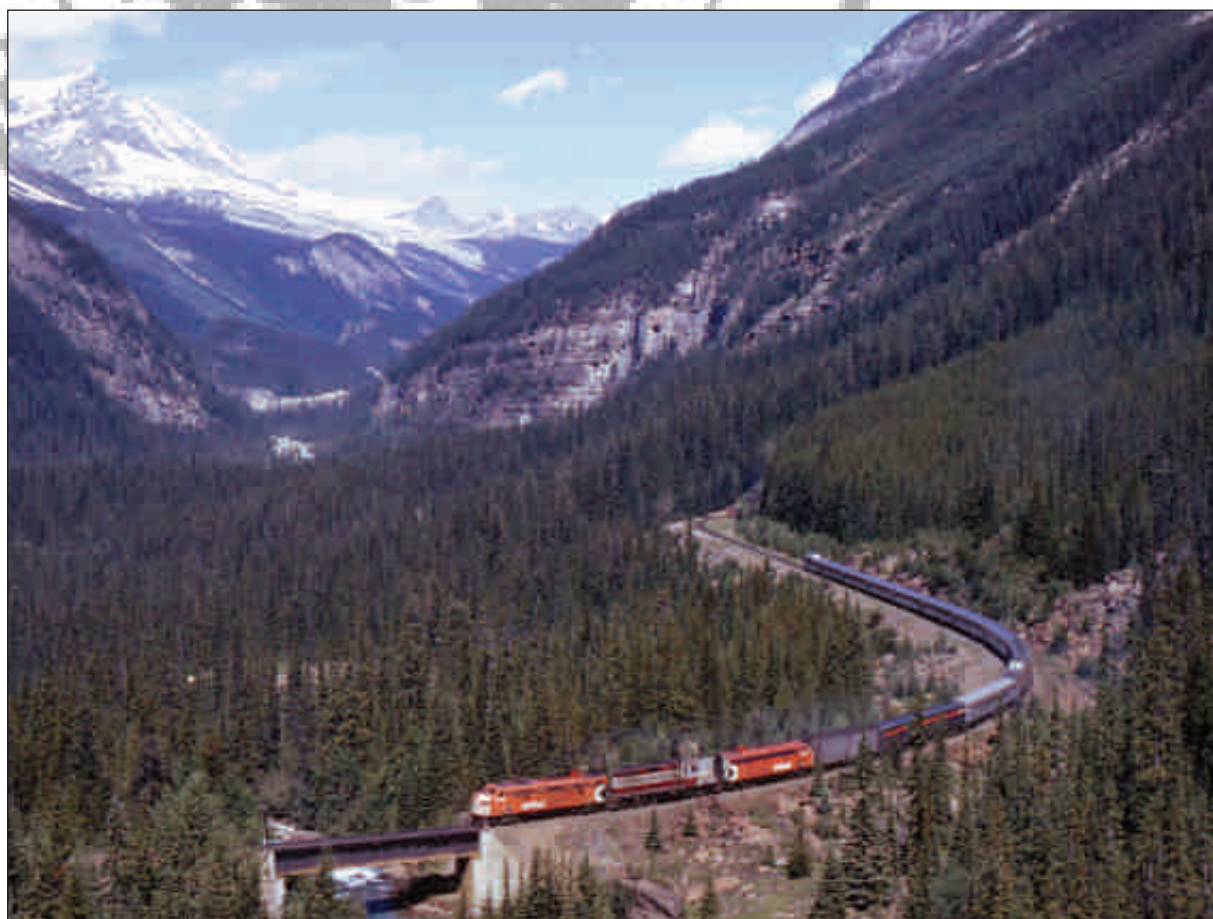
La FP9 1414 du CP amène un long convoi de passagers en direction est. Il passe ici devant l'ancienne gare de Yoho, C. B., en août 1972. Avant l'arrivée des nouveaux systèmes de freinage et des freins dynamiques des locomotives diesel, la plupart des convois en direction ouest devaient faire une pause à Yoho pour laisser refroidir les freins et les vérifier. Stan J. Smaill

In July 1973, Edward (Ted) Wickson made a trip west and made this and the following two images in 'Big Hill' country. Here CP 1406 is on the point of Train No. 2, the eastbound Canadian; the train is beside the Kicking Horse river on the Laggan Subdivision and is starting its climb up to the lower spiral tunnel. CRHA Archives, Fonds Wickson

Quand Edward (Ted) Wickson a fait un voyage dans l'Ouest Canadien en juillet 1973, il a rapporté de nombreuses photos, dont les deux suivantes. Sur celle-ci, la 1406 du CP est en tête du train numéro 2, en direction est, et passe le long de la rivière Kicking Horse pour amorcer la montée vers le tunnel inférieur en spirale. La deuxième photo apparaît à la page suivante. Archives ACHF, Fonds Wickson

The three locomotives and thirteen cars comprising the eastbound Canadian make the station stop at Field on July 9 1973. CRHA Archives, Fonds Wickson

Trois locomotives diesel et treize wagons forment le convoi du train « The Canadian » en direction est. Il s'arrête ici en gare de Field, C. B. Archives ACHF, Fonds Wickson



The eastbound Canadian has passed through the lower spiral tunnel and is about to enter the upper spiral tunnel on its journey towards Montreal. This photo was taken at the same location as the photo on the top of page 71. CRHA Archives, Fonds Wickson

Le train « The Canadian », en direction est, vient de sortir du tunnel inférieur et s'apprête à aborder le tunnel supérieur en direction de Montréal. Cette photo a été prise au même endroit que celle montrée en haut de la page 71. Archives ACHF, Fonds Wickson

The Field Speakeasy or The Monarch Song

Inspired by a lovely Nicholas Morant sunset photo of CPR time freight 901 'heading west from Calgary' on the cover of the December 1962 CPR Spanner, I came to write the song The Field Speakeasy in 1974. The song was based on remembrances of my own CPR experiences in Big Hill country and the stories that were told in Field's classic railroad hotel, the Monarch.

The Monarch Hotel was a classic railroader's speakeasy and Revelstoke crews from the west and Calgary crews from the east laying over between runs would congregate and tell their tales of railroading in the mountains.

In 1976, as part of a Concordia University Canadian Studies tour of the Canadian West, Joanne MacPherson and I gave a guest lecture on the CPR Big Hill and the Spiral Tunnels to our group. After the lecture, the group retired to the Monarch Hotel for lunch and the Monarch Song (as it had come to be known by then) was played for the first time in BC!

Le légendaire Hôtel Monarch à Field, C. B.

En 1974, j'ai écrit la chanson « The Field Speakeasy ». Cette dernière m'a été inspirée par la page couverture du numéro de décembre 1962 du magazine « Spanner » qui affichait une magnifique photo de Nicholas Morant, montrant le train de fret 901 du CP quittant Calgary, en direction ouest, au soleil couchant. J'ai écrit cette chanson à partir de mes souvenirs et de mon expérience dans la région de la « Grande pente » et de toutes les histoires racontées dans ce bar légendaire appelé « Monarch ». Ce bar était l'endroit où se réunissaient tous les cheminots en provenance, soit de Calgary à l'est ou de Revelstoke à l'ouest, alors que ceux-ci étaient cantonnés à Field en attendant leur prochain départ.

En 1976, à Field, j'ai donné une conférence, en compagnie de Joanne MacPherson, sur la « Grande pente » et ses tunnels en spirale, à des universitaires de l'Université de Concordia dans le cadre des Études canadiennes. Après la conférence, les participants se sont rendus à l'Hôtel Monarch pour le dîner et à cette occasion, la chanson a été interprétée pour la première fois en Colombie-Britannique.

Cover of the December 1962 CPR SPANNER showing time freight 901 leaving Calgary at sunset. Nicholas Morant, CPR Archives

Page couverture de la revue des employés du CP « Spanner » de décembre 1962 affichant le train de fret 901 quittant Calgary pour l'ouest, au soleil couchant. Nicholas Morant, Archives CP

In May 1976 the Monarch Hotel was still serving railroaders and others. The roof-top sign had disappeared but true life railroad stories could still be heard in the beer parlour of the Monarch! Joanne MacPherson, Smaill collection

En mai 1976, l'hôtel Monarch recevait encore des cheminots et d'autres voyageurs. La grande affiche sur le toit était disparue, mais les bonnes histoires de chemins de fer y étaient toujours racontées dans le bar. Joanne MacPherson, collection Smaill

In an undated photo CPR T1c 2-10-4 5935 is on the turntable at Field, B.C., the famous Monarch Hotel rises in the background with the roof mounted sign still on the building above the dormers. CPR 5935, now part of the CRHA collection at Exporail, was the last standard gauge steam locomotive built in Canada. Allan Sherry collection

Cette photo, non datée, montre la locomotive 5935 du CP, une 2-10-4, sur la table tournante de la rotonde de Field, C. B. On peut voir, à l'arrière-plan, l'hôtel Monarch qui avait encore, à cette époque, son affiche sur le toit. Cette locomotive fut la dernière locomotive à vapeur à écartement standard construite au Canada. Elle fait désormais partie de la collection de l'ACHF au musée Exporail. Collection Allan Sherry

THE FIELD SPEAKEASY - or THE MONARCH SONG

(as it came to be known!)

1. *Freight train by the junkyard,*
   Heading west from Calgary,
   Sunset on the mountains, behind them is B.C.
   There's winter on the wind tonight,
   Tomorrow maybe snow,
   When we bring this train down into Field,
   To the Monarch we will go!

