

PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF COMMERCIAL TRANSPORT

HON. R. W. BONNER, Q.C., *Minister*

A. J. BOWERING, B.A.Sc., P.ENG., *Deputy Minister*

REPORT OF THE
Department of
Commercial Transport

containing the reports on

COMMERCIAL VEHICLES, ENGINEERING, RAILWAYS, AERIAL
TRAMWAYS, PIPE-LINES, INDUSTRIAL TRANSPORTATION,
AND ACCIDENT PREVENTION

YEAR ENDED DECEMBER 31

1965



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VICTORIA, B.C., January 27, 1966.

*To Major-General the Honourable GEORGE RANDOLPH PEARKES,
V.C., P.C., C.B., D.S.O., M.C.,
Lieutenant-Governor of the Province of British Columbia.*

MAY IT PLEASE YOUR HONOUR:

The undersigned respectfully submits the Annual Report of the Department of Commercial Transport for the year ended December 31, 1965.

R. W. BONNER, Q.C.,
Minister of Commercial Transport.

VICTORIA, B.C., January 20, 1966.

*The Honourable R. W. Bonner, Q.C.,
Minister of Commercial Transport.*

SIR,—I have the honour to submit the Annual Report of the Department of Commercial Transport for the year ended December 31, 1965.

*A. J. BOWERING, B.A.Sc., P.ENG.,
Deputy Minister of Commercial Transport.*

Report of the Department of Commercial Transport, 1965

A. J. BOWERING, B.A.Sc., P.ENG., DEPUTY MINISTER

INTRODUCTION

The year 1965 has been a dynamic one for the Department, resulting from industrial activity related to hydro-power development and expansion of the pulp and paper industry.

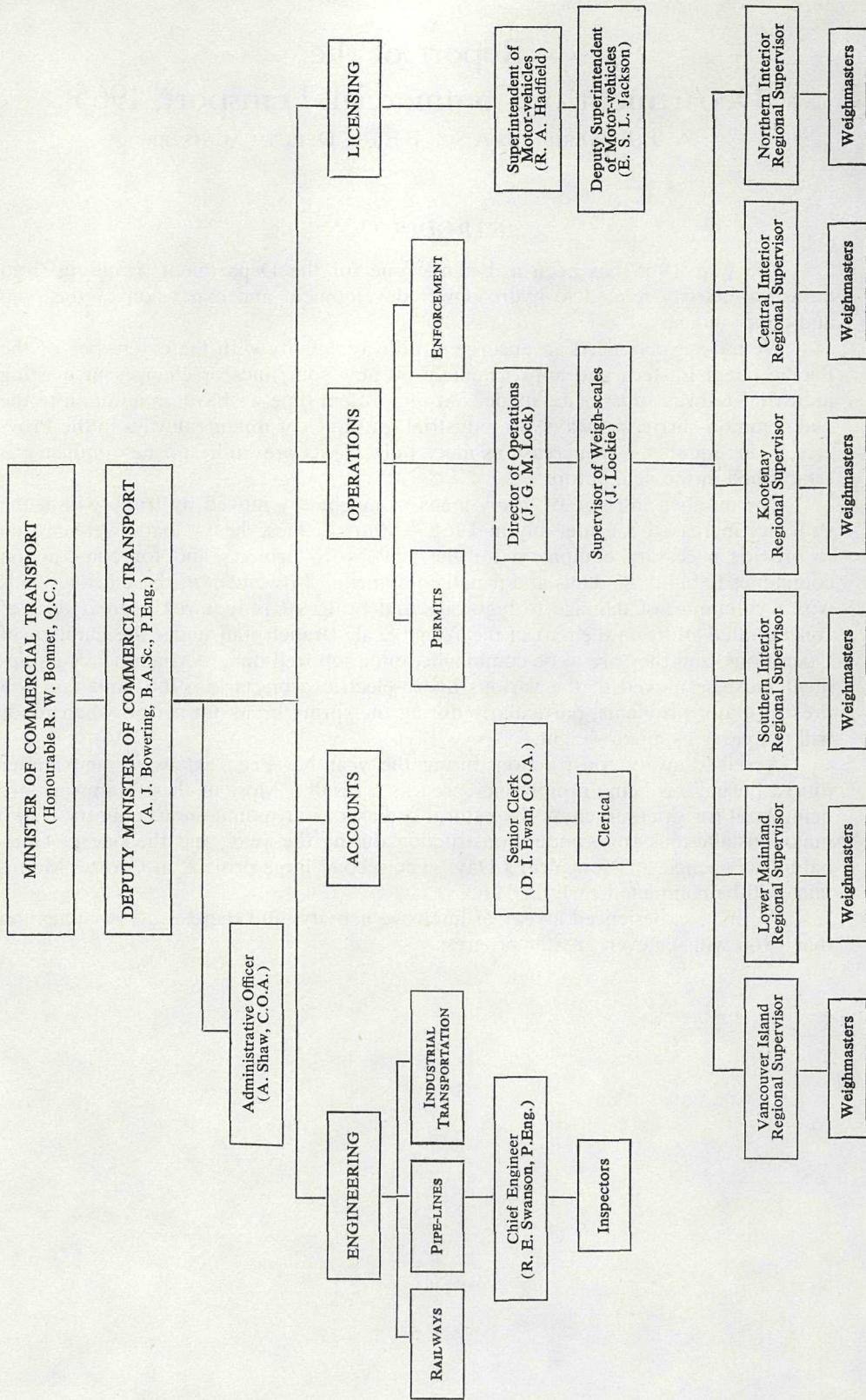
We have experienced an upsurge in railway activity with the extensions of the Pacific Great Eastern and approximately 60 new spur lines or changes in existing industrial-railway spurs being made. At the present time we have, in addition to the two common-carrier railways, 36 industrial spur lines or minor railways in the Province. This number will increase as more pulp plants are built and new industry is established in the near future.

The number and size of heavy loads of machinery moved by truck within the Province increased considerably in 1965. Many of these heavy loads were moved to provide necessary equipment for the new hydro projects and for construction companies to build the dams and install equipment. Movement of these heavy loads with a minimum of damage to highways and bridges has required a great deal of concentrated effort on the part of the Weigh Scale Branch staff under the Director of Operations, and they are to be commended on a job well done. Much heavy equipment must be moved to the various hydro-electric projects in 1966, and this will present major problems, particularly during the spring break-up period when roads will not carry as much weight.

Aerial-tramway construction during the year has been extensive, and winter tourist business is being rapidly increased as a result. Most of these tramways are being built for skiers to enjoy the natural beauty of our mountainous country. Two major installations were under construction during the year, and the one at Garibaldi was opened for New Year's Day. The second large project, at Grouse Mountain, will be completed early in 1966.

We have experienced a year of intensive activity, and there is every indication that 1966 will see even greater progress.

ORGANIZATION CHART



COMMERCIAL VEHICLE BRANCH (Licensing and Operations)

R. A. HADFIELD, SUPERINTENDENT OF MOTOR-VEHICLES
J. G. M. LOCK, DIRECTOR OF OPERATIONS

The Superintendent of Motor-vehicles, through 13 motor licence offices and 45 Government Agencies, carries out the major portion of licensing of commercial vehicles. Additional licensing, and particularly the licensing of non-resident vehicles, is taken care of at weigh-scales located at border points. At these locations, weighmasters not only weigh the vehicles but issue non-resident, single trip, and quarterly permits. This method of licensing out-of-Province vehicles has proven very satisfactory to both the Government and operators.

The flexibility in operation which is provided for out-of-Province operators through these weigh-scales has not only reduced the time required to obtain necessary permits, but it has meant that the permits are issued for the correct weight of vehicle and load. Out-of-Province operators frequently use the facilities of these border-point weigh-stations to contact their equipment operators en route or to have them report back to their headquarters for information purposes or further instructions.

The revenue from commercial-vehicle licences has increased more rapidly during 1965, largely as a result of the dynamic industrial development which is being experienced through the construction of major hydro-electric power projects throughout the Province. The number of commercial vehicles registered in the Province in 1965 was in excess of 146,000 trucks and 15,000 trailers. This is a 30-per-cent increase in a period of five years and an 8-per-cent increase over the previous year.

Issuing of licence-plates generally is placing pressure upon existing facilities, and new areas are being explored for the issuance of these plates. Where practical, commercial-vehicle licence-plates will be issued at weigh-stations, beginning for the 1966 licence-year.

Continued co-operation between Departmental staff of the Motor-vehicle Branch under the Superintendent and field staff of this Department make it possible to co-ordinate available facilities for licensing within the Province.

INTERPROVINCIAL AND INTERNATIONAL AGREEMENTS

In the interprovincial and international trucking field, further progress has been made during the year with improved operating conditions and flexibility through agreements.

The prorate licence agreement which this Province has with 16 American States is operating to the advantage of both the Province and commercial-vehicle operators. Flexibility in operation is extremely important to owners of trucks, and these agreements provide this flexibility at a reasonable cost.

Since the Province entered into reciprocity agreements with the Provinces of Saskatchewan, Manitoba, Ontario, and New Brunswick on the basis of licence fees equal to \$10 a gross ton, there has been an improvement in several interprovincial operations. Two of the larger companies that previously operated through the United States route to the Province of Ontario are now operating most of their equipment on the Canadian route. This has added both licence fees and, more particularly, fuel taxes to Provincial revenues. In addition, these agreements have

helped operators who are in the furniture-trucking business. In recent years, furniture has been brought into the Province and shipped out of the Province by piggy-back rail shipment. Since these agreements have been signed, furniture companies are re-establishing their operations to highway transport rather than rail piggy-back haul.

In addition to the flexibility developed by reason of reciprocity agreements between Canadian Provinces, longer units are being permitted, using 45-foot trailers, which are operating mostly on the Trans-Canada Highway. This increases the volume for lighter-weight shipments on these particular roads, which have been built to accommodate the larger vehicles.

OPERATIONS

British Columbia is riding on the crest of an unparalleled wave of economic prosperity, churned to record heights by major industrial development in all parts of the Province. This vast industrial-expansion programme is reflected in the increased number of commercial-vehicle registrations during 1965. There were an additional 10,278 commercial vehicles registered and licensed in British Columbia during 1965.

There is a general trend in the truck transportation industry to construct the vehicle to do the job, and in so doing eliminate the limiting factor created by standard-type vehicles.

A good example of this trend would be the dual-purpose vehicle which has a low-slung tanker-type trailer unit with a flat-deck top. This vehicle can haul liquid products or bulk freight, or both. This is important in that the economics of vehicle operation are particularly enhanced when a back-haul load is virtually assured. Other two-way haul units are in operation—namely, three-section tankers which carry liquids in two sections and utilize the third section for a return load of dry products.

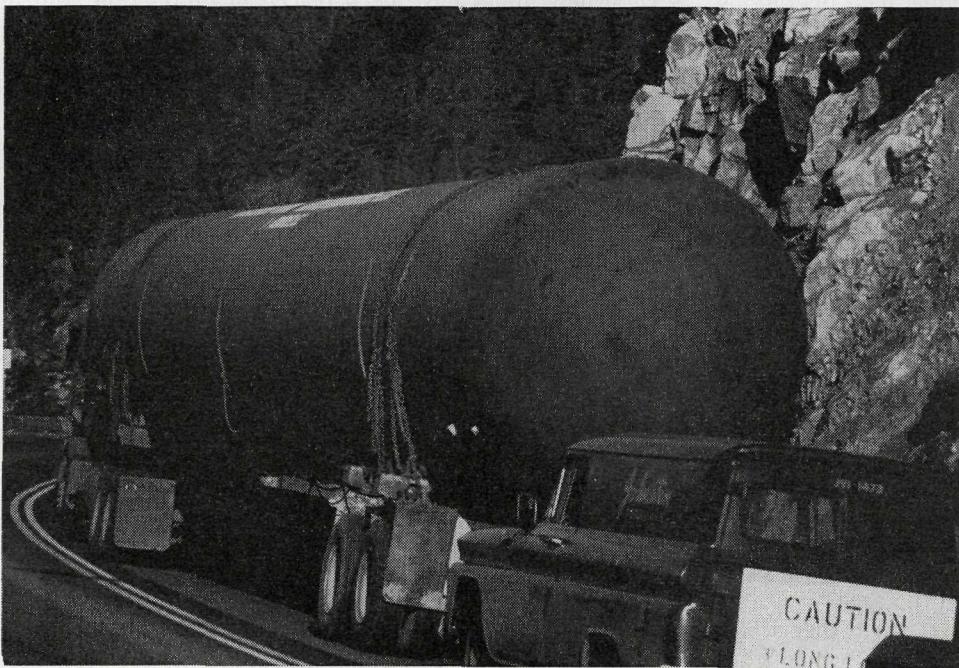
There has been a noticeable expansion in the truck-logging field, with all equipment, including a considerable number of new vehicles, operating to capacity. This has been particularly evident on the Chetwynd-Hudson Hope Road as a result of clearing operations presently under way at the Portage Mountain power-project site.



A typical dual-purpose vehicle combining a tanker and a flat-deck.



Movement of an oversize load requiring the full co-operation of telephone- and power-line companies.



An oversize load en route with pilot car in attendance.

There is a heavy volume movement of portable housing units within the Province. These buildings, which include sectional buildings, bunk-houses, office buildings, and house trailers, are destined to provide living and operational accommodation at the camp-sites connected with the several major power projects under way at the present time at Mica Creek, Arrow Lake, and Duncan Lake. Due to the size of these units, special attention must be given by the Department, and strict control of the movement of these units must be exercised so as not to disrupt the normal traffic flow.

Similar problems occur when heavy equipment which is in excess of legal size and weight limits is moved to the various major industrial projects in the Province.

The new ferry link between Prince Rupert and Alaska has brought an increase in traffic volumes over Route No. 16, and it is anticipated that with the introduction of the new British Columbia ferry-service operation between Kelsey Bay and Prince Rupert, further increases in line-haul operation will occur.

With the construction of pulp-mills at various locations throughout the Province, a major industry is developing in the hauling of pulp-chips from the chippers to the mills. This individual type of operation is particularly evident in the Vernon, Kamloops, and Merritt areas, and on Vancouver Island where 63 truck-and-trailer combinations are operating.