REFRAIN

Up we go the Monarch,
Up the roundhouse path,
Well worn by many trainmen,
Who over it have passed.
Sitting 'round the tables,
Hear the stories and the jokes,
About bringing them o'er the mountains,
From Field to Revelstoke!

2. *There are tales about the silk trains*
   and storied Rogers Pass;
   Of Big Hill safety switchmen,
   Listening for a whistle blast;
   Of how a T class steamer,
   could out pull ten SD's,
   And of the record runs they made,
   From Field to Calgary!

REFRAIN

3. *There are legends round the Monarch,*
   about a hostler by the name of Squeak;
   Who one day bought a round for the town of Field,
   For going on a week.
   And of Dispatcher Callaghan,
   A man of skill and wit;
   Who one day put The Canadian,
   In the Field turntable pit!

REFRAIN

4. *So onward roll the freight trains ,*
   Behind the big SD's;
   And onward flow the stories,
   with everlasting ease.
   And if you're ever thirsty,
   Or looking for good cheer,
   Just walk up to the Monarch,
   And have yourself a beer!

REFRAIN AND END.

Stan J. Smaill
Montreal, Quebec
November 11, 1974.

continued from page 61

recharge auxiliary reservoir before the heavier part of the grade is reached. The speed must be sufficiently reduced to accomplish this, and sand used, if necessary, but in no case must train be allowed to exceed a speed of eight miles per hour at any point, which rate must not be exceeded until after the Tunnel is passed.

Conductors and enginemen are both responsible for seeing that the Brake is in perfect working order, and properly connected through the whole train before starting from Hector. No train will leave Hector until the Conductor has ascertained that the nearest switch tender is on hand.

No train or light engine will follow a passenger train, or section, carrying passengers out of Hector until such train has been reported as having arrived at Field and is protected there by having switch set.

It is the duty of the Conductor of a train containing passengers to register immediately he arrives at Field, and of the Operator at Field to advise Hector accordingly.

They must not risk safety of train in the interest of time, but must carry out these directions positively and carefully.

Condition of Engine and Equipment.

5—The attention of enginemen is specially directed to Rule 16 (A). Air pumps must be in first class working condition, also the sand pipes and valves; and a full supply of sand must be on engine.

Control of Train on Grade.

6—The speed must be kept within required limit by light applications of air, but, under no circumstances must brakes be released until the speed of train is such that the auxiliary reservoirs can be recharged to standard pressure of 70 lbs. before it will again be necessary to apply brakes.

The control of train with air brakes absolutely depends upon ability of engineer to maintain the maximum train line pressure without exceeding for one moment a speed of eight miles per hour.

If unable to control speed in this manner, and the engineer finds it necessary to make a further application before reservoirs are properly recharged, he must immediately stop train and hand it over to trainmen to control with hand brakes, as per Rule 17 (B), reserving air for emergencies.

Remember that safety in handling trains down the grade is assured only by having them under complete control at the summit.

Always bear in mind that brake resistance decreases as the speed of train increases, and therefore the absolute necessity of having trains under control from the start.

Train stopping on Grade.

7—In case of a train being stopped on the grade through over-application of brakes, the engineer will move it carefully gently using steam. Caution must be exercised in doing this so that engine be not started violently and cause damage to draft gear.

Burst Air Hose.

8—Should air hose burst, sand must be used to stop train as quickly as possible. When stopped the engineer will reverse his engine, and use steam enough to hold it against train. He must notice by air guage that train pipe is empty, and occasionally move handle of engineer's valve quickly from "lap" to full release and back to "lap" to show trainmen by the escape of air location of damage to hose or pipe. The defect having been located trainmen will at once proceed to change hose in accordance with Rule 19, except that train pipe cocks must not be closed for fear of front brakes releasing. If it is impossible to effect repairs promptly, the train must be controlled with hand brake but with the air cut in as far as possible and reserved for emergencies.

When an air signal hose bursts engineer will cut out air at reducing valve, and make repairs, and test at Field.

Air Brake becoming inoperative.

9—If from any cause the engineer finds he is unable to operate brakes with the engine valve, he must immediately signal for brakes, use sand and endeavor to stop train with his engine. When Conductor and Brakemen hear the alarm signal for brakes, they must at once operate Conductor's valve, see Rule 23 (A), and if this does not immediately check speed of train, apply hand brakes as quickly as possible.

Changing to Hand Brakes.

10—Should any defect develop in the air brakes after passing the summit of grade, the engineer must at once stop train and hold it with engine and reserve of air, notifying trainmen to use hand brakes. The cars must then be bled off one at a time commencing from the rear and hand brakes applied as directed in Rule 19. The train will then be controlled by hand brake and engine to Field, where necessary repairs will be effected.

Sliding Wheels.

11—It is the duty of Conductors to see that brakemen drop off the front end of cars while descending the grade, and watch the action of the brakes and the rotation of wheels. When wheels are detected sliding the Conductor and Brakemen must at once take steps to avoid damage by releasing the retaining valve as much as actually necessary to allow the wheels to revolve **and no more** (and as directed in Rule 18 (D)), and after turning up valve again they must see that the small port is not closed with dirt. No retaining valve is to be entirely closed on account of such trouble with wheels. If these continue to slide the air brakes must be cut out and hand brakes used on that car to Field.

Reporting defects in Air Brakes.

12—Cutting out air brake, a burst hose or air pipe, or anything affecting the working of air must be reported on arrival at Field, and form 74 giving full particulars of trouble and action taken will be submitted by Conductor and Engineer.

Releasing Retainers.

13—When approaching the mile board East of Field, engineers will give a whistle signal to turn down retainers, and brakemen must act upon it starting one from rear and one from centre of train, working forward until all have been released with the exception of box baggage or refrigerator cars on front of train, which may be left until arrival at Field.

Protection at Field. 14—On the arrival of a passenger train from either direction at Field station platform, it is the duty of the brakes men of such a train to **immediately set the East switch** for the crossing siding as protection against a descending train or light engine.

Signal for Switches. 15—One long whistle must be sounded at the whistle board located about one thousand feet East of each safety switch and provided the train is fully under control and not exceeding the prescribed speed, four short blasts must be sounded at the sign board showing switch number, as a signal for the switch to be thrown for the main line.

Safety Switches. 16—The normal position of a safety switch is for the spur, and an engineer must not whistle for a switch to be set for the main line, unless the speed of his train is within the required limit of eight miles per hour, and he is satisfied he can maintain it so. Engineers must promptly report any case of a switch being turned for the main line before they signalled for it.

In case of failure to so report, engineers will be held equally responsible with switchmen.

Switch Tenders. 17—When a long whistle is sounded at whistle board, the switch tender must take position at lever of switch and be fully prepared to throw the switch upon receipt of the proper signal (four short whis les) sounded at signal board shewing switch number.

It is the special duty of every switch tender to closely observe the speed of an approaching train, and unless he is certain it conforms to the regulation, namely eight miles per hour **he must not set switch for main line,** thus requiring the train to take safety spur or stop before reaching it.

General instructions for switch tenders are given in rules for the operation of freight trains.

Alarm for Train exceeding speed. 18—If a train is seen to be running faster, for any cause, than its prescribed speed, the electric gong must be sounded by pressing the button in watch shack, which will be a signal to all switchmen and also the operator at Field that a train is running too fast. Switchmen receiving such a signal will immediately station themselves at switch and carry out instructions contained in these instructions.

Assisting Engines. 19—To cut off assisting engines whilst a train is in motion is absolutely forbidden.

Operators at Hector. 20—Operators at Hector must use their order board to hold trains to comply with rules.

ENGINEMEN, TRAINMEN, OPERATORS AND SWITCH TENDERS:
Obey the Rules, be watchful, run no risks.

Extract from CPR Employee Timetable No. 13, June 14, 1908 indicating the Regulations for the Operation of Passenger Trains on the Kicking Horse Grade. All CPR passenger trains were equipped with air brakes from the start of operations on the Big Hill. Ronald Ritchie collection

Extrait de l'Indicateur pour employés numéro 13 (14 juin 1908) stipulant le Règlement d'exploitation des trains de passagers sur la pente du col du Cheval-qui-rue. Tous les trains de passagers du CPR furent équipés de freins pneumatiques dès le début des opérations sur la Grande Pente. Collection Ronald Ritchie

44 TRANSCONTINENTAL RAIL ROUTE

Miles from Montreal	West bound Train	STATIONS—DESCRIPTIVE NOTES	East bound Train	M fi Va		
2389	8.00	**Hector**—Alt. 5,190 ft. the Rocky Mts., like the stupendous mountain some miles ahead—the chief peak of the Rockies in this latitude—is named in honor of the first President of the Canadian Pacific Railway Co. Here is the "Great Divide," and a sparkling stream separates into two, the waters of one flowing to the Pacific, and of the other to Hudson's Bay. From here the line descends rapidly, passing the beautiful Wapta Lake at *Hector*, and crossing the deep gorge of the Wapta, or Kickinghorse, River just beyond. The scenery is now sublime and almost terrible. The line clings to the mountain-side at the left, and the valley on the right rapidly deepens until the river is seen as a gleaming thread a thousand feet below. Looking to the right, one of the grandest mountain-valleys in the world stretches away to the north, with great, white, glacier-bound peaks on either side.	f20.00	517		
	Summit of the Rockies		Summit of the Rockies		Mt. Stephen and its glaciers	Looking ahead, the dark angular peak of Mt. Field is seen. On the left the Duomo-like head of Mt. Stephen (8,000 feet above the valley), and the spires of Cathedral Mt. still further to the left, occasionally appear over the tree-tops. Soon the slope of Mt. Stephen is reached, and on its shoulder, almost overhead, is seen a shining green glacier, 800 feet in thickness, which is slowly pressing forward and over a vertical cliff of great height. Here, too can be seen a silver-lead mine on the mountain side, 2,500 feet above its base. Passing through a short tunnel, and hugging the base of the mountain closely the main peak is lost to view for a few minutes; but as the train turns sharply away, it soon reappears with startling suddenness, and when its highly colored dome and spires are illuminated by the sun it seems to rise as a flame shooting into the sky.	In front of Mt. Stephen
	Sublime scenery						

Detail (Hector to Field) from a CPR Annotated Time Table of the Great Transcontinental Route dated January 9, 1899. CRHA Archives, Fonds Angus

Détail (d'Hector à Field) de l'indicateur annoté de la ligne transcanadienne du CPR, daté du 9 janvier 1899. Archives ACHF, Fonds Angus

The temporary solution called the Big Hill was becoming an operational bottleneck to the CPR.

Why the 'Spiral Tunnels' were built

The era during which the Big Hill operated is characterised as the 'Gilded Age' of North American prosperity. The railways were at the forefront of this era of industrial and urban expansion. The CPR was a profitable enterprise, and wisely invested some of the high profits of the era into improving the railway.

As Vancouver grew from a tiny settlement to a major city and port, there was a huge increase in freight and passenger traffic over the CPR. Passenger traffic over the Big Hill increased three fold in the first two decades of operation.

The new century also saw huge improvements in the science of building railways. The 1884 Big Hill was built with a huge workforce using hand tools and gunpowder. By the 1900's, heavy steam shovels, air operated drills and many other machines were available to speed construction.

The CPR made the decision in 1907 to replace the 4.4% gradient on the Big Hill with a 2.2% grade using spiral tunnels cut into the surrounding mountains. MacDonnell & Gzowski, a Vancouver contracting company, built the new grade including the Spiral tunnels. In May 1909, crews broke through the two spiral tunnels and on September 1, 1909, the new line was put into service.

The new route diverged from the Big Hill at Mile 9 west of Hector, and crossed over the original route at Mile 11.7. Finally, the two routes joined again at Mile 13.

dépôt du personnel et des machines de Donald, C.-B. fut éliminé en faveur de Revelstoke.

La « solution temporaire » de la Grande Pente allait devenir un goulot d'étranglement pour le CPR.

Pourquoi construire les tunnels en spirale ?

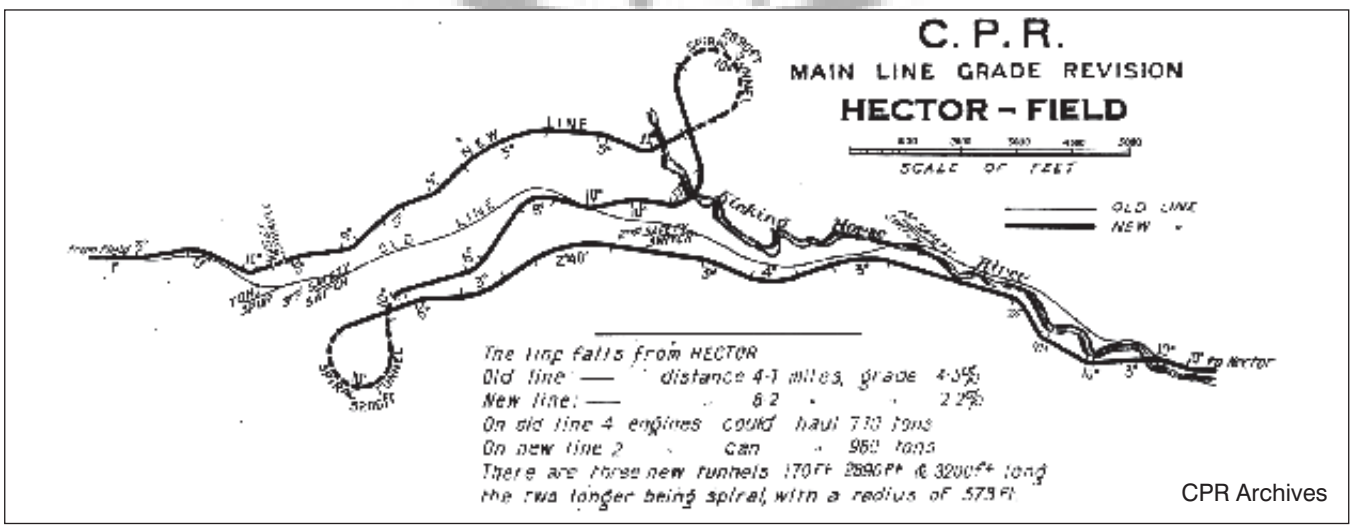
L'époque durant laquelle la Grande Pente fut utilisée fut considérée comme l'âge d'or de la prospérité nord-américaine. Les chemins de fer furent à la fine pointe de cette ère d'expansion industrielle et urbaine. Le CPR fut une entreprise rentable et il investit judicieusement une portion de ses grands profits d'alors dans l'amélioration de son réseau.

Alors que Vancouver grandissait d'un petit village de colons à une grande ville et port, il y eu une augmentation importante du trafic passagers et marchandises sur le CPR. Sur la Grande Pente, le trafic passagers tripla durant les deux premières décennies d'opération.

Le siècle nouveau apporta aussi d'énormes améliorations dans la science de la construction ferroviaire. La Grande Pente de 1884 fut construite par une main-d'œuvre importante utilisant des outils à main et de la poudre à canon. Dans les années 1900, les pelleteuses à vapeur, les foreuses pneumatiques et bien d'autres machines furent là pour accélérer les travaux de construction.

Le CPR décida en 1907 de remplacer le gradient de 4,4 % de la Grande Pente par une succession de tunnels en spirale ayant une pente de 2,2 %, creusés dans les montagnes aux alentours. C'est la compagnie de Vancouver MacDonnell & Gzowski qui construisit la nouvelle ligne et les tunnels. En mai 1909, les hommes terminèrent les deux tunnels en spirale et, le 1er septembre de la même année, la nouvelle ligne fut mise en service.

Cette nouvelle route divergeait de celle de la Grande Pente à la BM 9.0 (km 14,5), à l'ouest de Hector et croisait la route originale à la BM 11.7 (km 18,8). Les deux tracés se rejoignaient de nouveau à la BM 13.0 (km 20,9).



CPR Archives

BIG HILL TUNNELS MEET TO FRACTION OF AN INCH TODAY

Vancouver Province, May 6, 1909

One of the greatest railway engineering undertakings ever attempted on this continent came to successful end Wednesday when the second of the long tunnels on the main line of the CPR at the "Big Hill", between Field and Hector, was broken through. The drills broke through in Tunnel No. 1 yesterday afternoon.

It was a matter of congratulations to the engineers responsible for the tunnel surveys that both of the long bores met exactly at the fraction of an inch. Mr. H. N. Merriam is the engineer in charge, while Mr. J. W. Shepperd is the resident engineer and the man who from day to day has given the contractors the levels and lines as the four great headings were steadily advanced – the tunneling having been carried on at each end of the two bores.

It is estimated today by Messrs. Macdonnell & Gzowski, the Vancouver contractors, that at the expiration of one month they will turn over the entire work to the CPR. Ever since the work was started on September 2, 1907, it was planned to complete it in time for the railway company to operate trains through the tunnels on the commencement of its summer transcontinental train service in 1909 and it is now certain that when the new timetable goes into effect on June 6 the CPR will be operating over the new route which cuts the tremendous "Big Hill" grade in half.

In order to make possible the hauling by two locomotives of more freight up this grade that it is now possible for four engines to do, the CPR has spent $1,500,000 on the tunnels and the new grade. On the present line the hauling capacity of four engine is fixed at 710 tons, while on the new line it is estimated that two engines will be able to haul 930 tons, and that too at a greater speed than is possible of attainment under present conditions . . . The distance of the present line between the points affected by the new grade is 4.1 miles; by the new route the distance will be 8.2 miles or an addition of 4.1 miles to the length of the line between Vancouver and Montreal.

Although Messrs. Macdonnell & Gzowski started work on the undertaking on September 2, 1907, there was a great deal of preliminary work to be done, and it was not until the first week in January 1908 that they got underground at one portal of No. 1 tunnel, which is the most westerly of the two bores; and it was not till the latter part of February 1908 that they were under ground in the second end of No. 1 Tunnel. At No. 2 tunnel the upper end was got under

LES TUNNELS DE LA GRANDE PENTE SE RENCONTRENT À UNE FRACTION DE POUCE PRÈS AUJOURD'HUI

Vancouver Province, le 6 mai 1909

Un des plus grands travaux de génie ferroviaire jamais entrepris sur ce continent a été couronné de succès mercredi, lorsque le percement du deuxième des longs tunnels sur la ligne principale du CP à la Grande Pente, entre Field et Hector, a été achevé. Les forets se sont rencontrés dans le tunnel n°1 hier après-midi.

Il y a tout lieu de féliciter les ingénieurs responsables des relevés topographiques aux deux extrémités car les deux longs conduits se sont rejoints exactement à quelques fractions de pouce près. M. H. N. Merriam est l'ingénieur responsable, tandis que M. J. W. Shepperd est l'ingénieur résidant responsable, celui qui, jour après jour, a communiqué les relevés des lignes et niveaux aux entrepreneurs aux quatre têtes de forage, les tunnels ayant été percés par leurs deux extrémités en même temps.