Contrary to the established operational procedures and in an effort to eliminate unnecessary hauling, experiments are currently being conducted with portable chip machines operating in the bush. This eliminates the haul from bush to chipper and results in a saving of both time and money.

Renewed interest in mining in British Columbia has resulted in an increase in mine haul operations. Several new mines have been placed in production, and in a number of cases dual-purpose back-haul vehicles are being designed to carry out these operations on an economic basis. Serious consideration is being given to provide for rapid dumping of these vehicles in order to reduce turn-around time.

With the development of the Province's natural resources, particularly oil and natural gas, a definite trend has been established in the movement of liquid by-products of natural gas by tank truck on the public highway system. These commodities, some of which are inflammable, toxic, or subject to chemical reaction, are considered dangerous, requiring strict regulatory control. Necessary steps are now being taken to properly identify these dangerous commodities and to regulate their movement by commercial vehicle on the public highway system. This is a very serious matter, requiring a great deal of study to assure that a full measure of control is established and that public property and human life receive adequate protection. The first step in this direction has been taken through the enforcement of regulations which restrict the movement of such commodities, or any empty vehicle having last contained such a commodity, through the Deas Tunnel.

To keep pace with the many changes in the pace of industrial development, the Department constructed five new weigh-scales during 1965 at specific locations within the Province. A new weigh-scale was installed on the main highway immediately south of Prince George to meet the demands of local and through traffic in the area.

A further scale was installed at Chetwynd to accommodate the heavy movement of logging-trucks and construction equipment between the Portage Mountain power-development site at Hudson Hope and Chetwynd.

A weigh-scale is currently under construction at Midway, which will provide additional control and facilities for service to the truck transportation industry of the area. It is anticipated this new scale will be in operation in January, 1966.



New-type portable weigh-scales currently being tested by the Department of Commercial Transport.

The Department operates mobile weigh-scale units in each of the six operational regions. These units, used primarily for spot checking in areas not fully covered by permanent scales, utilize a portable type of weigh-scale, the operation of which requires a reading to be taken at each individual wheel while the vehicle is on the scale. As can be readily seen, this system of operation leaves room for improvement, and in this regard a study is being made of a new-type scale.

One set of this new type of scale was purchased by the Department and placed in service on Vancouver Island, where it was felt a good representation of the many forms of truck transportation were in operation. The new dynamic-type scales are

of improved design, easier to handle, and are hydraulically operated. The results of these tests are being carefully scrutinized and recorded, and from preliminary observation it is felt that the new scale will prove to be a great improvement over the ones presently in use.

An increase of 17 per cent in the number of permits issued for the movement of large and heavy loads is indicative of the expanding work of the Weigh Scale Branch. Work which is presently being carried on for other departments of government may have to be curtailed in some areas in the near future due to this increased industrial load.

The weigh-scale staff at Chetwynd will be used in 1966 to issue licence-plates for commercial vehicles. This is an added service to the industry, and where possible will be extended to other areas.

REGION 1 (VANCOUVER ISLAND)

Industrial activity in this area has increased considerably during 1965. This is largely due to the major developments which are under way in the Gold River and Campbell River areas, and is reflected in the increased volume movement of commercial vehicles generally on Vancouver Island, but more particularly in the movement of heavy construction equipment. Despite the fact that most of the movement of logging-trucks is restricted to the many miles of private industrial roads on the Central and Northern Vancouver Island areas, the general advancement of industrial development has necessitated a higher degree of use of the public highway systems for this purpose.

With the completion of the deep-sea shipping facilities at Cowichan Bay, the movement of wood pulp-chips has increased considerably during 1965 in Central Vancouver Island and particularly in the Lake Cowichan and Youbou areas.

There has been a slight change in the movement of lumber for export in that the loading facilities at Crofton and Chemainus have taken predominance over the Ogden Point shipping area at Victoria; however, this is only a minor change, and Ogden Point still handles a considerable amount of export lumber.

Logging operations in the Sooke and Kelsey Bay-Sayward areas have been operating at full capacity throughout the year.

Considerable activity is evident at the Mount Washington copper mine, and at the present time several trucks are hauling from the mine to Hatch Point.

Restrictions were removed from the Port Alberni-Tofino Road during the year, and as a result there has been a noticeable influx of heavy logging and construction equipment moving within the area.

REGION 2 (LOWER MAINLAND)

The majority of the roads in the Powell River area are private, and as such are not subject to the same control as the public highways; however, it is reported that the area has retained its high rate of industrial activity during 1965, and that a high standard of commercial-vehicle operation within the area is generally being maintained.

Logging operations in the Squamish-Pemberton area were fairly extensive during the year, and the usual heavy timber shipments were maintained. At the present time a plant is under construction in the Squamish industrial area for the manufacture of liquid caustic soda, muriatic acid, and chlorine, which, when completed, will no doubt increase the truck hauling activity between Squamish and Vancouver.

With the completion of Highway No. 401 and the construction of the weigh-scales at Port Mann, congestion at Pattullo Bridge weigh-scales has been relieved to some degree. It is hoped that renovations to the weigh-scale building at Pattullo Bridge, currently under way, will further relieve traffic congestion, particularly at the southern end of the bridge.

The construction of the new Hunter Creek scales, located on either side of the Trans-Canada Highway and serving both eastbound and westbound traffic, has completely eliminated the dangerous situation which existed as a result of the required left turn into the old Flood weigh-scale station.

The movement of nickel and copper concentrates to North Vancouver has been particularly evident during the year. Heavy ore-carrying trucks are making two trips daily from the Giant Mascot mining operations in the Choate area carrying approximately 23 tons per load. Bethlehem copper mine is hauling six trips per day of approximately 24 tons per load from the Ashcroft area to tidewater. These concentrates are destined for the export market.

Truck logging in the Hope-Princeton, Yale, and Harrison areas of the Lower Mainland continues to keep pace with the current demand for forest products. Movement of general freight and heavy construction equipment in the Lower Fraser Valley area has retained a high level due to increased construction activity in the Lower Mainland area.

REGION 3 (SOUTHERN INTERIOR)

The year 1965 has been active, and the truck-logging industry has shown a marked increase in the volume movement of forest products within the region. Reconstruction of sections of Highway No. 5 north of Little Fort has opened up an area of the Province which was previously virtually inaccessible, and no doubt this trend will continue as additional sections of the highway are completed. Benefits to be derived, both to the industry and the Province as a whole, are indicated in the increase of commercial-vehicle traffic to be seen in the area. The Lumby-Enderby, Kamloops, Merritt, Princeton, Lillooet-Pavilion, and Penticton areas were particularly active in the field of truck logging during the year, and the movement of lumber by truck showed a marked increase in the Ashcroft area.

Movement of heavy construction equipment has been evident in the Vavenby area for use in the construction of Highway No. 16 between Prince George and Tête Jaune. A construction programme currently in progress at Bethlehem copper mine necessitated the movement of a large number of construction vehicles into the area. Due to the excessive weight involved, these were moved from Merritt via the Nicola Valley to avoid the use of the bridge over the Thompson River at Ashcroft.

The hauling of pulpwood chips from Clearwater, Vernon, Magna Bay, Merritt, and Cache Creek continues at a steady pace and will no doubt increase as the pulp-mill in the Kamloops area has now been completed and placed in operation.

REGION 4 (KOOTENAYS)

Truck logging in the East Kootenay, Kaslo, Slocan, Greenwood, and Rock Creek areas completed a year of heavy operation during 1965.

Export of lumber through border weigh-scale stations at Fernie and Golden continued at a high rate, with Fernie reporting 3,201 trucks hauling a total of 50,239,776 board-feet of lumber and Golden reporting 3,906 vehicles carrying 69,070,575 board-feet. This movement of 120,000,000 board-feet of lumber is an increase of 10,000,000 board-feet over the 1964 shipments through these same two border check points. In addition to this, there was a large number of transport

trucks hauling plywood from British Columbia to the Prairie Provinces. Other quantities of lumber were moved to the Province of Alberta through the Radium-Kootenay National Park route.

Movement of heavy construction equipment through Golden for use at the Mica Creek Dam site on the west leg of the Big Bend Highway has increased considerably. Construction of the Duncan Lake Dam has increased the movement of heavy construction equipment into that area, and a large number of prefabricated camp bunk-houses and house trailers were moved into the area for use in the construction. During the year there were in excess of 200 trailers checked through the Golden scale, destined for the B.C. Hydro camp-site at Mica Creek.

The Fernie scale reports that some 600 truck-loads of cattle, representing 10,970 head, were checked through the scale, destined for export markets. In addition, 87 truck-loads of live bees moved through Fernie from California, destined for the Provinces of Alberta and Saskatchewan.

The completion of the new weigh-scale at Midway will enable the Department to maintain better control of heavy traffic in the area and will provide a more accessible outlet for permits and advice to the local logging-truck operators.

REGION 5 (CENTRAL INTERIOR)

Truck logging in the Williams Lake, Quesnel, Prince George, Hazelton, and Terrace areas has been heavy throughout the year, only relaxing during the early spring when restrictions were imposed due to heavy frost conditions. The construction of two pulp-mills in the Prince George area is creating considerable work for truck loggers in the Prince George area. Pulp-logs are being stockpiled at both mill-sites in readiness for commencement of operation, which is scheduled for early 1966.

The high rate of industrial development in the Prince George and surrounding areas has initiated a large-volume movement of local truck and construction equipment through the Prince George weigh-scales. This, together with the Highway No. 97 relocation undertaken at Prince George, necessitated a new weigh-scale station be constructed on the main highway immediately south of Prince George. This particular site was chosen to service through traffic and also local traffic using facilities in the adjacent Pacific Great Eastern Railway industrial complex.

The Terrace and Hazelton areas supply a considerable amount of long poles, the movement of which necessitates careful handling due to the excessive lengths involved. The Department's portable weigh-scale unit makes frequent trips into these areas to control the movement of these long loads and to assist operators.

There has been a steady increase in the line-haul freight shipments from the United States and Southern British Columbia through the Prince George check points. Some of these vehicles are destined for Prince Rupert, where a portion of the freight is moved by ferry to Ketchikan, Alaska.

REGION 6 (NORTHERN INTERIOR)

This region, which encompasses the whole of British Columbia north of the Pine Pass, remains very active in the field of truck transportation. The B.C. Hydro power-development project at Portage Mountain continues to dominate the field, with a large volume of heavy construction equipment moving into the site from rail-head at Fort St. John and Chetwynd. Due to the magnitude of the project and the type and size of the equipment being used on this project, a steady liaison between the contractors, the Department of Highways, and the Weigh Scale Branch staff in the area is necessary.

Reconstruction of the highway between Chetwynd and Hudson Hope and the upsurge of industrial activity in the area made it necessary that a weigh-scale be constructed at Chetwynd. This was completed and placed in operation in November, 1965, and has proven to be very satisfactory both to the Department and to the truckers using this route.

The high rate of industrial development in the Chetwynd area has created a problem in housing accommodation, and it was necessary for the Department to purchase and install two mobile house trailers to accommodate the staff stationed at the Chetwynd weigh-scale.

There has been a heavy increase in truck logging in the Chetwynd area, where timber must be removed before the area is flooded by the Peace River dam.

Continued activity in the field of oil and gas development in the north-eastern section of British Columbia is evidenced in the number of drilling rigs being transported within the area. These drilling-rig units usually consist of a convoy of from 6 to 7 vehicles to as many as 15 vehicles, most of which are hauling equipment which is oversize and necessitates close supervision while travelling upon public highways. This activity is more predominant in the Fort Nelson area and Boundary Lake area of the Province.

Line-haul truck transportation destined for Alaska and travelling along the Alaska Highway has remained steady and presents little or no problem to the Department.

During the year, due to circumstances beyond its control, it was necessary for the Cassiar Asbestos Company to employ a large number of commercial vehicles to transport its products to rail-head at Fort St. John. With the co-operation of this Department and the Department of Highways, this emergency substitute operation was successfully completed, and the company has now resumed its normal shipping programme.

PERMIT ISSUING OFFICES

WEIGH-SCALES

Chetwynd	Kamloops	Ruskin
Dawson Creek	Midway	Rutland
Deas Island North	Pacific	Saanich
Deas Island South	Parksville	Sicamous
Duncan	Pattullo Bridge	Tupper Creek
Fernie	Port Mann East	Vanderhoof
Fort Nelson	Port Mann West	Vernon
Fort St. John	Prince George North	Victoria
Golden	Prince George South	(term permits)
Hunter Creek	Quesnel	Williams Lake
Kaleden	Rossland	Yahk

PORABLE PATROLS

Lower Mainland	Okanagan	Prince George
Nelson	Peace River	Victoria

DEPARTMENT OF FINANCE GOVERNMENT AGENTS

Alberni	Clinton	Duncan
Ashcroft	Courtenay	Fernie
Atlin	Cranbrook	Fort Nelson
Burns Lake	Creston	Fort St. John

Golden	New Denver	Rossland
Grand Forks	New Westminster	Salmon Arm
Gulf Islands (Ganges)	Oliver	Sechelt
Invermere	Penticton	Smithers
Kamloops	Pouce Coupe	Squamish
Kaslo	Powell River	Terrace
Kelowna	Prince George	Vancouver
Kitimat	Prince Rupert	Vanderhoof
Lillooet	Princeton	Vernon
Merritt	Quesnel	Victoria
Nanaimo	Revelstoke	Williams Lake
Nelson		

MOTOR-VEHICLE BRANCH OFFICES

Abbotsford	Mission	Vancouver (East)
Chilliwack	New Westminster	Vancouver (Point Grey)
Cloverdale	North Vancouver	Victoria
Dawson Creek	Trail	
Kamloops	Vancouver (Main)	

MISCELLANEOUS

Engineering Branch, Department of Commercial Transport, Vancouver.
 Director of Operations, Department of Commercial Transport, Victoria.

ENGINEERING BRANCH
(Railways, Aerial Tramways, Pipe-lines, and Industrial
Transportation)

R. E. SWANSON, P.ENG., CHIEF ENGINEER

RAILWAYS

During 1965 the common-carrier railways—namely, the Pacific Great Eastern Railway and the British Columbia Hydro and Power Authority—operated to full capacity. Industrial railways and plant railways continued to expand both in numbers and in mileage of trackage. Logging-railways operated throughout the year without incident, while the recreational railways, such as Stanley Park and Cowichan Valley Museum railways, continued to haul the public in accordance with the rules set forth by the Department in that respect.

Separate reports are submitted for the common-carrier main lines and for the individual logging-railways. As the industrial in-plant railways have been on the increase, perhaps a short résumé of the activities of this phase of railroading should be set forth as a matter of record.

The two new pulp-mills at Prince George and the new pulp-mill at Kamloops each have installed an in-plant railway complex to handle chips and manufactured products. These plants use "trackmobiles," which are a form of motive power capable of moving one or two railway cars at a time. Several of the pulp-mills employ their own steam or diesel locomotives to do the switching. In either case the train crews involved require to be trained and certified in the interests of safety and proper operation. In addition, the Department engineers are required to check the plans and drawings of all track layouts and make inspections of the track and motive power before such layouts are put in operation. Annual inspections of the track and motive power are then carried out. In most of the pulp-mill operations the handling of chlorine gas by railway tank car is the rule, and our engineers check carefully into this phase of the operation.

In plants like the McMahon at Taylor, our engineers check on the loading of liquefied propane gas into railway tank cars as well as the loading and handling of liquid sulphur. In other cases at the unloading points on the railways, our engineers approve and inspect the facilities for unloading liquefied petroleum gas and refinery products.

Where propane and butane are handled by the Canadian Pacific Railway, the Canadian National Railway, or the Great Northern Railway, and the unloading facilities are located other than on the rights-of-way of those railways operating under Federal jurisdiction, the unloading and storage facilities are under Provincial jurisdiction, and our engineers check into this phase of the operation under our Part XII rules for the handling and storage of such commodities. This is considered most necessary in the interests of public safety, and all our engineers have been appointed Local Assistant Fire Marshals so that our efforts in this regard are integrated with those of the office of the Fire Marshal.

The industrial spurs serving the lumber industry throughout the Province require periodical inspections by our engineers. This is done in the interests of safety, where standard clearances are maintained and clean-up work in and around tracks must be maintained, particularly in chip-loading areas.

Prior to 1965, all railway cars were built in Eastern Canada, but in 1965 an order was placed with the Vancouver Iron and Engineering Works for 109 high-side

chip cars, 50 flat cars, and 10 89-foot piggy-back cars. The design for the cars was checked by our engineers, and the cars themselves inspected before delivery. Difficulty was experienced with the design of the safety appliances as the cars were required to interchange with the transcontinental railways operating under Federal jurisdiction and the Federal rules do not allow welding. A total of 150 railway cars was built in Vancouver and delivered by the end of 1965.

Eight large 1,800-horsepower diesel locomotives were delivered to the Pacific Great Eastern Railway in 1965 and one small 300-horsepower diesel locomotive for a pulp-mill. These were checked and inspected by our engineers. In addition, a number of "trackmobiles" were delivered for use at grain terminals and pulp-mills. These required the application of air brakes, and the crews to operate the equipment for the switching of railway cars required special instruction in the use of air in switching.

The extensions of the Pacific Great Eastern Railway were under construction during 1965, and our engineers made token inspections as the pressure of other work did not permit detailed inspections in all phases of construction.

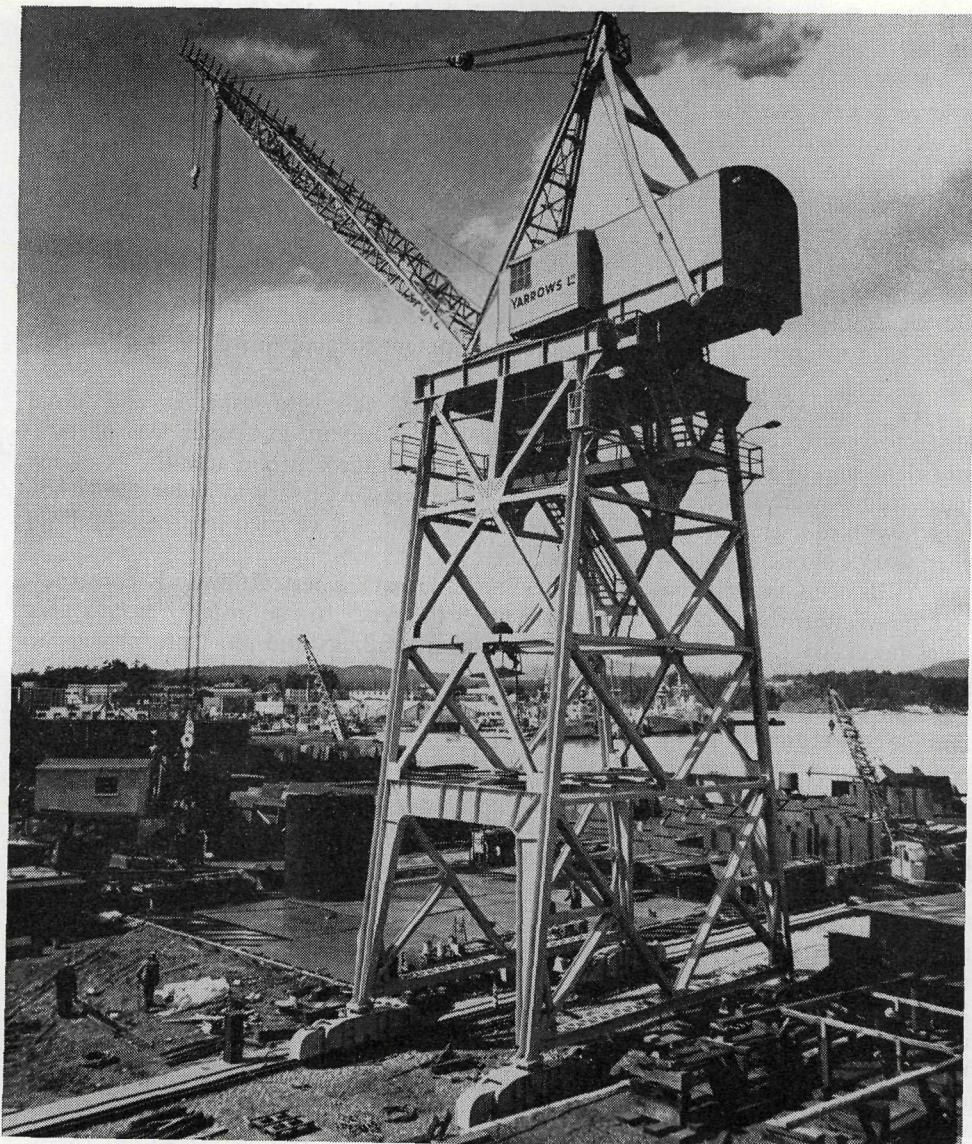
The wharves and terminals in the Lower Mainland area required a great deal of attention during 1965. This was due mainly to the lack of properly trained personnel, such as locomotive operators and switchmen. Our engineers have been required to train and certify a number of switchmen and operators in this special work, and in most cases their certification has been restricted to the wharf and terminal areas as such personnel is not experienced in main-line operation.

At the Surrey ship terminal, railway cars are loaded from the five major railways in the United States. The connecting carrier is the Great Northern Railway. A steamship of approximately 8,000 tons has been procured to operate between the port of New Westminster and Alaska. This ship thus makes the rail link between Alaska and the other 48 States of continental United States. The ship cannot by United States law operate between two States, which explains why the terminal is situated in British Columbia and served by the Great Northern Railway.

A problem arose at this terminal with respect to the number of men employed commensurate with safety in the loading and unloading of the ship and the handling of railway cars. The problem was aggravated to some extent due to the ship being registered in Nigeria, so that the *Canada Shipping Act* did not apply to this vessel. The matter was resolved by taking the stand that under railway law, while the rails on the ship are connected physically to the rails of the railway, the rails on the ship form part of the railway. The matter was therefore resolved, and the Department stipulated the number of men required to safely load and unload the vessel with railway cars, and no accidents have been reported during the year.

In the wharves and terminals of the Lower Mainland area, a problem has arisen concerning qualified men to act as switchmen and locomotive engineers. This has been resolved to a large extent by training programmes followed by the certification of the men concerned. There are several terminals, including Vancouver Wharves, Pacific Coast Bulk Terminals at Port Moody, Pacific Coast Terminals at New Westminster, Johnston Terminals at Surrey, and other smaller terminals, including switching operations at the grain elevators. In all cases, inspections have been made where both company and union personnel have accompanied the inspecting engineer. This has been done to assure safety and to prevent accidents.

A large travelling-type crane installed at Yarrows shipyard in Victoria early in 1965 replaced a lighter crane which was inadequate to handle necessary heavy loads. This new crane, which was inspected and certified by Department engineers, has a capacity of 50 tons at a 40-foot radius. It is powered by electricity and has a jib boom which may be raised to 165 feet and rotated around 360 degrees.



Mobile crane operating on steel rails recently installed at an industrial operation on Vancouver Island.

PACIFIC GREAT EASTERN RAILWAY COMPANY

Chief Engineer's Report

During the week of May 13, 1965, a general inspection was made of the permanent way and facilities of the Pacific Great Eastern Railway. An inspection was also made of the spurs serving industry at various locations throughout the entire railway system. The trip was made by track motor with appropriate officials of the railway present.

Between North Vancouver and Squamish it was noted considerable rail wear was evident, and the officials pointed out that the rail was to be replaced between

Horseshoe Bay and Squamish by 100-pound steel during 1965. In fact, preparations were under way at the time of the inspection for the changing of this rail.

It was noted at Squamish preparations were under way for additional trackage to serve a new chemical plant and to provide loading facilities to load liquefied petroleum gas from railway cars to transpacific ships. Preparations were under way at Squamish to increase the yard, which necessitated the relocation of public roads and signalized railway crossings.

It was observed the 100-pound rail recently laid on the mountain subdivision increased the stability of the track and provided better operating conditions with less derailments. A number of sidings had been recently built to accommodate 100-car trains. These were inspected. In one or two instances loggers were instructed to remove gin-poles and other equipment located too close to the main line.

The yards at Lillooet, Clinton, and Williams Lake were inspected and found satisfactory with respect to safety and clean-up. The yard at Exeter was particularly clean and in good shape. However, throughout the Cariboo area the company trader sidings were not clean. In one instance it was necessary to order the switch spiked, with rail service cut off until the lumber company cleaned its tracks and did other work commensurate with safety.

At Prince George it was noted the Pacific Great Eastern Railway is constructing a large industrial park several square miles in area. In one instance in this area it was necessary to instruct contractors that guard-railings and red lanterns were to be put up when deep excavations were made near tracks. This was done to protect trainmen employed during the dark hours when contractors are not working but trains are operating. In other instances private crossings of the railway required identification. The new track scales were inspected at this point, as were various completed trader sidings and trackage.

North of Prince George the trackage serving the two new pulp-mills was inspected, as was the interchange trackage between the plants and the main-line railway. Certain changes and betterments were ordered at the pulp-mill trackage with respect to proper railway operation and safety of workmen. Crews were instructed and follow-up inspections set up to see the work completed. In one instance it was necessary to have stop signs moved to better serve the crossing of the Pacific Great Eastern Railway by private roadways serving the pulp-mills, and instructions were issued to company security officers with respect to the enforcement of the observance of stop signs at the railway. The track clearances were checked in both plants and found to be in accordance with plans approved by the Department in this respect.

Further north it was observed the slide area at the Old Four Mile had withstood the rigours of a hard winter with very little track movement, and that the alignment of the track north of Prince George was quite good for that time of year.

Trader sidings in the area north of Quesnel were inspected, and in a number of cases it can be reported were found to be unsatisfactory. Sawmill operators were given the alternative to either clean up their sidings and restore safe conditions or service would be temporarily suspended until conditions were corrected. In this regard the Department wrote letters, and it can be reported follow-up inspections revealed that safe conditions were restored without a disruption of service.

The Dawson Creek subdivision was in satisfactory condition. This line is laid mostly with 60- and 70-pound rail, but it must be borne in mind traffic does not justify heavier steel, and the railway would be ill advised to replace this rail until the density of traffic justifies a change in that direction.

It can be reported on the main line between Chetwynd and Fort St. John the road-bed is consolidating in a satisfactory manner, as relatively new track cannot be expected to become stabilized except over a period of years.

A soil engineering study, instituted by the railway after construction, was checked. The drainage provided is doing much to consolidate the soft glacial or alluvial till so prevalent in this area.

It was noted the rail change programme, particularly in the Anderson Lake and Seaton Lake areas, was in hand and showed progress at the time of inspection. On Pavilion Mountain, south of Kelly Lake, the 100-pound rail replacement has improved operating conditions.

The overhead wire crossings of power-lines over the railway were examined and a follow-up inspection ordered. British Columbia Hydro and Power Authority engineers were to be in attendance during inspections of these proposed new 500,000-volt crossings of the railway to assure that standards equal to those on the transcontinental railways are strictly adhered to.

In a number of cases where motive power was inspected, it was found to be generally satisfactory; however, certain minor defects required attention.

In conclusion, it can be reported the permanent way of this railway is in a satisfactory condition and is being properly maintained.—*Robert E. Swanson, P.Eng., Chief Engineer.*

Inspecting Engineer's Report on Annual Inspection

During 1965 numerous inspections were made by this Department with reference to the various operational phases of the Pacific Great Eastern Railway.

Through the week of November 1st, the annual track inspection of the railway was carried out by track motor in company with railway officials. Mr. R. Cuddeford, B.C. Hydro transmission engineer, was also present on the inspection trip for the purpose of making a survey of all B.C. Hydro power-line crossings of the railway. Safe condition of the high-voltage wire crossings, such as dead-ending and other necessary precautions, were discussed in detail during the inspection. Roadbed, track, bridges, and structures and all phases of the railway operation were observed from North Vancouver to Dawson Creek and Fort St. John.

Right-of-way conditions between North Vancouver and Squamish are, in general, very good. Due to the rocky terrain through which this portion of the line traverses, it requires continual attention by the maintenance crews to keep the track in safe operating condition. The heavier steel laid between Horseshoe Bay and Squamish has added greatly to the smooth operation of this portion of the railway.

Between Squamish and Lillooet, track conditions were observed and found to be normal. Tie renewal, ballastery, and ditching have been carried out extensively, resulting in a good stable condition of the road-bed.