Messieurs MacDonnell & Gzowski, les entrepreneurs de Vancouver, estiment qu'ils remettront le travail terminé au CP dans un mois. Depuis que les travaux ont commencé le 2 septembre 1907, on prévoyait que les travaux seraient terminés à temps pour que la compagnie de chemin de fer puisse commencer l'exploitation des trains transcontinentaux dans les tunnels durant l'été 1909. Il est certain maintenant que lorsque les nouveaux horaires entreront en vigueur à compter du 6 juin, le CP exploitera la nouvelle route qui coupe l'énorme déclivité de la Grande Pente de moitié.

Afin de pouvoir faire tirer par deux locomotives plus de fret que ne pouvaient tirer quatre locomotives, le CP a dépensé 1 500 000$ pour les tunnels et la nouvelle pente. Actuellement la capacité de traction de quatre locomotives est fixée à 710 tonnes (644 tonnes métriques) alors qu'avec la nouvelle ligne, on estime que deux locomotives pourront tirer 930 tonnes (844 tonnes métriques), et ce à une vitesse plus grande qu'aux conditions actuelles… La distance actuelle de la ligne entre les deux points affectés par la nouvelle pente est de 4.1 mi (6,6 km); par la nouvelle route la distance sera de 8.2 mi (13,2 km) soit un allongement de 4.1 mi (6,6 km) de la ligne entre Montréal et Vancouver.

Même si MM. MacDonnell & Gzowski ont commencé le 2 septembre 1907, un gros travail préparatoire a été nécessaire, et ce n'est que durant la première semaine de janvier 1908 qu'ils ont pu creuser à l'entrée du tunnel No1, celui situé le plus à l'ouest des deux forages, et ce n'est pas avant la fin de

ground during the first part of February 1908 and the lower end was into the rock about the middle of the following March.

The steelwork of the two bridges on which the railway will cross the Kicking Horse River during its windings between the tunnels – for the tunnels lie in the mountains, one on each side of the stream – is now being erected and will be completed within the next thirty days.

Altogether over one mile of tunneling has been driven. One of the bores is 3,200 feet long and the other 2,890 feet. There is also a baby tunnel 170 feet long, which lies a short distance east of the diversion of the line to the new grade east of Field. The tunneling has been of the most difficult nature owing to the brittleness of the crystalline limestone in which the work lay.

The two tunnels are what are known to engineers as spirals, and are the first examples of this class of work in North America. There are a number of such tunnels in the Alps where it has been found necessary to ease gradients within a short distance as in this instance in the heart of the Rockies.

février 1908 qu'ils ont pu creuser à l'autre extrémité du tunnel No1. Pour le tunnel No2, le forage au portail supérieur a commencé au début de février 1908 et celui au portail inférieur à la mi-mars suivante.

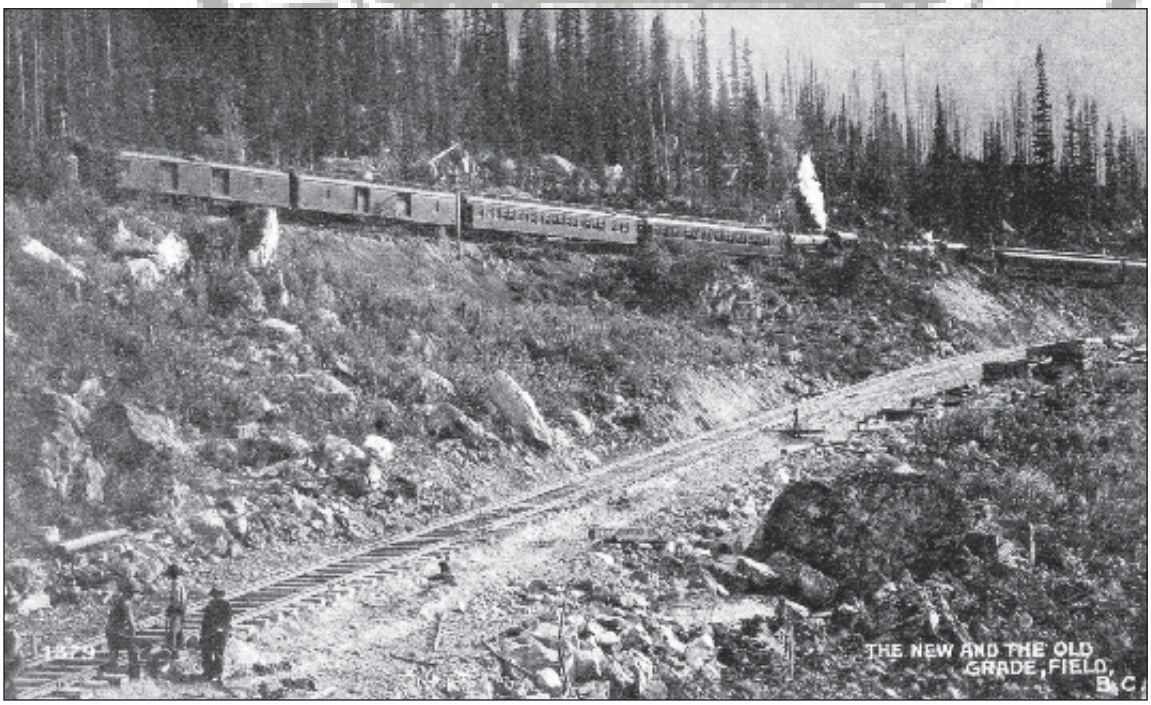
La structure d'acier des deux ponts sur lesquels la voie va franchir la rivière Kicking Horse entre les deux branches de la spirale, - les tunnels se trouvant de chaque côté du lit de la rivière - sont érigés et devraient être achevés dans les trente prochains jours.

Ensemble, c'est plus de 1 mille (1,6 km) de tunnel qui ont été creusés. L'une des sections fait 3,200 pieds de long (975 m) et l'autre 2,890 pieds (881 m). Il y a aussi un petit tunnel de 170 pieds (52 m) situé à l'est de la déviation de la ligne vers la nouvelle pente à l'est de Field. Le creusage fut rendu plus difficile par la nature fragile du calcaire cristallin où les travaux furent faits.

Ces deux tunnels sont dits en spirale par les ingénieurs et sont les premiers exemples de tels travaux en Amérique du Nord. Il en existe plusieurs dans les Alpes où l'on a dû y recourir pour diminuer les pentes sur de courtes distances, comme ce fut le cas ici dans les Rocheuses.

The 'Big Hill' after the Spiral Tunnels

La Grande Pente après les tunnels en spirale



In this photograph taken near Yoho Station, the new spiral tunnel alignment is in the foreground while the train in the background is on the old Kicking Horse Grade. The 4.5% versus the new 2.2% grade is clearly visible in this image! Doug Phillips collection

Sur cette photographie, prise près de la gare de Yoho, le tracé du nouveau tunnel en spirale est à l'avant-plan tandis que le train à l'arrière-plan est sur celui de la pente du col du Cheval-qui-rue. Le contraste de l'ancienne pente de 4,5 %, par rapport avec la nouvelle pente de 2,2 %, est clairement visible sur cette image! Collection Doug Phillips

The trackbed of the Big Hill was converted into a road from Mile 9 to 13. A pair of switchbacks bought the road to the valley floor. The route west from Field, abandoned as a railway in 1902, provided further road access to the west, which eventually became part of the Kicking Horse highway to Golden.

In the 1960's, the isolated sections of highway across British Columbia were connected and improved to become part of Highway 1, the Trans-Canada highway. The Big Hill itself forms part of the Trans-Canada highway, and today, highway trucks, buses and automobiles travel the 4.4% gradient at highway speeds.

Changes brought about by the Spiral Tunnels

As soon as train traffic started to operate over the new Spiral Tunnel route, it became apparent that trains would pass through the area much more quickly. Laggan (Lake Louise) ceased to be a crew change point and the engine terminal at Field became the western terminal for crews operating from Calgary.

Management and maintenance of the tracks from Lake Louise to Field was transferred from the BC District of the CPR to the Alberta District.

Until the end of steam in 1953, pusher locomotives were required to assist eastbound trains up the Spiral Tunnel route.

Today, Field remains the location where crews from Calgary change with crews from Revelstoke BC.

Not without accidents

Although there were occasional mishaps on the 4.4% grade, no passengers were ever killed riding over this portion of the line.

Accident reporting in the late 19th Century was sketchy, only when passengers were killed was there an in depth enquiry.

La banquette de la voie de la Grande Pente laissa place à une route entre la BM 9.0 (km 14,5) et la BM 13.0 (km 20,9). Quelques bretelles en lacet amenèrent celle-ci au fond de la vallée. Le tracé à l'ouest de Field, abandonné comme voie de chemin de fer en 1902, devint une autre route vers l'ouest et fit éventuellement partie de la route de Kicking Horse vers Golden.

Dans les années 1960, des sections isolées de la route qui traverse la Colombie-Britannique ont été raccordées et améliorées pour devenir partie de la route 1, la Transcanadienne. La Grande Pente elle-même fait partie de la Transcanadienne et, aujourd'hui, camions, autobus et automobiles parcourent la pente de 4,4 % à vitesse d'autoroute…

Les changements apportés par les tunnels en spirale

Aussitôt que le trafic commença à traverser les tunnels en spirale, il devint évident que les trains traverseraient la région plus rapidement. Laggan (Lac Louise) cessa d'être un point de changement pour les équipages et le dépôt de locomotives de Field devint le terminal ouest pour les équipages opérant depuis Calgary.