Between Lillooet and Prince George the general condition of the track is good. The extensive increase of freight traffic over the line includes heavy loadings, and the necessity of using several motive-power units on each freight train makes it imperative that a continuous programme of preventive maintenance is carried out, especially in those areas where weather conditions affect the stability of the road-bed. It is often necessary to place "slow" orders over portions of the line until the maintenance crews can make the necessary adjustments to keep the line in a safe operating condition.

Between Prince George and Chetwynd, corrective measures have succeeded to a large extent in stabilizing this portion of the road-bed, and, in general, the track is in good order and is being properly maintained.

Between Chetwynd and Dawson Creek the road-bed is still in a very unsettled condition due to the movement of the terrain over which the line passes. As a result, considerable portions of the road-bed require more extensive maintenance in order to keep the line in good order.

Between Chetwynd and Fort St. John the railway has invoked an extensive maintenance programme and is in good order, with ground conditions leading into the Peace River crossing fairly well settled in most cases.

During April of 1965 a thorough check was made by track motor of all grade crossings and industrial sidings between North Vancouver and Fort St. John. At that time it was noted that a number of the sidings servicing lumber-mills and chip-loading facilities were in an unsafe condition due to the accumulation of debris that had been allowed to gather in the loading areas. This created a hazard to train crews when switching operations were being carried out. At that time these conditions were brought to the attention of those responsible with instructions to rectify them at once. It was noted that there is a marked improvement in most cases. It is felt that the railway company would be justified in refusing service to any industrial spur that is allowed to become unsafe for switching operations due to neglect on the part of the user.

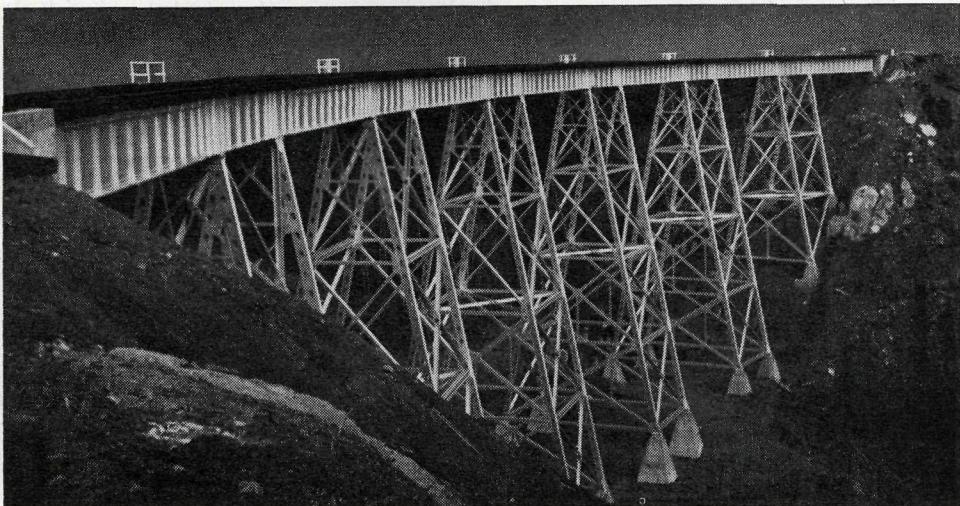
In conjunction with the Pacific Great Eastern Railway Company engineering departments, all public highway crossings, access crossings, and farm crossings were rechecked as to status, and any additions, eliminations, or other changes during the year were corrected and our records changed accordingly. A number of crossings have been eliminated by overpasses, but to date there are 448 grade crossings over the system, with the location and status of each one carried in our files for ready reference.

Bulk-storage plants of the major oil companies at Squamish, Lillooet, Williams Lake, and Quesnel which are serviced by railway tank cars were inspected. These storage facilities are governed by regulations pursuant to the *Railway Act* and must meet the requirements of these regulations with regard to the unloading of tank cars in a safe manner.

The liquid-propane installations for the loading of deep-sea vessels from railway tank cars at the railway terminal in Squamish is also governed by the same regulations. From the approval of the installation plans until the final testing of the various piping facilities, inspectors from this Department, in conjunction with railway officials, made the necessary adjustments to ensure the safety of this operation.

The increased demand by pulp-mills for huge quantities of wood chips has resulted in the installation of facilities for the fast loading of railway chip cars of a capacity of 6,400 cubic feet per car. These installations were observed during the annual inspection. All installation plans had previously been checked and approved by this Department. It was noted that loading of railway chip cars was being efficiently carried out, resulting in a minimum of delay in the delivery of loaded cars and the return of empties to the various lumber company sidings by the railway company.

The inspection track motor while operating on the main line was classified as an extra train operating under train orders issued by the dispatcher. As a result, ample opportunity was provided during the inspection trip for a good insight into the control of train movements by train orders and radiotelephone from the dispatcher's office in Vancouver. It can be stated that traffic movement and control is being very efficiently carried out.



One of the new steel trestles replacing the old timber trestles on the Pacific Great Eastern Railway.

Ballast and Tie Renewal.—The ballast programme on the railway has gone forward and has been kept up to standard, resulting in an improved track condition over the system. The policy of replacing ties with creosoted ties has been carried out during the year, and approximately 150,000 of these ties were placed in 1965. Approximately 200 miles of right-of-way were treated with weed-killer spray during the year.

Bridges.—All bridges on the line were visually inspected and found to be generally in good condition, with maintenance and renewal keeping well ahead of deterioration. The coating of bridge deckings with the Rada-Decote and pea-gravel mixture as fire protection against brake-shoe sparks has shown good results and is being continued. Creekside Trestle, Mile 106.9, and Stone Creek Trestle, Mile 444.5, were renewed during 1965. Conditions of the north abutment of the Cottonwood Bridge were observed. Slope stabilization of the north-east approach was carried out this year. A retaining-wall was constructed at the river bank with back-sloping and drainways on the abutment, and at the time of the inspection no ground movement was apparent.

Rail Re-lay.—Approximately 70 miles of rail re-lay were completed in 1965 by replacing 85-pound rail with 100-pound rail from Mile 11 to Mile 39.1, Mile 77.2 to Mile 79.5, Mile 122.8 to Mile 155.0, and Mile 159.5 to Mile 165.8. A number of spurs and sidings were installed during 1965, as shown in the attached appendix.

The new Stuart Lake subdivision, under construction, has had 12 miles of track laid, and 12 miles of grade have been completed on the Kennedy Lake branch line.

Shop and Repair Facilities.—The motive power and rolling-stock were inspected at regular intervals during the year by this Department. Maintenance was good, and all locomotives and other power could be certified to be in order. Due to the large increase in requirements of motive power and rolling-stock, it will be necessary to increase the facilities for efficient maintenance and repairs. A modern locomotive-shop is being constructed at the Prince George yard, which will also include an up-to-date car repair and maintenance section.

The main locomotive and car repair-shops at Squamish, which handle all the major repairs and overhauls for the entire system, will be enlarged in the near future in order to meet the requirements of increased maintenance due to the large increase in traffic being handled.

Prince George South Yard.—The Prince George South Yard industrial-development project is well advanced. Approximately 10 miles of new trackage have been installed in the project area for the storage and make-up of car-loadings. This also serves the numerous industrial sites acquired by such companies as British Columbia Hydro and Power Authority, Finning Tractor & Equipment Company Limited, Canada Wire & Cable Company Limited, Dietrich-Collins Equipment Limited, The Eddy Match Company Limited, and many other concerns requiring separate trackage and warehouse facilities. Approximately 225 acres have been cleared, and water and road facilities installed. A new railway administration building and station facilities are included in the development of this complex. The process of car-loadings and train make-up is greatly speeded up by the installation of weigh-in-motion scales, so that train consists can be weighed and tabulated while the train is passing over the scales at the rate of 4 miles per hour.

From the observations made during this track inspection, it can be stated that the Pacific Great Eastern Railway is being properly operated and maintained, and the public and industry are being properly served.—*J. H. Carmichael, Inspecting Engineer.*

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

Inspecting Engineer's Report

On December 1, 1965, the annual inspection was made of the above railway from Mile 0, New Westminster, to Mile 63.92, Chilliwack.

The inspection was made by track motor in company with Mr. W. Alcock, roadmaster, and Mr. F. Friedel, superintendent of maintenance, Fraser Valley lines.

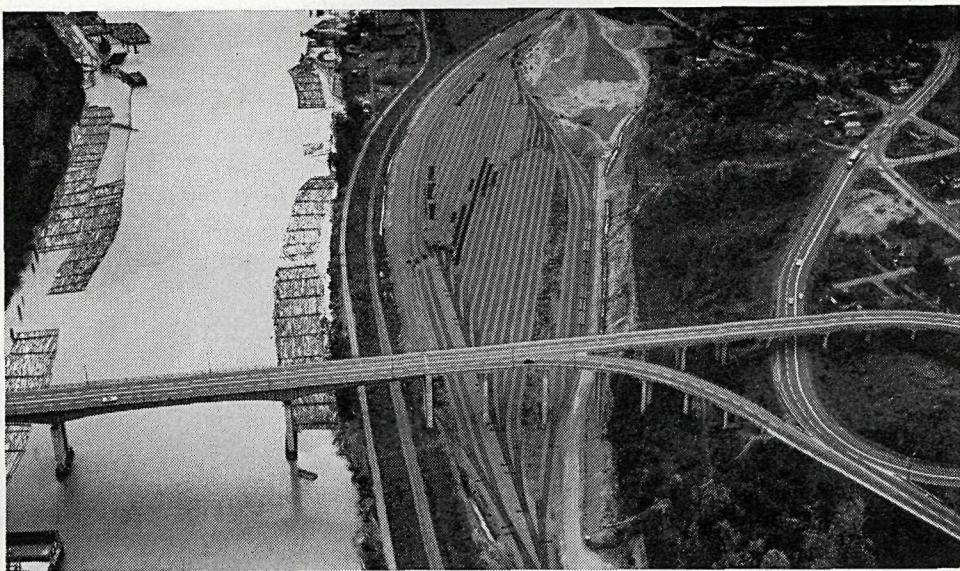
The railway is in excellent condition throughout its entire length. The results of an efficient maintenance-of-way programme throughout the year are very evident with regard to ballastery, tie renewal, weed control, ditching of wet cuts, and culvert installations. All trestles, including the reconstructed Vedder River Bridge, were observed and found to be in good, safe condition.

The reflectorization of all switch-stand targets has been completed and is much superior to switch lamps previously in use, both as to visibility and dependability.

The new railway freight yard in New Westminster, completed this year and officially opened for service on October 28th, takes in an area of 21 acres. The initial stage of construction comprises a total of 7.4 miles of track to store 540 cars. This will be increased to 10.4 miles of track with a capacity of 825 cars. The new weigh-scales installed to service the yard have a capacity of 200 tons. The construction of this yard and its connection with several transcontinental railways provide excellent service for the direct movement of freight to any point in Canada and the United States. Approximately 10 miles of industrial spur tracks have been added to the system during the year to service new plants and warehouses that required trackage facilities, including the industrial-development site at Langley.

The motive power for the railway is comprised of 10 diesel-electric locomotives of 900 horsepower, 2 of 600 horsepower, and 2 electric switching-locomotives. The locomotives are inspected at regular intervals by this Department at the New Westminster maintenance-shops, and it can be stated that all motive power is being kept in good serviceable condition by the mechanical staff.

The observations made during the inspection indicate that this railway is being operated and maintained in a safe and efficient manner.—*J. H. Carmichael, Inspecting Engineer.*



British Columbia Hydro and Power Authority freight traffic centre, New Westminster.

CROWN ZELLERBACH BUILDING MATERIALS LIMITED

Inspecting Engineer's Report

On October 6, 1965, an inspection was made of the railway and facilities owned and operated by the above company at its Ladysmith Division.

The track was inspected between the Nanaimo Lake yard and the yards at Ladysmith. Generally, the installation was found to be in good condition and is being well maintained.

All bridges were found to be in good condition, with the exception of the piling which is becoming rotten at the base at the lower end of the Nanaimo River Bridge. It is learned that new piling will be driven during the coming Christmas shut-down.

It was again drawn to the attention of the section foreman, Mr. Tomsett, that the wrecked car parts lying too close to the track at the Nanaimo River Camp cut-off are dangerous and must be moved into the clear.

Unloader No. 3, Gas Switcher 107, and Rail Car 104 were inspected, reservoirs tested, and certificates issued to cover the inspections.

Dispatching procedure was inspected and found to be in order. — *W. F. Thomas, Inspecting Engineer.*

CANADIAN FOREST PRODUCTS LIMITED

Inspecting Engineer's Report

During the period of November 1 to 5, 1965, inspections were made of the railway facilities owned and operated by the above-named company at its Englewood Division.

In company with Railway Superintendent G. Lutz, Roadmaster M. Solecki, and Bridge Foreman G. Collins, a trip was made by speeder over the main-haulage line from Vernon Lake Camp to Beaver Cove. The inspection included all bridges and the yards at Vernon Lake, Woss, Camp "A" Siding, Nimpkish, and Beaver Cove.

The track is in very good condition throughout the whole main line, properly ballasted, and, for the most part, well drained. A new reload with 8,200 feet of accompanying trackage has been installed at Vernon Lake Camp and is ready for operation.

The diversion at Mile 40 and the new bridge over Davie Creek have greatly improved the approaches from both directions.

The track-maintenance programme in 1965 included the renewal of 7,500 yellow cedar ties and 4 miles of 80-pound rail, the latter replacing 70-pound rail between Mile 28 and Mile 32. It is intended to replace a further 800 ties before the end of the year.

Conditions noted were as follows:—

Beaver Cove Dump: Generally good. Some decking required at a later date.

Beaver Cove Yard and Sidings: Renew packing missing from guard-rails and switches.

Kokish Bridge: O.K.

Elk Creek Bridge: Nimpkish end dump requires shoring to prevent cap from rolling.

East Fork: Ties poor due to previous car derailment. This is not serious.

Tsulton Bridge: Clear brush and small ties from around piling.

Halfway Island Bridge: Bottom stringer crushing upstream side of double-deck span. Clear out brush.

Noomas Creek Bridge: Shim piles at No. 1 bent, B.C. end.

Storey Creek Bridge: Renew bad-order ties and guard-rail.

Kinman Creek Bridge: Reinforce crushed cap, Nimpkish end.

Mile 21.5 Bridge: Renew bad-order ties.

Steele Creek: In 1964 the downstream bottom stringer of the double-deck span was found to have insect infestation, with the result that the strength of the stringer was impaired. The infestation was treated, but this did not repair the already damaged area. Company engineers have taken deflection readings while the span has been under load, and it is learned that the deflection did not exceed 1 inch. However, steps should be taken to see that this condition does not worsen, and this could be prevented by strengthening the span until it can be renewed in 1966. A speed restriction of 6 miles per hour has been imposed on this bridge for all traffic.

Twin Creek Bridges: No. 2 Bridge has loose shims on Bents 1 and 2 and loose pile at Bent 3.

Gold Creek Bridge: Batter pile loose west end of Bent 1, rail pile to shim at west end dump, dump to be braced or shored from Bent 2, crib up Bent 5.

Groves Creek and Davie Creek Bridges: In good condition.

Maquilla Creek Bridge: Caps crushing at piers on each end.

Fire Creek Bridge: Install guard-rails.

Mile 38.9: Check culvert. Excessive water on high side of track.

Ditching required between Mile 45 and Mile 47.

Renew packing missing from guard-rails and switches in Siding 1.

Some mile-post signs to renew between Woss and Vernon Camp.

Rail Cars 121, 125, 129, 130, and Diesel Locomotive No. 252 were inspected, reservoirs tested, and certificates issued with defects noted.

Mr. Louis J. Dempsey was examined as a head brakeman and passed successfully.

An independent survey was conducted on all the railway bridges by Dobson Construction Limited, and their findings have been taken into account in preparing this report.—*W. F. Thomas, Inspecting Engineer.*

EQUIPMENT INSPECTIONS DURING 1965 UNDER THE RAILWAY ACT

Following is a list of individual inspections carried out by Department engineers:

Hydrostatic tests applied to boilers.....	36
Air locomotives inspected and certified.....	10
Electric locomotives inspected and certified.....	6
Self-powered rail cars inspected and certified.....	18
Diesel-electric locomotives and cranes inspected.....	69
Air reservoirs tested and inspected.....	230
Railway cars inspected on industrial railways.....	326
Railway cars inspected on common-carrier railways.....	202
Miles of track inspected.....	2,600
Aerial tramways inspected and certified.....	36
Railway conductors examined and certified.....	20
Power-car operators examined and certified.....	3
Locomotive-crane engineers examined and certified.....	4
Steam-locomotive engineers examined and certified.....	7
Motormen examined and certified (Consolidated Mining and Smelting Company of Canada, Limited).....	9
Accidents on logging and industrial railways.....	8
Accidents investigated, British Columbia Hydro and Power Authority Railway Division.....	2
Accidents involving automobiles at crossings of Pacific Great Eastern Railway.....	12

LIST OF RAILWAYS AND SUMMARY OF MILEAGE

Industrial Railways

No. and Owners/Name of Railway	Head Office	Operating	Mileage			Gauge
			Main	Sidings, etc.	Total	
1. Aluminum Company of Canada Ltd.....	Montreal.....	Kitimat.....	2.90	3.19	6.09	Standard.
2. Arrowhead Wood Preservers Ltd.....	Revelstoke.....	Revelstoke.....	0.92	—	0.92	Standard.
3. British Columbia Forest Products Ltd.....	Vancouver.....	Crofton.....	1.50	2.50	4.00	Standard.
4. Canada Creosoting Co. Ltd.....	Montreal.....	New Westminster.....	3.00	3.00	6.00	30" and standard.
5. Canadian Forest Products Ltd.....	Vancouver.....	Nimpkish Valley.....	91.00	19.10	110.10	Standard.
6. Canadian Forest Products Ltd.....	Vancouver.....	Port Mellon.....	0.50	0.50	1.00	Standard.
7. Canadian Industries Ltd.....	Montreal.....	James Island.....	6.25	1.25	7.50	30" and standard.
8. Columbia Cellulose Co. Ltd.....	Montreal.....	Watson Island.....	—	7.01	7.01	Standard.
9. Consolidated Mining and Smelting Co. of Canada, Ltd.	Trail.....	Trail.....	19.00	—	19.00	18".
10. Consolidated Mining and Smelting Co. of Canada, Ltd.	Trail.....	Kimberley.....	9.00	33.01	42.01	18", 36".
11. Crown Zellerbach Canada Ltd.....	Vancouver.....	Ladysmith.....	21.80	4.02	25.82	Standard.

LIST OF RAILWAYS AND SUMMARY OF MILEAGE—Continued

Industrial Railways—Continued

No. and Owners/Name of Railway	Head Office	Operating	Mileage			Gauge
			Main	Sidings, etc.	Total	
12. Crow's Nest Pass Coal Co. Ltd.	Fernie	Michel	1.53	—	1.53	30".
13. Elk Falls Co. Ltd.	Vancouver	Duncan Bay	—	3.00	3.00	Standard.
14. F.M.C. Chemicals Ltd.	Squamish	Squamish	—	0.30	0.30	Standard.
15. Hillcrest Lumber Co. Ltd.	Mesachie Lake	Mesachie Lake	6.00	1.50	7.50	Standard.
16. Hooker Chemicals Ltd.	North Vancouver	North Vancouver	0.10	1.90	2.00	Standard.
17. Island Tug & Barge Ltd.	Victoria	Victoria	—	0.30	0.30	Standard.
18. Island Tug & Barge Ltd.	Victoria	Vancouver	—	0.20	0.20	Standard.
19. Kamloops Pulp & Paper Ltd.	Kamloops	Kamloops	—	2.70	2.70	Standard.
20. MacMillan, Bloedel and Powell River Ltd.	Vancouver	Chemainus	1.58	3.81	5.39	Standard.
21. MacMillan, Bloedel and Powell River Ltd.	Vancouver	Dunsmuir District	1.00	3.10	4.10	Standard.
22. MacMillan, Bloedel and Powell River Ltd.	Vancouver	Harmac Pulp Div.	2.20	—	2.20	Standard.
23. MacMillan, Bloedel and Powell River Ltd.	Vancouver	Port Alberni	—	1.00	1.00	Standard.
24. MacMillan, Bloedel and Powell River Ltd.	Vancouver	Powell River	1.50	—	1.50	Narrow.
25. MacMillan, Bloedel and Powell River Ltd.	Vancouver	Vancouver	—	1.30	1.30	Standard.
26. Northwood Pulp & Paper Co. Ltd.	Vancouver	Prince George	—	3.16	3.16	Standard.
27. Osborne Bay Wharf Co. Ltd.	Mesachie Lake	Crofton	0.33	—	0.33	Standard.
28. Pacific Coast Bulk Terminals Ltd.	New Westminster	Port Coquitlam	—	4.70	4.70	Standard.
29. Pacific Coast Terminals Co. Ltd.	New Westminster	New Westminster	5.20	—	5.20	Standard.
30. Pacific, Jefferson Lake, Westcoast (Pacific Petroleum Ltd.)	Calgary, Alta.	Taylor	3.05	0.71	3.76	Standard.
31. Prince George Pulp & Paper Ltd.	Vancouver	Prince George	—	3.51	3.51	Standard.
32. Rayonier Canada (B.C.) Ltd.	Vancouver	Woodfibre	—	(1)	—	Standard.
33. Vancouver Steel Co. Ltd.	Vancouver	Twigg Island	1.25	—	1.25	Standard.
34. Vancouver Wharves Ltd.	Vancouver	North Vancouver	2.00	—	2.00	Standard.
35. Western Forest Industries Ltd.	Honeymoon Bay	Honeymoon Bay	7.00	0.60	7.60	Standard.
36. Western Plywood (Cariboo) Ltd.	Quesnel	Quesnel	0.95	—	0.95	Standard.

¹ Ferry slip.*Common-carrier Railways*

37. British Columbia Hydro and Power Authority	Vancouver	New Westminster-Huntingdon-Chilliwack	76.58	35.29	111.87	Standard.
38. Pacific Great Eastern Railway Co.	Vancouver	Vancouver to Fort St. John and Dawson Creek	788.60	166.10	954.70	Standard.

Recreational Railways

39. Cowichan Valley Forest Museum	Duncan	Duncan	0.875	0.125	1.00	36".
40. Stanley Park Miniature Railway	Vancouver	Vancouver	0.42	—	—	18".
41. Sam Sunter, Mattick's Farm	Saanich	Saanich	0.20	—	—	10".

AERIAL TRAMWAYS

Aerial tramways, or ropeways, have become a major mode of uphill transportation in British Columbia. Like Switzerland, British Columbia is endowed with excellent winter playgrounds, so that Mont Blanc in the French Alps, the Matterhorn, and other famous mountain playgrounds of Europe are being equalled in grandeur

in British Columbia by names like Garibaldi, Seymour, Granite, Big White, and Forbidden Plateau, where recently uphill transportation has been provided by means of ropeways so that our mountain ski areas now rank with the best anywhere.

The first common-carrier chair-lift in British Columbia was constructed in 1949 on Grouse Mountain in North Vancouver. To assure safety and to protect the interests of the travelling public, the project was put under the jurisdiction of the *Railway Act* and treated for all intents and purposes as a common-carrier railway. The Grouse Mountain project was followed by a second chair-lift in 1951, and a third lift was built in West Vancouver to gain access to Hollyburn Ridge.

In 1950 no rules existed anywhere in Canada, the United States, England, Australia, or in any English-speaking country to govern passenger-carrying aerial tramways. Therefore, the Department at that time conducted a survey of all rope-way facilities in the Western United States and subsequently published a report with a draft of recommended regulations. This report was sent for comment to various English-speaking countries, after which the British Columbia aerial-tramway regulations were published. The regulations were favourably accepted, and California used the British Columbia regulations as a basis for the California State regulations after an engineer from the Department acted as an adviser to the State board in Sacramento at its request.

The British Columbia regulations were the first anywhere to be printed in English, and as a result the Department for a number of years checked and approved aerial-tramway designs for the Government of New Zealand. The American Standards Association used the original British Columbia regulations as a norm for the American Standards Association standards on passenger-carrying aerial tramways in the United States. It can therefore be assumed that British Columbia has played the leading role in North America in formulating safety rules with respect to ski lifts and transportation by ropeway.

In 1963 the Canadian Standards Association approached the Department. It pointed out the need for a safety code or a Canadian standard to govern the construction and operation of passenger-carrying aerial tramways across the nation, as no recognized standard existed except in British Columbia. Transportation by ropeway was increasing, and much of the equipment was being imported from France, Switzerland, and Norway, so that each European manufacturer was free to impose any design he pleased, and safety was apt to be sacrificed to satisfy the competitive trends of international trade. On the other hand, the purchasers in Canada had no knowledge of the dangers involved, and in some cases they were quite carried away by the idea of importing equipment from the ski countries of Europe and took the safety facilities for granted.

The Canadian Standards Association set up a committee to formulate a Canadian standard safety code for passenger-carrying aerial tramways. The Chief Engineer of the Department was appointed as chairman of the committee, with engineers from each Provincial Government as members along with other engineers representing the National parks of the Federal Government. Manufacturers in Canada, the United States, and other countries are represented on the committee, as are representatives from the wire-rope manufacturers and ski operators' associations across the nation.

Meetings have been held in Banff, Toronto, Vancouver, and Ottawa. The next meeting is scheduled for Victoria, B.C., in April, 1966. The new Canadian code is in its fourth draft, and it is expected it will be accepted and published in 1966. There will be a standing committee as with other C.S.A. codes to keep the code abreast of the times and up to date.



Upper terminal, under construction, of the new Grouse Mountain aerial tramway. This multi-storied structure will incorporate a modern dining-room and cocktail lounge.

The year 1965 has been significant in the number of large aerial tramways, or ropeways, constructed during the year. A large reversible tramway, which employs two locked coil track ropes with attendant haulage and tail ropes to control two 50-passenger cabins or aerial coaches, is under construction on Grouse Mountain in North Vancouver. The project, when completed, will cost \$1,750,000. In order to assess the magnitude of this project, it must be viewed as a complex involving not only the tramway, but a huge lower terminal station housing the machinery, operative personnel, cafeterias, ticket offices, waiting-rooms, washrooms, and a parking area for hundreds of automobiles.

The upper station includes, in addition to the station landing area, an ultra-modern dining-room and a cocktail lounge with the necessary amenities to accommodate the public. Access will be immediately available to the new Grouse Mountain Chalet and the ski areas served by two chair-lifts, a T-bar, and several rope tows.

In the Garibaldi and Alta Lake area, another huge mountain playground was opened up in 1965 by the use of aerial tramways or ropeways. Whistler Mountain and Mount Garibaldi are in the same general area, and the alpine meadows are common to both mountains. Ski enthusiasts all agree that alpine meadows provide the ultimate in snow conditions for ski-ing, and Whistler-Garibaldi is the only place in the world which provides snow conditions where ski-ing may be done throughout the 12 months of the year.

To gain access to the mountain area, a large and modern Swiss-built gondola-lift has been installed which employs 62 four-passenger gondola cars travelling uphill at 520 feet per minute to carry 600 passengers an hour to the mid-station, where a double chair-lift 7,000 feet long transports 600 passengers an hour to the alpine meadow area. Here a modern Swiss-built T-bar is provided. For those



Tower, under construction, of the Grouse Mountain aerial tramway. Cleveland Dam and Capilano Estates are visible in the background.

who do not wish to ski in the high-altitude meadow, a modern Swiss-built T-bar is situated adjacent to the lower terminal of the gondola-lift at Alta Lake.

Two new modern hotels in an alpine motif have been constructed adjacent to the lower terminal of the gondola, and in addition four new self-owned multi-storied apartments have been built on high promontories so that the over-all effect when completed will compare with Sun Valley, Idaho. The hotel and apartment area with the lower terminal are adjacent to and served by the Pacific Great Eastern Railway, and in addition the new Squamish-Pemberton Highway is the main street of the new recreational complex.

In the Rossland-Trail district another Swiss-built Mueller chair-lift has been constructed during 1965. It carries 600 passengers per hour over its 9,000 feet, raising the passengers 2,600 feet to the ski area. This lift was tested and approved in December, 1965, so it was in operation for the 1965/66 ski season, augmenting the existing facilities on Red Mountain where a chair-lift and poma-lift have been operating for a number of years.