La direction et l'entretien des voies entre Lac Louise et Field furent transférés du district de Colombie-Britannique du CPR à celui de l'Alberta.

Jusqu'à la fin de la vapeur en 1953, des locomotives d'assistance furent nécessaires pour pousser les trains en direction est le long des tunnels en spirale.

Aujourd'hui Field reste l'endroit où les équipages de Calgary remplacent ceux partis de Revelstoke (C.-B.).

Pas sans accidents

Même s'il y a bien eu quelques incidents sur la pente de 4,4 %, aucun passager n'a été tué en franchissant cette portion de ligne.

Les déclarations d'accident à la fin du XIXe siècle étaient sommaires, il n'y avait d'enquête en profondeur qu'en cas de décès.

La Colombie-Britannique adopta un régime de compensation pour les travailleurs accidentés en 1903 en remplacement de la demi-paie financée par les employeurs. Un coroner dut aussi produire un rapport sur les décès d'employés

Even with the spiral tunnels the 2.2% grade is apparent in this photo! Lead engine 633, a 4-6-0, was built in the CPR New Shops in 1894. CPR Archives, NS1370

Même avec les tunnels en spirale, la pente de 2,2 % est apparente sur cette photographie! En tête, la locomotive numéro 633, une 2-8-0, fut fabriquée aux ateliers New Shops du CPR en 1894. Archives du CPR

BC adopted Workmen's Compensation in 1903 replacing a system of 'half pay' for injured workers funded by the employer. The coroner was also required to produce a report on employee fatalities and offer possible causes and remedies.

Before the 4.4% grade was completed, a contractor's train ran away with three killed. This resulted in the decision to include the safety switches and runaway tracks on the Big Hill. Later during the construction period, tragedy was averted when a runaway finally derailed just short of a location where 60 men were drilling a tunnel through the flank of Mount Stephen.

Two fatal wrecks on the Big Hill involved Baldwin 2-8-0 314, one of the four locomotives built especially in the 1880s for service on Field hill.

In January 1889, the 314 was under the control of engineer Jack Spencer hauling 14 cars of coal westbound down the grade from Hector. Possibly due to frost on the rail, by the time the train approached the third safety switch on the 4.4% grade, it was out of control. The switchman attending the safety switch thought he heard four short blasts on the whistle, an indication that the train was under control. He lined it for the main track, and the train continued at speed until it derailed and collided with the flank of Mount Stephen near the tunnel at the bottom of the 4.4% grade. The fireman and head end trainman were killed in the wreck.

Five years later, the same locomotive suffered a crown sheet failure while on an eastbound train very near the same location, killing the engineer and fireman. The steam dome from the 1894 incident is on display at the Spiral Tunnels viewpoint on the Trans-Canada Highway. The 314 was rebuilt and later renumbered twice to be finally retired in 1917.

Lew Patrick & William Van Horne

Lew Patrick was one of the first locomotive engineers employed by the CPR on the Mountain Section. His engine service started in Winnipeg with one of the contractors building the railway.

Somehow, he started corresponding with William Van Horne, the President of the railway, concerning locomotives and fuel consumption. Lew Patrick worked the 'Big Hill' from the beginning of service, and I'm sure the test of coal versus wood for fuel had something to do with Mr. Patrick. The precise nature of the initial test with coal for fuel on a 12 car eastbound at 4.29 miles an hour using 2,676 pounds of coal and 1,498 gallons of water convinced the CPR that operation on the Big Hill was practical.

Years later, in 1916, Lew Patrick operated the first train through the Connaught Tunnel in Rogers Pass. A letter from Van Horne to Patrick after the event noted the savings on fuel compared to operation over the original Roger Pass line over the summit. Based on

et préciser les causes et les remèdes possibles.

Avant que la pente de 4,4 % ne soit terminée, un train d'entrepreneur dérailla et trois personnes furent tuées. Ceci résulta dans la décision d'inclure des voies d'emballement et des aiguillages de sécurité sur la Grande Pente. Plus tard, durant la construction, une catastrophe put être évitée lorsqu'un train emballé dérailla à quelques pas de l'endroit où 60 employés creusaient un tunnel dans le flanc du mont Stephen

La Baldwin 2-8-0 No 314, l'une des quatre locomotives construites spécialement dans les années 1880 pour servir sur la colline de Field, fut impliquée dans deux accidents mortels sur la Grande Pente.

En janvier 1889, Jack Spencer, aux commandes de la No 314 tirant 14 wagons de charbon vers l'ouest, descendait la côte depuis Hector. Possiblement à cause de givre sur les rails, au moment où le train approcha du troisième aiguillage de sécurité sur la pente de 4,4 %, il était hors de contrôle. L'aiguilleur pensant avoir entendu les quatre coups de sifflets brefs indiquant que le train était sous contrôle, le dirigea alors sur la voie principale et le train poursuivit sa course jusqu'à ce qu'il déraille et frappe le flanc du mont Stephen près du tunnel en bas de la pente de 4,4 %. Le chauffeur et le serre-freins de tête furent tués dans l'accident.

Cinq ans plus tard, à peu près au même endroit, la même locomotive tirant un train vers l'est eut une rupture d'une tôle de couronne, tuant le mécanicien et le chauffeur. Le dôme à vapeur éjecté lors de cet incident de 1894 est exposé au belvédère d'observation des tunnels en spirale sur la Transcanadienne. La 314 fut reconstruite et renumérotée deux fois avant d'être finalement mise hors service en 1917.

Lew Patrick et William Van Horne

Lew Patrick fut l'un des premiers mécaniciens de locomotive employés par le CPR dans la section « montagne ». Son service sur les machines commença à Winnipeg avec l'un des entrepreneurs qui construisirent le réseau.

Il commença à correspondre avec William Van Horne, le président de la compagnie de chemin de fer, au sujet des locomotives et de leur consommation de combustible. Lew Patrick était affecté au service sur la Grande Pente, et je suis sûr que les tests au charbon par rapport au bois eurent quelque chose à voir avec M. Patrick. La nature précise du premier essai avec le charbon comme combustible sur un train de 12 wagons vers l'est à la vitesse de 4.29 mi/h (6,9 km/h) et utilisant 2,676 livres (1214 kg) de charbon et 1,498 gal (5671 l) d'eau ont convaincu le CPR que les opérations sur la Grande Pente étaient faisables.

Quelques années plus tard, en 1916, Lew Patrick conduisit le premier train à travers le tunnel Connaught au col de Rogers, Une lettre de Van Horne à Patrick après

savings on locomotive fuel alone, Van Horne estimated the construction cost of the new tunnel would be paid off by 1970.

The Big Hill today

The CPR rail line as relocated through the Spiral tunnels still carries freight trains destined for the east and the Pacific Coast. Even with the grade reduced to 2.2%, careful handling of the air brakes is required and there have been a couple of runaway freight trains over the years since the original Big Hill was abandoned.

Pusher locomotives continued to operate between Field and Hector or Lake Louise until the end of steam operations in the early 1950's.

The 'Spiral Tunnels Overlook' remains a popular tourist stop on the Trans-Canada highway. The steam dome from locomotive 314 is on display there as a memorial to the railway workers killed operating on the Big Hill.

A huge amount of freight traffic still travels over the grade of the original Big Hill in highway trucks. Truck drivers treat the Big Hill with the respect it deserves and perform a brake test prior to slowly descending the 4.4% portion of highway grade.

The most visible remnant of the old grade is a steel bridge near Sherbrooke Creek, which was decked for the pioneer highway.

Le reste le plus visible de la vieille pente est le pont métallique près du ruisseau Sherbrooke ; il a reçu un fond de planches pour la route des pionniers.

Bibliography:

Canadian Pacific's Big Hill, Floyd Yeats, BRMNA, 1985, ISBN 0-919487-14-9

Canadian Pacific Steam Locomotives, Omer Lavallée, Railfare, 1985, ISBN 0-919130-34-8

Canadian Pacific Railway – Pacific Division, Time Table 13, June 14th, 1908.

Portions of CPR Pacific Division Time Tables circa 1898 and 1903

Railway Mileposts ; British Columbia, Volume 1, Roger G. Burrows, Railway Milepost Books,1981, ISBN 0-9690617-0-6

The Spiral Tunnels and the Big Hill, Graeme Pole, Mountain Vision Publishing, 2009, ISBN 978-0-9697249-1-9

Van Horne's Road, Omer Lavallée, Railfare, 1974, ISBN 0-919130-22-4

Lew Patrick Funds, various letters between Patrick and Van Horne, Revelstoke Railway Museum

Wikipedia, the free on-line encyclopedia

Research notes: Leanne Braid

l'évènement nota les économies de combustible en passant par le tunnel par rapport au passage par le sommet. En se basant sur la seule épargne de combustible, Van Horne estima que les coûts de construction du nouveau tunnel seraient amortis en 1970.

La Grande Pente aujourd'hui

La ligne du CPR relocalisée par les tunnels en spirale continue de porter des trains de marchandises vers l'est et vers la côte du Pacifique. Même avec une pente de 2,2 %, l'utilisation des freins pneumatiques reste délicate et il y a eu quelques emballements de trains depuis l'abandon de la ligne de la Grande Pente.

Les locomotives d'assistance ont continué de pousser les trains entre Field et Hector ou Lac Louise jusqu'à la fin des opérations à la vapeur au début des années 1950.

Le point de vue du belvédère des tunnels en spirale est toujours un arrêt populaire sur la Transcanadienne. Le dôme à vapeur de la No 314 y est exposé comme monument en souvenir des cheminots tués sur la Grande Pente.