In the Courtenay-Comox-Cumberland area, the Mount Becher Ski Development Society is extending a T-bar on the Forbidden Plateau.

In the Nanaimo district a poma-lift is being installed on Green Mountain in the Nanaimo Lakes area. This project was not completed by the end of 1965 as a heavy snow blanketed the terrain between Christmas and New Year's. This project is a first in a rather unique way as it is served entirely by an industrial road. Crown Zellerbach Canada Limited has entered into an agreement with the Green Mountain Ski Club to allow access over the logging-road by the public when working conditions permit. A ski lodge is provided at Green Mountain to accommodate the skiers. A chair-lift is proposed for 1966 to make the alpine meadows on Green Mountain more accessible to the ski-ing public.

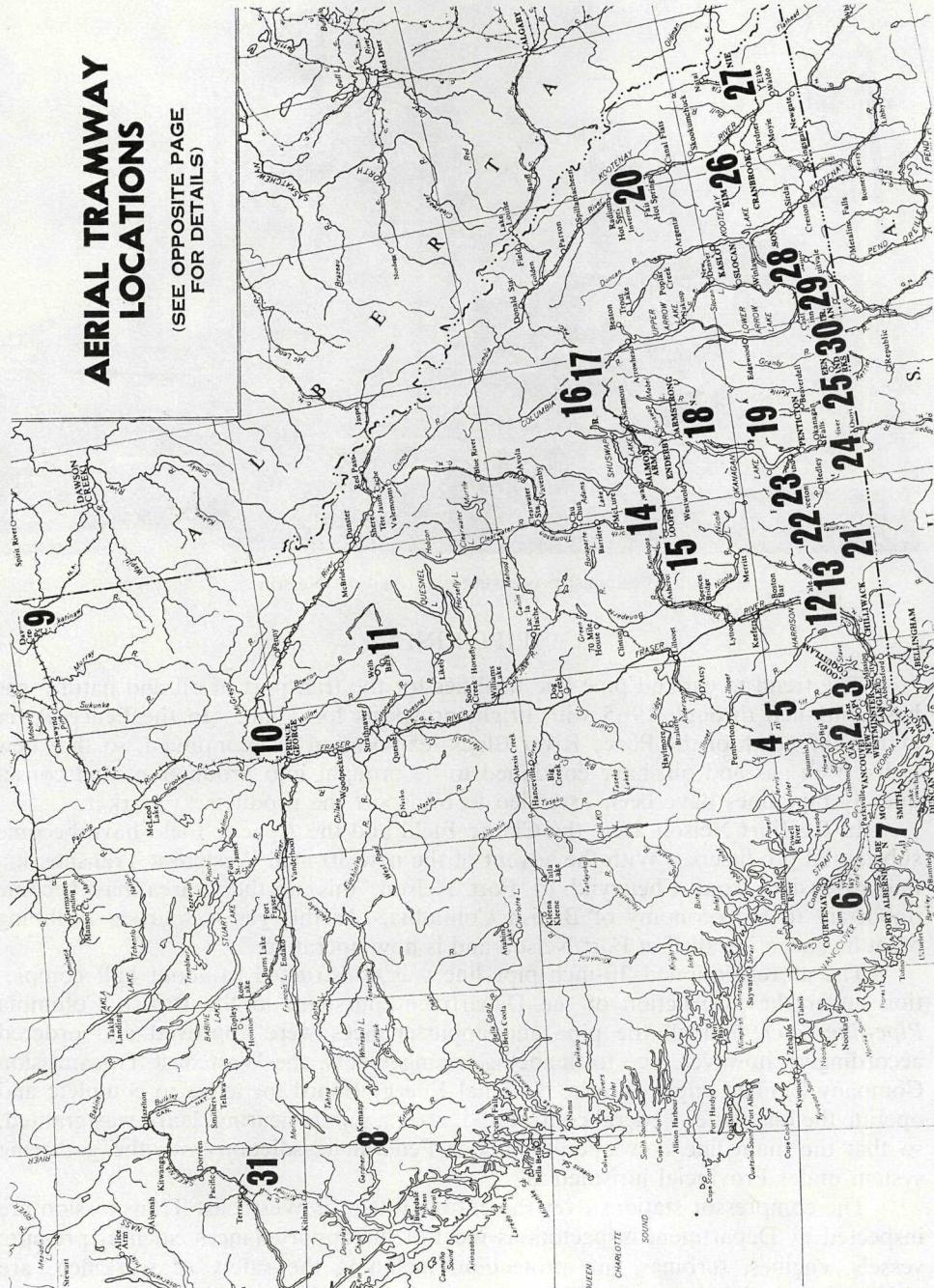
Near Kelowna, at Big White Mountain, excellent ski-ing conditions exist. Big White is served by two T-bars, and a good road is maintained by the company operating the tramway facilities. A new lodge or alpine hotel and additional rope-way facilities are planned for 1966.

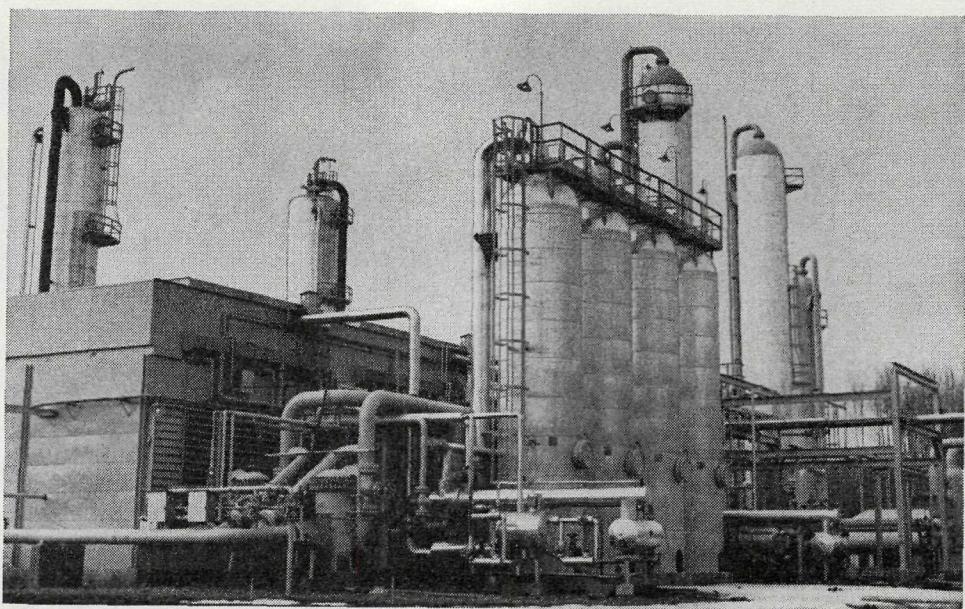
T-bars were under construction during 1965 in the areas of Prince Rupert, Terrace, Dawson Creek, Prince George, Penticton, Osoyoos, Kamloops, Blue River, and Fernie. It is expected the year 1966 will see huge strides in the construction and improvement of ski facilities, as well as summer tourist facilities, through the use of aerial tramways or ropeways throughout British Columbia.

This dynamic development of the recreational areas of British Columbia by the use of ropeway transport during 1965 has increased the aerial-tramway facilities in British Columbia by over 30 per cent.

AERIAL TRAMWAYS REGISTERED WITH THE DEPARTMENT OF COMMERCIAL TRANSPORT TO DECEMBER 31, 1965

Location No. and Name	Location	Gondola	Chair-lift	T-bar	J-bar	Rope Tow	Industrial Freight
1. Grouse Mountain	North Vancouver		2	1	—	1	—
2. Grouse Mountain	North Vancouver	1	—	—	—	—	—
3. Mount Seymour	North Vancouver		1	1	—	1	—
4. Garibaldi	Garibaldi Park	1	1	2	—	—	—
5. Diamond Head	Garibaldi Park		—	—	—	1	—
6. Mount Becher	Near Courtenay		—	1	—	1	—
7. Green Mountain	Near Nanaimo		—	1	—	1	—
8. Kemano (Alcan)	Kemano		—	—	—	—	1
9. Bear Mountain	Dawson Creek		—	1	—	—	—
10. Tabor Mountain (Hickory Wings)	Prince George		—	1	—	1	—
11. Wells	Wells		—	1	—	—	—
12. Dog Mountain (B.C. Telephone)	South-west of Hope		—	—	—	—	1
13. Mount Jarvis (C.N.)	East of Hope		—	—	—	—	1
14. Tod Mountain	North of Kamloops		1	1	—	—	—
15. Lac le Jeune	North of Kamloops		—	1	—	—	—
16. Revelstoke Park	Revelstoke		—	—	1	—	—
17. Mount McKenzie	Revelstoke		—	1	—	—	—
18. Silver Star	Vernon		—	1	1	—	—
19. Big White	East of Kelowna		—	2	—	—	—
20. Invermere	Invermere		—	—	—	1	—
21. Pine Woods	Manning Park		—	—	1	1	—
22. Amber Ski Hill	Princeton		—	—	—	2	—
23. Apex Alpine	West of Penticton		—	1	1	1	—
24. Borderline	East of Osoyoos		—	1	—	1	—
25. Phoenix Alpine	West of Grand Forks		—	—	—	1	—
26. North Star	Kimberley		—	2	—	—	—
27. Fernie (Snow Valley)	Fernie		—	1	—	1	—
28. Silver King	Nelson		—	1	—	1	—
29. Salmo	Salmo		—	1	—	—	—
30. Red Mountain	Rossland		—	2	—	1	—
31. Lakelse	South of Terrace		—	—	1	—	—
Totals			2	7	23	5	16
							3





Westcoast processing plant at Fort Nelson.

PIPE-LINES

The trend to expand pipe-line facilities for the transport of oil and natural gas has continued through 1965 with bright prospects for 1966. In the Peace River and to the north of the Peace River Block, exploration has continued, so that new wells, both gas and oil, have continued to be brought into production, and consequently pipe-lines have been extended to transport the products to market.

In the Fort Nelson area, the Clarke Field and the Apache Field have become substantial producers. With the advent of the new 30-inch Westcoast Transmission line extension from Chetwynd to Fort Nelson, this northern area has become important to the economy of British Columbia. As this gas is sour, a scrubbing plant has been installed at Fort Nelson and is now operative.

The aforementioned 30-inch pipe-line was constructed to about half completion under the jurisdiction of the Department pursuant to the British Columbia *Pipe-lines Act*, and all the pipe and appurtenances were approved and ordered accordingly; however, due to financing arrangements, the Westcoast Transmission Company Limited applied to the National Energy Board for leave to complete and operate the line under Federal control and, after a public hearing, leave was granted, so that the main line now operates under Federal jurisdiction with the gathering system under Provincial jurisdiction.

The compressor-stations over the entire system of Westcoast Transmission are inspected by Department inspectors as most of the appurtenances, such as pressure vessels, engines, turbines, fire protection, including the safety of workmen, are strictly Provincial matters. The same applies to the pumping-stations of the Trans Mountain Oil Pipe Line, and the Department inspectors, likewise, inspect and certify these stations annually.

During 1965, pollution of streams and farm land was reported through the Fish and Game Branch and through the Department of Mines and Petroleum Resources. Engineers from the Department made investigations and reported that

the trouble had been corrected to the satisfaction of those authorities concerned. In all cases the causes were leaks in pipe-lines due to earth movement.

A survey was made of the Inland Natural Gas Company's facilities in the Penticton area with respect to the depth of cover. In all cases it was found the pipe was buried deeper than required by the regulations; however, where earth settlement or flooding occurs, there is no guarantee that a pipe-line might not be exposed, but if the exposure is in muskeg, no danger exists to the public, and one such small area was observed.

Problems have arisen with respect to subdivisions of land where a pipe-line exists. In all cases, Department engineers, in applying the A.S.A. B31.8 Code, found the pressure could be adjusted and the subdivision approved commensurate with the population index as provided in the code.

In the Boundary Lake, Wildmint, and Milligan Fields it was necessary for Department engineers to check on the scrubbers and other pressure vessels used at the production batteries. It was found that over 400 unregistered pressure vessels were in these fields, and the engineers registered the vessels and stamped British Columbia numbers where such vessels met the requirements of the code.

In some of the older gasfields it is now necessary to install compressor-stations so that the lower-pressure gas can be fed into high-pressure pipe-lines. In some cases secondary recovery has progressed to the point where water-injection stations are combined with compressor-stations. Our engineers test and certify all such installations, and in many cases approve high-pressure water-injection lines as sometimes such lines are ultimately used for the transmission of high-pressure gas.

As these fields grow older, an increase in secondary recovery can be expected, and recent developments indicate that unmarketable liquefied petroleum gas may become an important factor in deep-well secondary recovery.

During the year, schemes to pipe natural gas to Vancouver Island have been proposed. In addition, some study has been directed to liquefied methane gas to serve Vancouver Island and for transpacific export. Department engineers study all such proposals. It is expected that one day a break-through will occur so that what seems unrealistic today will certainly be the realities of tomorrow.

There has been an increase in the handling of liquefied petroleum gas by railway tank cars and jumbo cars. This has been brought about due to trial shipments of this product to Japan. The shipping-docks and rail unloading being under the jurisdiction of the *Railway Act* has brought the Department engineers and inspectors into this phase of work as public safety is involved. In one case it was necessary to attend a Town Council meeting to assure the Reeve and Councillors that the movement and storage in and adjacent to the town was quite safe. In all cases the piping involved is tested in accordance with the pipe-line regulations, and the handling and unloading of liquefied petroleum gas are in accordance with the Department's regulations in that respect.

An application was made to the National Energy Board by Canadian Hydrocarbons Limited to construct a pipe-line from north-west of Calgary, through the proximity of the Crowsnest Pass, and continue westward parallel to the Canada-United States Border, and to terminate in Port Moody, B.C. Propane and other liquefied petroleum gases were to be the principal products of the line. Officials of the Department attended the hearings held in Calgary, Alta. The National Energy Board had not, at the end of 1965, handed down its decision.