Un fort trafic de marchandises continue de passer sur la Grande Pente dans des camions. Leurs conducteurs respectent toujours la Grande Pente et testent leurs freins avant d'aborder lentement la descente de 4,4 % sur la route.

Le reste le plus visible de la vieille pente est le pont métallique près du ruisseau Sherbrooke ; il a reçu un fond de planches pour la route des pionniers.

Bibliographie:

Canadian Pacific's Big Hill, Floyd Yeats, BRMNA, 1985, ISBN 0-919487-14-9

Canadian Pacific Steam Locomotives, Omer Lavallée, Railfare, 1985, ISBN 0-919130-34-8

Canadian Pacific Railway – Pacific Division, Time Table 13, June 14th, 1908.

Portions of CPR Pacific Division Time Tables circa 1898 and 1903

Railway Mileposts ; British Columbia, Volume 1, Roger G. Burrows, Railway Milepost Books,1981, ISBN 0-9690617-0-6

The Spiral Tunnels and the Big Hill, Graeme Pole, Mountain Vision Publishing, 2009, ISBN 978-0-9697249-1-9

Van Horne's Road, Omer Lavallée, Railfare, 1974, ISBN 0-919130-22-4

Fonds Lew Patrick, diverses lettres entre Patrick et Van Horne, Revelstoke Railway Museum.

Wikipédia, l'encyclopédie libre en ligne

Notes de recherche de Leanne Braid

Leonard A. Seton Q.C. – 1917 - 2014

By/Par Peter Murphy

Version française : Denis Vallières

On April 26, 2014, the Canadian Railroad Historical Association lost its most senior member, Leonard Arthur Seton Q.C. at the age of 96. Leonard joined the CRHA as its first junior member at the Association's second meeting, which was held at Montreal's Chateau de Ramezay in 1932. He was 14 years old at the time!

Leonard was born in Ottawa, Ontario, but grew up in Montreal West, Quebec. He attended McGill University, graduating from Arts in 1939 and Law in 1942. He was a navigation instructor in the Royal Canadian Air Force during World War ll, after which he married his wife Phyllis (the girl under the clock at McGill - Arts 1943) and started his law practice.

Leonard A. Seton photographed outside the Saskatchewan on the occasion of his 90th birthday in 2008. C. Stephen Cheasley

Leonard A. Seton photographié devant la voiture Saskatchewan, à l'occasion de son 90e anniversaire, en 2008. C. Stephen Cheasley

Leonard became involved with the CRHA and worked tirelessly over the years alongside elders such as Dr. R. V. V. Nicholls, Omer Lavallee, Richard Binns and many others to advance the cause of railway history and the CRHA. Leonard was Honorary Counsel to the CRHA for many years and he was a founding member of the Canadian Railway Museum, today's Exporail at Delson / St. Constant, Quebec.

On September 12, 1958, it was he who spotted CPR wooden business car 38 on the scrap line at Toronto's John Street roundhouse. A quick phone call to Omer Lavallee in Montreal confirmed that this was indeed Sir William Van Horne's private railway car. Quick action resulted in the car being saved and moved off of CPR property within a week to be stored at Dominion Bridge in Lachine, Quebec. It was stored there, under supervision, for many years until it could be delivered to Exporail in 1963. The Saskatchewan remains as one of the most prized artefacts in the CRHA's extensive rolling stock collection at Exporail.

Leonard was the consummate gentleman, kind, caring, courteous and compassionate. He always wore his signature jacket, tie and RCAF pin. Leonard is survived by his wife, Phyllis, his four children, Geoffrey, Christopher, Rosemary and Victoria as well as two grandchildren Nicholas and Tristan.

Le 26 avril 2014, l'Association canadienne d'histoire ferroviaire (ACHF) a perdu son plus ancien membre, Leonard Arthur Seton Q.C, décédé à l'âge de 96 ans. Leonard a joint l'ACHF à titre de premier membre junior, lors de la deuxième réunion de l'Association, tenue au Château Ramezay de Montréal, en 1932. Il avait alors 14 ans!

Leonard est né à Ottawa, Ontario, mais il a grandi à Montréal-Ouest, Québec. Il a fréquenté l'université McGill, graduant de la faculté des Arts, en 1939, et de celle de Droit, en 1942. Il fut instructeur de navigation dans l'Aviation royale canadienne au cours de la 2e Guerre mondiale. Il maria ensuite Phyllis (la jeune fille sous l'horloge sur le portrait des Arts 1943 de McGill) et commença à pratiquer le droit.

Leonard s'engagea à fond dans l'ACHF et travailla sans relâche, au fil des ans, aux côtés de membres plus âgés, tels que le Dr R. V. V. Nicholls, Omer Lavallée, Richard Binns et bien d'autres, pour faire progresser la cause de l'histoire ferroviaire et de l'ACHF. Leonard a été Conseiller honoraire de l'ACHF durant de nombreuses années et il fut l'un des membres fondateurs du Musée ferroviaire canadien, maintenant devenu Exporail, à Delson/Saint-Constant, Québec.

Le 12 septembre 1958, à la rotonde de la rue John du Canadien Pacifique, à Toronto, ce fut lui qui nota la présence de la voiture privée en bois numéro 38 sur la voie du matériel destiné à la ferraille. Un coup de téléphone rapide à Omer Lavallée, à Montréal, confirma que c'était bien la voiture privée de Sir William Van Horne. Des démarches, entreprises sans plus tarder, résultèrent en la sauvegarde de la voiture et en son déplacement, en moins d'une semaine, de la propriété du CPR à l'usine de la Dominion Bridge, à Lachine, Québec, pour y être entreposée. Elle y resta pendant de nombreuses années, sous surveillance, jusqu'à ce qu'elle puisse être livrée à Exporail, en 1963. La Saskatchewan demeure l'une des pièces les plus précieuses de la grande collection de matériel roulant d'Exporail.

Leonard fut un gentilhomme accompli, bienveillant, attentionné, courtois et compatissant. Il porta tout le temps son veston de marque avec cravate et broche de l'ARC. Leonard laisse dans le deuil sa conjointe, Phyllis, ses quatre enfants, Geoffrey, Christopher, Rosemary et Victoria, ainsi que deux petits-enfants, Nicholas et Tristan.

Heritage Business Car

March - April, 2015

By John Godfrey

Edited by David Gawley

Maritime railway anniversaries

December, 2014 marked the twentieth anniversary of the last run of VIA Rail Canada's Atlantic train between Montreal and Saint John, New Brunswick.

Furthermore 25 years ago (Dec 28, 1989) witnessed another infamous anniversary - the last train to ever operate on PEI as well as on the Tormentine Sub. According to what I have read, CN loaded equipment onto the MV Abegweit at Borden earlier in the evening, followed a few hours later by the MV John Hamilton Gray. And that was the end of 115 years of railroading in PEI as all of these lines were officially abandoned a few days later on Dec 31.

Eighteen days later VIA Rail would slash over 50% of its passenger services nationwide on January 15, 1990, including RDC service between Truro and Sydney.

It looks as if history is repeating itself on Cape Breton Island as yet another part of Canada witnesses the end of rail service. The Nova Scotia Utility and Review Board (NSURB) gave the Genessee & Wyoming permission on January 15, 2015 to abandon the CBNS line between Sydney and St Peter's Junction on Cape Breton. However, the last train left Sydney on December 30, 2014. While the NSURB set the abandonment date at October 1, 2015, provincial legislation allows the railway to provide the service with trucks during this period. The line can be lifted six months after the October abandonment date.

The former IRSI shop at Moncton has begun scrapping the fleet of RDC's. The company owes money and the stainless steel scrap price must be attractive, although rather short sighted. Reliable sources indicate that the current plan is to scrap all of the un-rebuilt cars. If anyone or groups have considered saving some of these historic cars, now is the time to do it. (Matt Keoughan, edited and Canadian Press)

David Morris

Canadian Railway Troops temporary exhibition opens at Exporail

Born alongside the railway, recognized for its expertise in this area and proud to be part of the British Empire, Canada was a young nation that entered the 20th century with confidence. During the First World War, despite its small population, this peaceful and prosperous country was nonetheless able to send an expeditionary force of 600,000 troops of whom one in ten would not return home alive. Included in the force were 20,000 members of the Railway Troops. From 1915 to the German defeat in 1918, these railroaders in khaki were to prove again and again their exceptional efficiency and courage under fire while dealing with the task at hand. See the exhibit "Road to Victory" at Exporail.

National Museum of Scotland (239) D.2094

Les troupes ferroviaires canadiennes, ces héros oubliés

Né à l'ombre du chemin de fer, reconnu pour son expertise dans ce domaine, fier de son appartenance à l'Empire britannique, le Canada aborde le 20e siècle avec confiance. Au cours du premier conflit mondial, ce pays

pacifique et prospère réussit à réunir un corps expéditionnaire de 600 000 soldats, dont 20 000 membres des troupes ferroviaires. De 1915 à la défaite allemande de 1918, ces cheminots en uniforme se font reconnaître pour leur efficacité exceptionnelle, leur courage sous le feu ennemi et l'esprit de sacrifice face à la tâche à accomplir:

New Democratic Party (NDP) presents a bill to name a National Railway Museum

Sylvain Chicoine, the New Democratic Party member of the House of Commons for the riding in which Exporail, the Canadian Railway Museum is located, presented a private member's bill on January 28, 2015 (Bill C-651) to create a new national museum to be called the Canadian Railway Museum. The idea behind this bill is to have the Federal Government carry out the resolution passed by Parliament of Canada on February 27, 2007 to make Exporail, the Canadian Railway Museum, Canada's National Railway Museum with appropriate funding." (Stephen Cheasley)

Montreal's Wellington Tower may get new life as a cultural venue

John Kenney, Montreal Gazette

Today, it's abandoned, decrepit and graffiti-scarred, but for almost 60 years it was a railway nerve centre that kept Montreal's Central Station humming.