The Canadian Standards Association Committee on Gas and Oil Pipe-lines has continued to be quite active during 1965. The Department's Chief Engineer has continued to serve as Vice-Chairman of the Gas Pipe-line Committee, and reports

progress in that the Oil Pipe-line Code has been voted upon with a majority vote, as has the Gas Pipe-line Code; however, he points out there are a few areas where it would be advantageous for the industry and the jurisdictional bodies to agree on matters respecting the safety of pipe-lining being commensurate with the economics of the industry as a whole.

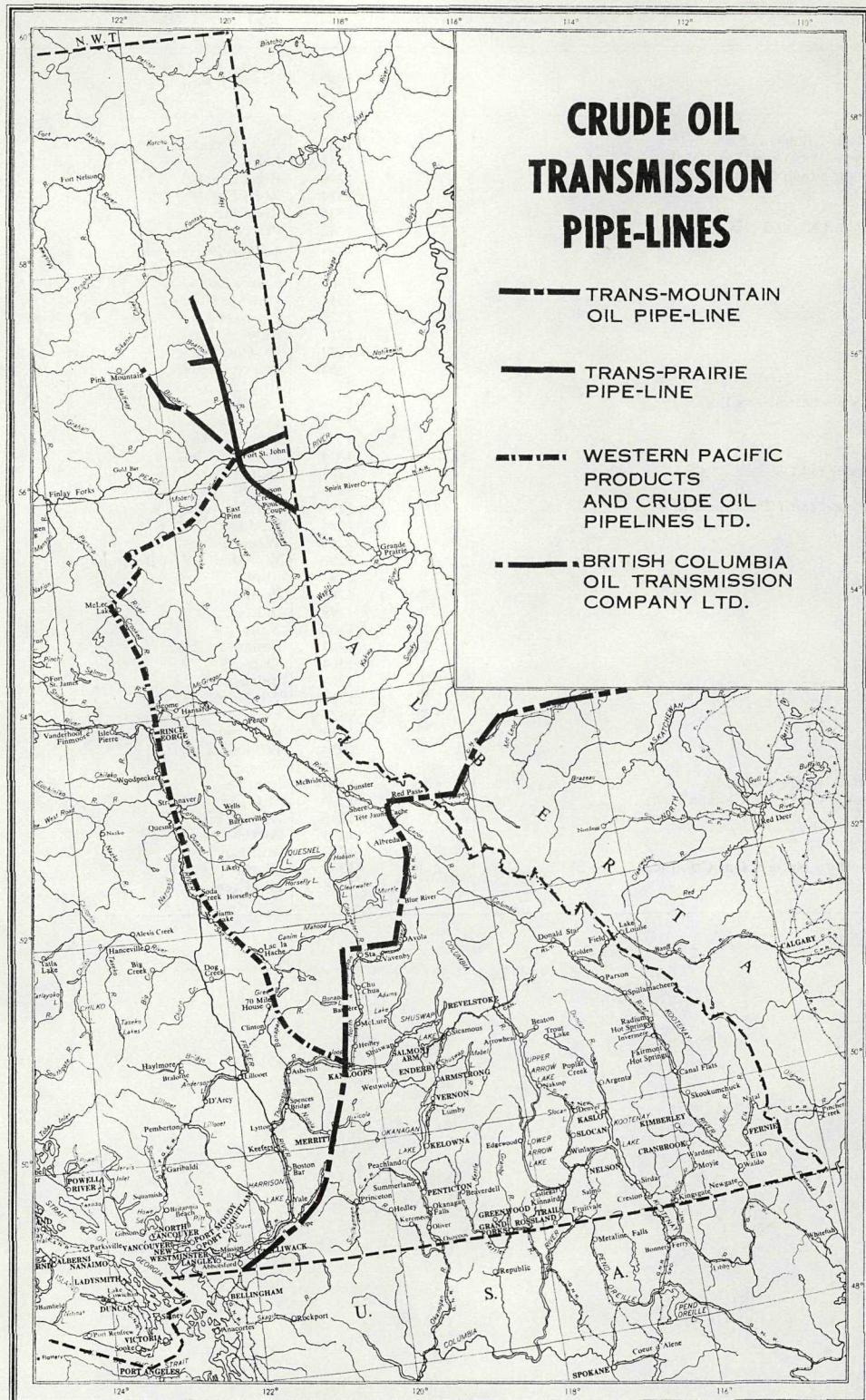
Broadly speaking, therefore, it can be predicted British Columbia will see an increase in the use of pipe-lines in 1966.

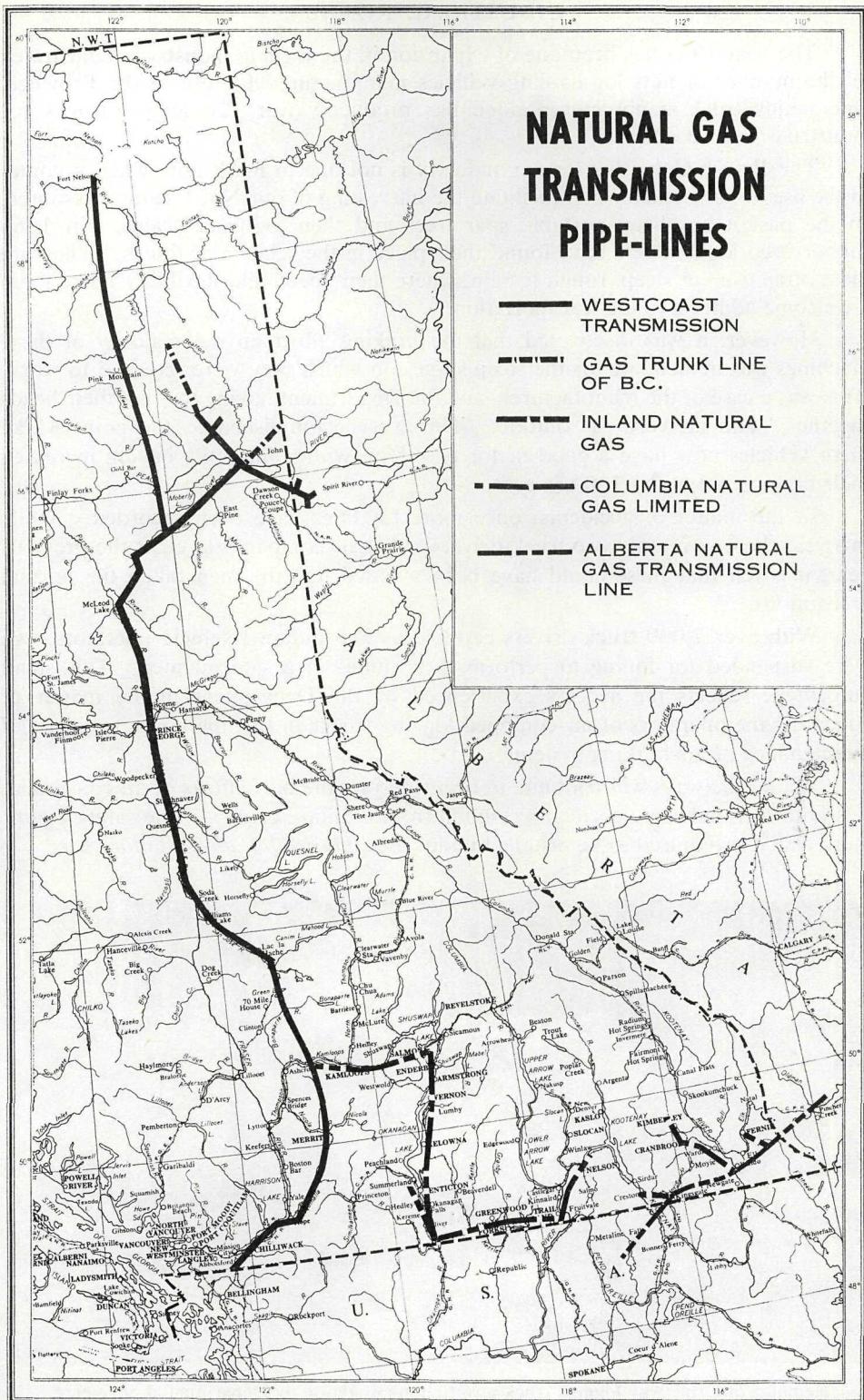
ANNUAL INSPECTIONS UNDER THE PIPE-LINES ACT, 1965

Miles of new pipe-line inspected and tested	131
Compressor-stations inspected	27
Pumping-stations inspected	16
Accidents investigated on pipe-lines	—
Gas distribution and metering stations inspected	13
Number of tank-farms inspected	5
Number of new extensions to pipe-line projects approved	65
Number of pipe-line crossings of railways inspected	2
Number of pipe-line crossings of highways inspected	3
Number of pipe-line crossings of other pipe-lines approved	23
Power-line crossings over pipe-line right-of-way approved	14
Approval of plans and specifications for pipe-line projects	65
Investigation of pipe-line problems involving subdivisions	4
Certificates of inspection issued under the <i>Pipe-lines Act</i> authorizing the operation of new extensions to pipe-line projects	65

PIPE-LINES APPROVED, INSPECTED, AND TESTED, 1965

Name of Company	Oil or Gas	Project No.	Pipe-line Location
Altair Oil & Gas Co.	Gas	1283	Buick Creek.
Dome Petroleum Ltd.	"	1284	Laprise.
Imperial Oil Ltd.	"	1280	Rigel Creek.
	"	1314	Rigel Creek.
	"	1335	Boundary Lake.
Inland Natural Gas Co. Ltd.	"	1282	Prince George.
	"	1294	Kamloops.
	"	1301	Canoe.
	"	1305	Canim Lake.
	"	1316	Hudson Hope.
	"	1321	Chetwynd
	"	1322	Robson.
	"	1323	Hudson Hope.
	"	1324	Prince George.
	"	1328	Brilliant.
Pacific Petroleum Ltd.	"	1288	Laprise.
	"	1339	Fort Nelson.
	"	1343	Buick Creek.
	"	1344	Fort St. John.
Skelly Oil Co.	"	1287	Jedney.
Trans-Prairie Pipelines Ltd.	"	1341	Jedney.
	Oil	1281	Fort St. John.
	"	1285	Stoddart.
	"	1295	Weasel.
	"	1296	Whitehall, West Beatton.
	"	1297	Mink.
	"	1298	Peejay.
	"	1299	Bulrush.
	"	1302	Nancy.
	"	1303	Boundary Lake.
	"	1304	Osprey.
	"	1325	Bulrush.
	"	1326	Wildmint.
	"	1327	Peejay.
	"	1333	Wildmint.
	"	1334	Wildmint.
	"	1342	Weasel.
Triad Oil Co. Ltd.	Gas	1286	Laprise.
Union Oil Co. of Canada Ltd.	"	1289	Milligan.
Western Natural Gas Co., Inc.	Oil	1290	Aitken.
	"	1291	Aitken.
	"	1293	Milligan.
	Gas	1300	Clarke Lake.
	"	1338	Nig Creek.





INDUSTRIAL ROADS

The year 1965 has been one of expansion in the logging industry, as illustrated by the number of new log-hauling vehicles manufactured for use in the Province. One major truck-manufacturer alone has produced over 120 logging-trucks for industrial-road service.

The British Columbia logging industry is not one to mark time when it comes to the use of new machines to facilitate the harvesting of our No. 1 natural resource. In the past it has been portable spar trees and then log-truck trains. In 1965 rubber-tired log-skidders have found their place in the scheme of things. They are most often used in steep, rough terrain, where their speed and flexibility make them a welcome addition to log transportation.

However, it was discovered that the braking effort on the majority of these machines was inadequate for the steep slopes on which they were required to work. This was a case of the manufacturers and the Department having to "get their heads together" and arrive at a solution. This was accomplished to the point where these vehicles now have a good factor of safety, with some units having increased their braking output by 100 per cent.

In the matter of accidents, once more fatalities have been recorded. While this year there were only two truck-drivers killed, as compared to eight the previous year, it is felt that these could have been avoided had the men taken the normal precautions.

With over 7,000 truck-drivers certified as air-equipped vehicle operators, two were suspended for failing to perform their duties in a safe manner. This small percentage reflects the success experienced by the Department in the matter of educating the operators of air-equipped logging-trucks in the operation, testing, and maintenance of air-braking systems.

While runaways will continue to occur despite the best efforts of all concerned, it is noteworthy that no accidents resulted from a failure of any of the safety equipment which is required to be installed under the *Industrial Transportation Act*.



Remains of a runaway logging-truck awaiting investigation by Departmental engineers.

New air-brake equipment is constantly being produced by various manufacturers and is subject to testing and approval by the Department before being put to use in the logging industry. It is felt in some quarters that the demands of the Department are too rigid, but it is a matter of record that the State of California, which most nearly approaches our standards, has in the past approved devices that have been rejected in British Columbia. These devices subsequently proved to be dangerous under certain conditions and had to be removed from use. Therefore, while the standard of equipment required on logging-trucks operating on industrial roads in British Columbia may seem unduly high, the results obtained justify this more rigid requirement.

On the subject of accidents, seven investigations were conducted for the R.C.M.P. highway patrol into truck-transport accidents where inspectors of the Department were successful in determining the causes of the accidents. Again, as in previous years, members of the Royal Canadian Mounted Police were trained in the inspection of air-equipped transport vehicles. The result of this is that a greater number of transport units are inspected properly, which is a benefit to the truckers as well as to the travelling public.

An increasing number of British Columbia vocational-school students received instruction in the operation and maintenance of air brakes, and the Department has been instrumental in the various schools obtaining air-brake equipment for training purposes.

Mechanics in industry have again availed themselves of the night-school courses on air brakes offered by the Department, and, as has been the case in the past years, the classes were oversubscribed.

The public has begun to realize that industrial roads in the Province can open up new summer and winter areas for sightseeing, camping, fishing, and hunting. Access to these roads has been made available in many areas by logging companies, and with continued co-operation by visitors regarding rules of the road and restricted areas, there is reason to believe that in time many more people will be able to enjoy these facilities.