Between the early 1940s and 2000, Canadian National workers in the three-storey Wellington Tower controlled dozens of railway switches, guiding trains from one track to another between Central Station and the Lachine Canal. The workers also managed a massive adjacent lift-bridge over the canal.

The former railway perch is about to get a new lease on life. The city of Montreal has laid out a plan to turn the historic structure on Smith Street, between Peel St. and the Lachine Canal into a cultural centre for fast-growing Griffintown by 2016.

Montreal is asking cultural groups to submit proposals on how they would use the city-owned structure.

The tower was a high-tech marvel when it opened, said rail-history expert David Hanna, a Université du Québec à Montréal professor. "It had the latest in technology for controlling switches electrically," Hanna said. In most other places, railways still used levers in towers to mechanically switch tracks.

The Wellington Tower controlled switches from the Lachine Canal up to and inside Central Station, which opened in 1943. "You're coming off the canal bridge there with two tracks and you're ballooning out to 14 tracks at Central Station," Hanna said. "It was a very busy place — they had a lot of switching to do."

The tower was hugely important at a time when trains were bursting at the seams. All CN passenger traffic from east, west or the U.S. flowed past that switch tower, with the exception of trains using the Mount Royal tunnel, and even these travelled the route to and from the coach yard.

CN workers also controlled a 10-storey railway lift bridge over the Lachine Canal which was the entry to the main inland waterway prior to the St. Lawrence Seaway. The lift bridge's superstructure was removed in the 1960s. It is now a fixed bridge used by Montreal commuter and Via Rail and Amtrak inter-city trains heading to and from Central Station.

A nearby pivoting train bridge now permanently opened is an old Grand Trunk Railway bridge that was operated by a worker on the structure.

Jean-Paul Viaud

The Wellington tower's original control panel is on display in the Hays Station at Exporail, the Canadian Railway Museum in St-Constant, Quebec. (Andy Riga, The Montreal Gazette - edited)

Collapsing roof has critics questioning Canada's Science and Technology Museum fix

Critics are questioning the government's decision to spend more than $80 million to upgrade the Canada Science and Technology Museum in Ottawa after newly released documents revealed the building's roof is collapsing and trace amounts of asbestos were found

inside. In September, the museum was forced to close after maintenance workers discovered a leak in the roof that had spread to the building's south wall. Subsequent tests revealed high levels of airborne mould.

But an email sent to Canadian Heritage staff on Sept. 18 by the museum's president and CEO, Alex Benay - and obtained by CBC News after an access to information request - revealed the extent of the damage was greater than previously known. Among the revelations were that the museum's roof is sagging in two locations and is "now officially collapsing" and that white powder is escaping from the ceiling, forcing anyone inside to "have to operate as though there is now asbestos and mould in the air." The maximum snow load of the roof has also been reduced from about 45 cm to about 20 to 25 cm. "The time for band-aid solutions has long gone and has frankly led us to where we all are today," Benay wrote in the email.

On November 17th Canadian Heritage Minister Shelly Glover announced $80.5 million in funding to cover the costs of a new roof, an upgraded facade, updates to the exhibit space and a retrofit of the building to meet updated fire and earthquake-resistance codes. The museum was expected to reopen in 2015, but after Glover's announcement the date was pushed to 2017, in time for the museum's 50th anniversary and Canada's 150th birthday celebrations. At the time, the museum's CEO Alex Benay said the funding will ensure the museum's future as a symbol of Canada's "spirit of innovation." Staff at the museum were redeployed to other facilities, including the Canada Aviation and Space Museum and the Canada Agriculture and Food Museum. Work continues on exhibition and public programming development for the museum, as well as on its collection and archives. The corporation's library at 2380 Lancaster Rd. remains open.

Critics are now questioning whether the plan to retrofit the building will be wasted on an old and dangerous building. "We knew about the mould, but the fact that the roof was collapsing is obviously something that should be of concern for everyone," said Paul Dewar, the NDP MP for Ottawa Centre. "I'm just glad that the roof didn't collapse when there were people there. You know, this is a place for families, for young people, for kids." Mauril Belanger, the Liberal MP for Ottawa-Vanier, said the government should revisit its plans given the extent and seriousness of the building's issues. "I think it will cause people to question the decision that's been made," said Belanger.

Ottawa mayor Jim Watson had previously suggested the museum might better serve the city if it was moved from its current location on St. Laurent Blvd. to a more central location, such as downtown or in the parcel of land near the Canadian War Museum at Lebreton Flats. The cost of a new museum would range from $250 million to $375 million, according to internal museum documents. Belanger said a new facility could allow more artefacts to be on display. "I think that Canadians, generally, would be more willing for the government to invest a larger sum of money," he said. (OttawaCitizen.com / CBC News / via Branchline

Restoration of Locomotive 6167 is completed

The 6167 was photographed at Watford, Ontario on October 6, 1962. James A. Brown, CRHA Archives Fonds Corley

La 6167 fut photographiée à Watford, Ontario, le 6 octobre 1962. James A. Brown, Archives ACHF, Fonds Corley

The restoration of Locomotive 6167 has been completed in Guelph, Ontario and the committee of volunteers that oversaw the work and that was the impetus behind the restoration in the first place has been dissolved.

Councillors on the Community and Social Services Committee publically thanked the volunteers at a recent meeting as they formally approved the motion to dissolve the volunteer committee.

The Locomotive 6167 Committee was formed in 2003 and its members have spent considerable time over 11 years ensuring the steam engine was brought back to life, through fundraising and physical labour.

Restoration included removal of asbestos, repainting, relocation and interior work. The city contributed $250,000 to the work.

The locomotive was built in 1940 and rebuilt in 1942 after a collision. It served in Eastern Canada during the Second World War and was retired in 1959. A year later it headed a new steam train program for tourists in southern Ontario. It was removed from service in 1964 and donated to the City of Guelph in 1967.

With completion of the work, Locomotive 6167 will be handed over to the Guelph Civic Museum, which will incorporate programs highlighting the locomotive and the steam era. (Guelph Mercury)

John Devereux 'Jack' Knowles, July 26, 1923 - December 21, 2014

Robert Sandusky

One of the last of the first generation of rail and traction enthusiasts has passed on. Jack was a Veteran of the Second World War, serving with the Ontario Regiment of the Royal Canadian Armoured Corps as a Wireless Instructor. A dedicated member of the Royal Canadian Legion Colonel J.E.L. Streight Branch 210 Etobicoke, he served on the legion executive and as bulletin editor for a number of years.

True to his lifelong passion for street railways, after 30 years employment in the Planning department of the TTC, Jack continued to provide consulting services to the Hamilton Street Railway. He was a contemporary of Ray Corley, William Hood, Bill Bailey and many other pioneering fans and was instrumental in the founding of the Upper Canada Railway Society and the Ontario Electric Railway Historical Association (Halton Radial Railway Museum) as well as being an active volunteer for a number of railway societies, including the Canadian Transit Heritage Foundation. Jack's knowledge of rail and rail transit was encyclopaedic and he visited and meticulously documented many traction and railway properties across North America starting in the 1930's. He was an avid and published photographer who will be greatly missed by his family and his many railway colleagues.

Jack was a gentleman, generous with his vast knowledge and always willing to answer the many questions that arose pertaining to the operational, technical and historical mysteries we often encountered at the OERHA. He recognized the importance of bringing in new blood to organizations and there are many of us, 40+ years later that are beholden to him for his encouragement which we have hopefully passed on to those that follow us. He will be missed by all that knew him. (Gord McOuat and obituary)

Community Waterfront Heritage Centre opens in Owen Sound, Ontario

Cheers and applause filled the former Owen Sound Canadian National train station recently at the official opening of the Community Waterfront Heritage Centre there.

Formerly the Marine-Rail Museum, it had become an under-appreciated city asset. Cash-strapped city council cut some funding and that prompted the former museum board to close the museum about a year ago.

The community rallied and after a bitter struggle with the old board, which tried to reverse its decision, a new volunteer board took over, led by local author and videographer Richard Thomas, who in remarks inside the station credited their success to broad community support.

"The board aims to make the museum sustainable – requiring ongoing support, through donations, volunteering, taking out memberships – and through increased souvenir offerings in the new gift shop in the museum," he said. "The next step will be to draft a strategic plan. This is just the beginning," the new board president said.

City hall had entertained thoughts of new rents from the city building, perhaps from a tea room or restaurant operator, while relocating the tourist office, which shares space in the station, to somewhere else, possibly to a city hall kiosk. The museum displays would have been split up, on limited display elsewhere.

Now both the museum and the tourist office, which was included in the CWHC proposal accepted by the city, appear to be staying put.

The ceremonial ribbon-cutting was undertaken by Ted Tizzard, the 103-year-old city resident and former Canadian Pacific telegraph operator who has written four books which describe life in the early part of the last century in the Owen Sound area. He received an honourary museum membership.