ANNUAL INSPECTIONS UNDER THE INDUSTRIAL TRANSPORTATION ACT

	1963	1964	1965
Logging-trucks inspected.....	388	573	295
Gravel-trucks inspected.....	34	44	68
Crummies (workmen's buses).....	277	244	158
Miscellaneous vehicles (including highway vehicles).....	412	303	110
Air-brake lectures.....	33	23	21
Lecture attendance.....	373	534	450
Logging-truck operators certified.....	361	528	350
British Columbia vocational schools and other institutes (air-brake examinations).....	122	108	158
Royal Canadian Mounted Police (air-brake examinations).....	5	20	28

AIR-BRAKE LECTURES CONDUCTED DURING 1965

Date and Place	Attendance at Lectures
January 27—Haney Correctional School	38
October 26—Haney Correctional School	34
February 2—Burnaby Vocational School	16
September 18—Burnaby Vocational School	15
March 22—Royal Canadian Mounted Police, Cloverdale	25
July 15—Royal Canadian Mounted Police, Princeton	4
June 9—Royal Canadian Mounted Police, Terrace	4
April 15—P.G.E. truck-drivers, Vancouver	5
July 30—P.G.E. truck-drivers, Vancouver	4
April 1—Colwood logging-truck drivers	13
June 4—Nakusp logging-truck drivers	33
June 8—Kitimat logging-truck drivers	34
June 15—Port McNeil logging-truck drivers	10
June 17—Holberg logging-truck drivers	18
July 5—Hope logging-truck drivers	32
July 14—Princeton logging-truck drivers	30
July 27—Highways Department drivers, Cloverdale	27
July 28—Squamish logging-truck drivers	44
August 24—Powell River logging-truck drivers	26
November 25—Northwest Bay logging-truck drivers	24
December 2—Sooke logging-truck drivers	14
Total	450

ACCIDENT PREVENTION PROGRAMME

In all branches of the Department, the importance of safety has been the consistent policy throughout the year. The importance of safety has been emphasized at all levels, and supervisors have been constantly on the alert to improve the working habits of not only the staff, but also those members of the public with whom our men in the field are brought into daily contact.

Our safety supervisor reports that at the weigh-stations the results of our safety drives have been most rewarding, and weighmasters constantly endeavour to impress the drivers of heavy vehicles that a properly loaded and well-maintained vehicle in the hands of a competent driver is the best safety device on any highway.

In our Engineering Branch, safety to workmen and safety to the public has been the theme over many years. The engineers report that truck-drivers, locomotive engineers, brakemen, ski-lift operators, and pipe-line constructors must be properly trained in the use of equipment, otherwise accidents will occur. The engineers point out that a safe workman is an asset to the industry which employs him, but that in many phases of industry, such as transport, the industry does not have the specialized technical personnel to train its employees in the use of air brakes and in the maintenance of special braking equipment used on heavy grades.

Over the years our engineers have become not only experts in the intricacies of air brakes, but they understand first hand the conditions under which the equipment is expected to perform. Consequently they put on lecture courses for heavy-duty mechanics and conduct air-brake and driver courses for logging- and transport-truck drivers. They go further by conducting special courses to train the Royal Canadian Mounted Police, the city police forces, and the drivers of heavy equipment employed by the Department of Highways. Most truck transport companies insist that an "air ticket" is a requisite to hold a job driving on the highways.

The Engineering Branch maintains a school or lecture-room in its Vancouver office, complete with air-brake systems laid out on boards so the working of the brakes can be seen and understood. Compressed air at 110 p.s.i. is available to operate every phase of the various braking systems on display. Movie projectors and still projectors, as well as blackboards and cut-aways of the various components, are used to display for the edification of the more serious students. A similar lecture-room has been set up at the Nanaimo Vocational School by our engineers, where they lecture to all graduating classes of mechanic apprentices. Similar lecture-rooms are planned for Prince George and Nelson.

As the work of driver education must go on in the remote areas of the Province, in logging and mining camps, as well as in Interior centres such as Kelowna and Cranbrook, the engineers have rigged up two half-ton panel trucks with completely portable air-brake demonstration boards so that the boards may be demonstrated in a garage or in a convention hall. Air is supplied from the vehicles by the use of 100-foot lengths of air hose. The two air-brake units are actually travelling schools, and each unit is equipped with both slide and movie projectors, as well as with books or pamphlets, to prepare the applicants for examination. The units have been taken to remote points such as the Queen Charlotte Islands to train drivers of heavy equipment, and the industry gladly provides the transportation of the unit to such remote areas.

The engineers hope to install a lecture-room for railway air brakes, as they are required to train engineers and brakemen for the expanding rail facilities serving the wharves and terminals in the Lower Mainland area.

Traffic on all logging and industrial roads which are not public highways comes under the jurisdiction of the Department. Engineers advise the companies as to safe traffic procedures and assist them in formulating special rules to accommodate the public on company roads or to assure safety where traffic flows through company towns such as Kitimat, Kemano, Cassiar, Ocean Falls, Beaver Cove, and many other such areas not served by public roads. Public protection and safety is therefore of prime importance in this phase of our work.

In ski areas of British Columbia our engineers have approved over 50 lifts, or ropeways, serving the public. In a number of cases, passengers are carried through the air by ropeways, and it is conceivable under these conditions that accidents could happen. However, the safety record is good, since a very strict code of regulations is enforced and engineers make periodical safety inspections in all areas each year with respect to all matters which might lead to accidents.

Safety programmes on railways under the Department's jurisdiction have been intensified under the direction of the Chief Engineer. Specific reports respecting railways are set forth in the railway section. In addition, special committees have been set up to advise on the handling of compressed gases such as chlorine and liquefied petroleum. This has been done in the interests of public safety, with the activities of these committees extending to transport on highways.

The Department is represented on the Safety Council, and all meetings are attended in an effort to lend support and to keep abreast with every phase of accident prevention.



Safety awards presented to nine Provincial departments, including a Bronze Award of Merit to the Department of Commercial Transport, November, 1965.

ACCOUNTS BRANCH

D. I. EWAN, C.O.A., SENIOR CLERK

A revenue increase of 9 per cent for commercial vehicles this year again indicates a steady increase of commercial-vehicle traffic throughout the Province. An increase of 19 per cent in oversize and overweight permit revenue is indicative of the trend toward the greater use of restricted-route permits, oversize and overweight permits. There was a 12-per-cent increase in restricted-route permits issued over last year.

A further indication of the growth of the commercial trucking industry within the Province is shown by the number of temporary motive-fuel emblems issued by this Department in the field. In assisting the Motive Fuel Branch of the Department of Finance, weighmasters have issued 4,626 of these emblems during 1965, compared to 3,325 in the preceding year.

During February, 1965, the invoicing of charge account permits was switched from manual ledgers to data-processing equipment. The amount of time saved in preparing invoices themselves (12 minutes as against 24 man-hours) has enabled us to keep up with the steadily increasing volume of permits issued in the field and to increase the level of auditing. During the year 48 new accounts have been opened, while only 11 have been cancelled. At December 31, 1965, there were 434 active accounts.

The system of auditing company reports of overweight vehicles operating under the authority of a term permit is proving quite effective. Reports are received from all weigh-scales within the Province of the movement of such vehicles. These are compared with the returns from the company, and any discrepancy is brought to the attention of the company for correction. During the year there were only 39 cases where changes were required.

As indicated in the last Annual Report, new mileage charts were prepared and circulated to all issuing offices during the year. These were also provided to industry through various organizations.

Statistics are now being kept of the number of vehicles hauling used household goods from Provinces which have entered into reciprocal agreements with British Columbia. As these agreements were completed earlier in the year, complete figures for a 12-month period are not available. The trend, however, indicates a freer movement of these vehicles, and it is anticipated that in future years these agreements will be of great value to the industry.

The continued acceptance of the prorate agreement with 16 American States is indicated by statistics kept in the Department and shows an increase of revenue from the companies prorating vehicles. These statistics include, other than licence and decal fees, such allied operating assessments as motor-carrier fees, motor-fuel taxes, non-resident permit fees, and social service taxes. In order to assess the scope of prorate operations and to audit returns from the companies, this office maintains a record of mileages operated by prorated vehicles within the Province. This information is gathered from all border-crossing weigh-scales, which report monthly all vehicles entering the Province under prorate licences together with the mileage of each trip. This mileage is summarized and made available to any Government department requiring this type of information, and in particular is used to check applications from companies for licences in the following year.

Other statistics have been kept, and surveys have been made relating to the class, number, type, and weight of vehicles operating within the Province and across

Provincial boundaries. The approximate mileage operated by commercial vehicles in British Columbia is recorded, and various factors concerning the use of non-resident commercial-vehicle permits are tabulated. These facts are used to audit returns from companies and to check applications for new licences.

The following tables show results of the activities of the Weigh Scale Branch during the past year. Other tables relating to the Engineering Branch are included elsewhere in this Report.

TABLE 1.—REVENUE FROM GASOLINE AND MOTIVE-FUEL USE TAXES FOR PASSENGER AND COMMERCIAL VEHICLES

Fiscal Year	Amount	Fiscal Year	Amount
1953/54	\$15,963,000	1959/60	\$28,582,000
1954/55	17,455,000	1960/61	30,093,000
1955/56	19,820,000	1961/62	39,262,000
1956/57	22,593,000	1962/63	43,129,000
1957/58	24,500,000	1963/64	46,420,000
1958/59	26,100,000	1964/65	50,865,000

¹ Includes vehicles licensed under prorate agreement with American States.

TABLE 2.—SUMMARY OF COMMERCIAL-VEHICLE LICENCES AND PERMITS ISSUED, JANUARY 1, 1965, TO DECEMBER 31, 1965

Month	Number of Commercial Vehicles Registered and Licensed ¹	Number of Commercial Trailers Registered and Licensed ¹	Number of Non-resident Permits Issued	Number of Temporary Operation Permits Issued	Number of Oversize and Overweight Permits Issued	Number of Vehicles Checked at Weigh-stations
January	20,588	5,287	826	1,827	2,061	87,020
February	71,194	5,450	865	1,870	2,899	96,295
March	19,607	1,280	1,463	3,943	2,803	96,900
April	6,976	419	1,355	3,330	1,761	99,912
May	5,741	575	1,049	3,623	1,971	79,950
June	5,094	489	1,688	3,616	3,605	88,090
July	3,698	302	1,496	3,478	2,775	109,753
August	2,994	316	1,672	3,263	3,384	93,552
September	2,977	432	1,748	2,980	2,342	97,371
October	2,622	186	1,257	2,855	3,603	123,253
November	2,458	157	1,213	2,799	2,861	100,006
December	2,200	125	1,150	2,500	2,600	109,228
Totals	146,149	15,018	15,782	36,084	32,665	1,181,330

¹ Includes vehicles licensed under prorate agreement with American States.

TABLE 3.—SUMMARY OF PRORATE OPERATION, 1965

	Companies Prorated	Tractor Units	Trailer Units
British Columbia	59	238	181
United States	202	2,076	4,286
Totals	261	2,314	4,467

TABLE 4.—COMPARISON OF GROSS REVENUE COLLECTIONS FROM COMMERCIAL LICENCE AND PERMIT FEES FOR FIVE-YEAR PERIOD 1960/61 TO 1964/65, INCLUSIVE.

Source	1960/61	1961/62	1962/63	1963/64	1964/65
Commercial motor-vehicle licences	\$7,541,536.02	\$7,938,605.82	\$8,253,251.46	\$8,910,152.29	\$9,706,485.52
Non-resident commercial permits	401,976.11	478,156.17	381,673.01	404,410.49	410,645.40
Trailer fees	60,325.00	57,452.34	61,408.52	74,298.71	81,223.22
Temporary operation permits	45,765.00	58,442.51	62,909.21	66,001.38	80,692.20
Oversize and overweight permits	317,568.53	321,730.55	368,715.57	447,680.61	530,171.28
Totals	\$8,367,170.66	\$8,854,387.39	\$9,127,957.77	\$9,902,543.48	\$10,809,217.62

TABLE 5.—SUMMARY OF VIOLATION NOTICES ISSUED, JANUARY 1, 1965, TO DECEMBER 31, 1965

Licence and Permit Violations

Gross vehicle weight	1,782
Motor-vehicle registration	775
Licence-plates	770
Trailer plates	168
Quarterly licence	26
Non-resident permit	50
Temporary operation permit	10
Motive-fuel emblem	76
Overweight permit required	31
Oversize permit required	44
Restricted-route permit	368
Highway-crossing permit	26
Proration	3
Other	15
Total violations	4,144
Total number of vehicles checked	1,181,330

Motor-carrier Violations

Motor-carrier plates not displayed	549
Motor-carrier licence not carried	494
Conditions of licence not carried	382
Operating otherwise than permitted by licence	430
Total violations	1,855
Total number of vehicles checked	15,864

Oversize and Overweight Violations

Oversize and overweight violations issued	783
Oversize and overweight prosecutions, including those through Royal Canadian Mounted Police	947

PERSONNEL

A. SHAW, C.O.A., ADMINISTRATIVE OFFICER

Activity in the field of personnel management was quite intensive during 1965 and resulted in the following staff changes being made:—

Retirement of field personnel	1
Resignations of field personnel	7
New appointments, casual employees	11
New appointments, permanent employees	1
Transfers within the Department	10

There were seven resignations from the field staff of the Weigh Scale Branch, all of which were in the interest of personal advancement of the individuals concerned.

Mr. Elden F. McKay retired from service on the 10th of August, 1965, after 3½ years as a weighmaster with this Department. Mr. McKay served at the Parksville weigh-scale station on Vancouver Island.

To fill the vacancies occasioned by the aforementioned resignations and retirement, competitions were held in Dawson Creek, Chetwynd, Prince George, Golden, Hunter Creek, Cranbrook, Creston, and Vancouver during the year.

It is of interest to note that the high degree of interest shown in the competitions for positions with this Department is being maintained, as is indicated by the number of applications received in the various centres of the Province.

As the degree of industrial activity increases in a particular area of the Province, it often becomes necessary that increased service must be rendered by the Weigh Scale Branch staff in that particular area. This situation requires that staff be transferred from other areas of the Province to take care of the additional work load incurred through the increased industrial activity.

In the economic interests of the Department generally, and in some instances as a result of personal requests, several transfers of weighmasters to other locations within the scope of Departmental operations were made during the year.

The staff at the end of the year comprised the following: Civil Servants, 19; casual employees (weighmasters), 78; temporary employees, 2.

In accordance with policies established, the status of weighmasters has been changed from a "casual" classification to that of "permanent." The necessary administrative changes in this regard are currently being undertaken, and it is anticipated that change-over will be complete at an early date in 1966.

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