David Adair, the long-time city councillor, said it was his idea to save some of the train tracks outside the museum when the rest were being removed. The railway was happy to oblige, he said. A train caboose sits on them now, providing an added attraction. (Sun Times Owen Sound – edited)

Crane donated to the Northern Ontario Railroad Museum and Heritage Centre

Cody Cacciotti

Hite Services Limited of Sudbury, Ontario has donated a vintage ex-CN DE 400 Wellman rail crane to the Northern Ontario Railroad Museum and Heritage Centre in Capreol, Ontario. The crane has been in service for over 50 years and would still be except for the fact that to replace the friction bearings with roller bearings is too expensive.

CN purchased the Wellman in 1957 for use in Quebec. It was moved to Ontario the following year. Hite Services purchased the crane in 2001. It is still in working order but hasn't operated for a couple of years. It was built by the Wellman Engineering Company in St. Paul, Minnesota. It is powered by a 325 horse power diesel-electric prime mover and has a 50-foot long boom. The model '400' refers to the 40 ton capacity of the crane.

It is self propelled with a maximum speed of 15 MPH when working, it is usually towed with gears disconnected for long moves. The crane weights in at 210,000 Lbs., Wellman Crane was bought out by Ohio Crane and there are still many Wellman cranes in operation. (The Handcar)

Thunder Bay planning a Transportation museum

Recently the Thunder Bay city council voted to approve the formation of a heritage transportation committee to investigate the possibility of the creation of a transportation museum in Thunder Bay which will include activities in the now amalgamated Fort William and Port Arthur.

Our city is one of the pivotal transportation hubs in Canada and we have a rich and diverse history. From the First Nations Peoples and voyageurs who used the canoe, to Great Lakes shipping, rail and aviation, Thunder Bay has been a recognized leader in transportation in Canada.

Thunder Bay also has a rich history in transportation manufacturing ranging from producing

Car 56 of the Port Arthur Public Utilities Commission was photographed on westbound Arthur Street just west of Cumberland St., date unknown. CRHA Archives, Fonds Corley

Le tramway 56 de la Port Arthur Public Utilities Commission, en direction ouest, fut photographié sur la rue Arthur, juste à l'ouest de la rue Cumberland. Date inconnue. Archives ACHF, Fonds Corley

warplanes during the Second World War. through the manufacture in the 1940's and '50s of Brill transit trolleys that were used across the country to the current production by Bombardier of lightweight rail and mass transit cars for Canadian and foreign systems.

Port Arthur was the first city to build a municipally-owned street car system in Canada and the list of firsts goes on and on. We believe that it's time for Thunder Bay to have its own place to showcase what we have accomplished for the world to see. (Charlie Brown, Co-ordinator, Buddies of the Brill via Gerald McGrath - edited)

VIA Rail completes Winnipeg's Union Station restoration

VIA Rail Canada

VIA Rail Canada Inc. officials recently marked the completion of renovations to the 100-year-old Union Station in Winnipeg, Manitoba.

The $6 million project at the largest station owned by VIA took 14 months to complete, railroad

officials said in a press release.

Upgrades included cleaning, repairing and repainting the most distinctive feature: the central rotunda. The rotunda's restoration emphasizes the station's heritage status and its new look resembles that of the original rotunda, VIA Rail officials said.

Funding for the project was provided by the Canadian government and tops the $3.5 million already invested in many renovation projects carried out since 2007, including a full roof replacement and repairs to heating and cooling systems, they said.

"Thanks to this major work, we can now offer an improved work environment to our employees, a new experience to our passengers and a promising future to Winnipeg Station," said VIA Rail President and Chief Executive Officer Yves Desjardins-Siciliano. (Progressive Railroading On-line)

Changes coming at the Canadian Museum of Rail Travel

Changes are happening at the Canadian Museum of Rail Travel at Cranbrook, British Columbia. It has become part of the Cranbrook History Centre which acts as an umbrella for the Canadian Museum of Rail Travel, the Cranbrook Archives, the Royal Alexandra Hall, and the Cranbrook Museum. There is a description of each at http://cranbrookhistorycentre.ca/.

The change occurred because of a study that showed a reduced interest in the railway museum as a sole attraction and therefore a need for a wider appeal. The Centre's management is assessing their collection with an aim of enhancing what they have but at the same time scaling down to that which is significant.

The Centre's development is dependent on its ability to raise more money from non municipal sources. In the past ten years, $8.2 million has been raised (from non-municipal sources) and the goal is to raise between $!.5 and $2.5 million in the next five years from non municipal sources. (The Cranbrook Townsman - edited)

The cosmetic restoration of the Canadian Museum of Rail Travel's CPR MLW FA-2 4090 and FB-2 4469 has been completed. Kevin Dunk

La restauration cosmétique des locomotives MLW FA-2 4090 et FB-2 4469 du CPR, localisées au Canadian Museum of Rail Travel, a été complétée. Kevin Dunk

West Coast Railway Association FP9Au 6520 up-date

This might be one of 6520's most unusual assignments during its revenue service with CN. For a while in the early 1960s the passenger fleet was used on the hot TOFC night trains between Toronto and Montreal. However this eastbound was late for whatever reason, and was photographed in daylight east of Brockville, Ontario. Check the trailing passenger fleet 6631 (GMDL F9B), 6773 (MLW FPA4), 6704 (CLC CPA16-5) - all the major builders are in on this move; The 6773 is still in service on the Grand Canyon Railroad. Unbelievably, 50% of this lash up is still operational! Don McQueen

Ceci pourrait être l'une des assignations les plus inhabituelles de la 6520 au cours de ses années de service au CN. Durant une période au début des années 1960, les locomotives du service passagers furent utilisées sur les trains de nuit vedettes du service TOFC entre Toronto et Montréal. Cependant, pour une raison indéterminée, ce train en direction est était en retard et fut photographié en plein jour à l'est de Brockville, Ontario. Observez les diesels de la flotte passagers suivant la 6520: la 6631, une GMDL F9B, la 6773, une MLW FP4A, et la 6704, une CLC CPA16-5 - tous les manufacturiers majeurs sont représentés dans cet attelage. La 6773 est encore en service sur le Grand Canyon Railroad. Incroyablement, 50 % de ces locomotives roulent encore! Don McQueen

With all the attention in Southern Ontario on OSRX 6508, we have an update about the West Coast Railway Association's FP9Au 6520, the 6508's former mate from Waterloo-St Jacob Railway days.

WCXX 6520 made its journey west in 2012, as part of a CN locomotive consist and arrived at Squamish, British Columbia on November 24, 2012. The 6520 was thoroughly dried out and stored indoors, while inspections and work took place in preparation for a 'start up'. With the help of CMO Rob MacBeth, Director Singh Biln and Christian Vazzaz efforts to accomplish this are now underway.

The 6520's prime mover was successfully barred

over by hand (rotated manually) several times, the airbox has been cleaned out and the process of battery re-connections has been completed. The 6520 was started up on February 10, 2015, five injectors were found to be seized and will be dealt with. Now that the locomotive has been started, a complete review of all operating systems will be conducted. We anticipate the work to be mostly cosmetic, with some body work needed and then a full repaint into the classic Canadian National scheme.

The restored CN 6520 is intended to become a mainstay of our operating locomotive fleet, and will add valuable back-up to our other operating motive power. To date, we have relied exclusively on the former CPR FP7A 4069, which has provided yeoman service for us since its restoration in 1999. The 6520's more contemporary brake systems also make it a desired unit for events such as our Polar Express, so expect to find it in these roles for the future.

What about WCRA's other F units? Well, the two operating units will be CN 6520 and CPR 4069, giving WCRA both operational backup for each other as well as one authentic operating F unit from each of Canada's two major railways. WCRA's other FP7A, Algoma Central (nee CPR) 1404, will be a static display as well as a parts source for the 4069 and 6520. And our F7B unit. CPR 4459, is being fitted with a plexiglass side and will show how a diesel-electric locomotive operates, with its main components labelled and interpretive signage all visible. (WCRA News)

Don Evans

BACK COVER TOP: CPR S2a 2-10-2 5813 and a companion descend Field Hill in September 1951; the pusher engines were returning from the summit station at Stephen, BC. Most of the CPR S2a class 2-10-2's ended their days as pusher engines out of Field, British Columbia and Medicine Hat, Alberta. When it was converted to burn oil, companion S2a 5812 was equipped with the Selkirk size tender from the experimental 2-10-4 8000. R. S. Ritchie

HAUT DE LA PAGE COUVERTURE ARRIÈRE: La S2a 2-10-2 5813 et une autre locomotive de même type descendent, haut le pied, la côte Field en septembre 1951. Ces locomotives venaient de pousser un train jusqu'au sommet, à la gare de Stephen, C. B. La plupart des locomotives de ce type ont fini leur carrière à pousser des trains, soit au départ de Field, C. B., ou de Medicine Hat, Alberta. L'une d'elles fut modifiée afin de chauffer au pétrole et on lui ajouta un tender provenant de la locomotive Selkirk 2-10-4 8000. R S. Ritchie

BACK COVER BOTTOM: This is the newly renovated concourse at VIA Rail Canada's Winnipeg Union Station. Recent renovations cost $ 6,000,000 and took 14 months to complete! VIA Rail

BAS DE LA COUVERTURE ARRIÈRE: Voici le grand hall de la gare Union de Winnipeg qui vient tout juste d'être rénovée à sa splendeur d'antan. Ce travail a duré quatorze mois et a coûté six millions de dollars. VIA Rail

Canadian Rail

110, rue St-Pierre, St-Constant, Québec
Canada J5A 1G7

Postmaster: If undelivered within 10 days, return to sender, postage guaranteed.