Section Two

PILOTAGE DISTRICT OF NEW WESTMINSTER

Chapter A

LEGISLATION

1. LAW AND REGULATIONS

PREAMBLE

The Pilotage District of New Westminster is wholly governed by the provisions of the Canada Shipping Act which are generally applicable to the pilotage service and its organization; there are no statutory provisions of exception applicable to this District. There are, however, a number of Orders in Council, by-laws and regulations that specifically concern the New Westminster District.

(1) CREATION OF THE DISTRICT

The New Westminster District, as such, was created in 1904 (P.C. 236, dated February 6, 1904, Ex. 1427 (a)) by the division of the then "Pilotage District of Yale and New Westminster" into the "New Westminster Pilotage District" and the "Vancouver District".

The New Westminster Pilotage District limits are described therein as follows:

> "... to embrace all the waters north of the International boundary line, east of mid-channel of the Gulf of Georgia and south of the north boundary of the Electoral District of New Westminster prolonged westwardly into the Gulf of Georgia."

This description first raises two questions of interpretation:

(a) Which Electoral District is intended: Federal or Provincial?

(b) Is the reference to "the north boundary of the Electoral District of New Westminster" a way of describing a geographical line by reference to the then north boundary of the Electoral District, or does the actual north boundary of the Electoral District, as such, have any bearing upon the delineation of the territory of the Pilotage District?

As for the first question, it is normal and logical to expect that, unless otherwise indicated, the expression "Electoral District" refers to the Federal Electoral District. This was confirmed by a study of the Electoral Districts

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as they existed in 1904 which shows that the only Electoral District by the name of New Westminster was a Federal District. A New Westminster Provincial Electoral District had existed in 1871, as created by the Constitution Act 1871 of British Columbia; it had been reduced considerably in 1878 by the creation of the new coastal Electoral District of Cassiar (B.C.S. 42 Vic., 19). In 1890, by an amendment to the British Columbia Constitution Act (53 Vic., 7) its name was changed to "Westminster Electoral District", and it was further reduced by the creation of another District: the "New Westminster City Electoral District" (Ex. 1427(b)).

Such was the situation when Order in Council P.C. 236 of 1904 was passed. There was no longer any Provincial Electoral District of that name and the Governor in Council must, therefore, have referred to the only one that existed, i.e., the Federal one which is described in the 1903 amendment to the Federal Representation Act (3 Ed. VII, 60) as follows:

> "The electoral district of New Westminster, comprising the provincial electoral districts of Chilliwack, Delta, Dewdney and New Westminster City, all that portion of the provincial electoral district of Richmond lying south of Burrard Inlet excepting the municipality of South Vancouver, and all that portion of the provincial electoral district of Yale adjoining the provincial electoral district of Dewdney, and lying west of a line commencing at the north-east corner of the provincial electoral district of Chilliwack, thence following the Fraser River to a point one mile beyond the village of Yale, and thence following a straight line to the northeast corner of the provincial electoral district of Dewdney" (See maps, Exs. 1427(c) and (d)).

With regard to question (b), it is obvious that the description in the Order in Council is merely a geographical reference, a way of describing a line and not a reference to the Electoral District as such. Otherwise, any modification to the north boundary of the Electoral District would automatically modify the north boundary of the Pilotage District.

Since 1903, the Federal Electoral District of New Westminster has seen its limits changed four times, the last alteration having taken place in 1947 (amendment to the Representation Act 1947, II Geo. VI, 71, and 1952 R.S.C. 238, Ex., 1427(c)). The former territory of the Electoral District has been considerably reduced; most of the navigable part of the delta of the Fraser River, the northern part of the channel and even Pitt River are no longer in the Electoral District (see map, Ex. 1427(e)). If the line which is the actual north boundary of the Electoral District is considered the northern limit of the Pilotage District, a preposterous situation would arise in that the whole of the navigable channel would no longer be within the limits of the Pilotage District.

It would have been illegal to give the Pilotage District a limit that could be altered without passing an additional, specific Order in Council pursuant to sec. 324, C.S.A. The limits of a Pilotage District must be fixed or altered by the Governor in Council acting under this section of the Canada Shipping Act. To do otherwise would amount to a delegation of power which is not

authorized in the Act and, therefore, is illegal. The territorial jurisdiction of the Pilotage Authority of the District, as it was created in 1904, can not be modified except by a further Order in Council passed pursuant to sec. 324 C.S.A. and can not be affected by external events such as the modification of the limits of the Electoral District. Therefore, the reference to the northern limit of the Electoral District in the Order in Council creating the District was made only as a means of describing the then existing line and was not intended to render the *situs* of the northern limit dependent upon the *situs* of the northern limit of the Electoral District in the future.

There now remains the very complex question of fixing the northern limit. There is no ambiguity about the south and west boundaries since the U.S.-Canada boundary and the mid-channel line of the Gulf of Georgia are lines that remain unchanged and are easily ascertainable. The eastern limit is not indicated and it is not necessary to do so since perforce it is the end of navigable water upstream from the mouth of the Fraser River.

The northern limit, however, presents difficulty. In order to find out the meaning of the reference "north boundary of the Electoral District of New Westminster" contained in the Order in Council, reference must be made to the description of the District contained in the governing federal statute applicable in 1904 where again reference is made, this time to the limits of a provincial district whose description has to be found in the applicable provincial statute. For the purpose of ascertaining the northern limit of the Pilotage District, the relevant part of the description of the federal district is where the north boundary line of the federal district touches the waters of the Gulf of Georgia so that the line could be "prolonged westwardly in the Gulf of Georgia". This part of the description of the 1904 New Westminster Federal Electoral District reads as follows (Representation Act as amended in 1903, 3 Ed. VII, c. 60, Ex. 1427(c)):

> "The electoral district of New Westminster comprising . . . all that portion of the provincial electoral district of Richmond lying south of Burrard Inlet excepting the municipality of South Vancouver . . ."

The description of the provincial electoral district of Richmond as it existed in 1904 is to be found in the Redistribution Act 1902 of the Province of British Columbia (1902 B.C.S., c. 58, Ex. 1427(b)).

> ". . . ; thence southerly, following Jervis Inlet to a point south of Scotch Fir Point; thence southeasterly, through the centre of Malaspina Strait and the Straits of Georgia, to a point opposite the main channel of the Fraser River; thence following the main channel of the Fraser River . . . except . . . "Vancouver City Electoral District" . . .".

Therefore, the provincial electoral district of Richmond comprised the whole of the west coast of the mainland from Jervis Inlet to the Fraser River except for Vancouver City electoral district.

Of that huge provincial electoral district of Richmond, the north boundary of the Federal Electoral District of New Westminster, i.e., where it

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touches the waters of the Gulf of Georgia, is described as "the portion . . . lying south of Burrard Inlet excepting the municipality of South Vancouver". Since the tip of the south shore of Burrard Inlet is not within the limits of either the City of Vancouver or the municipality of South Vancouver, this point of land is, therefore, the northern limit of the Federal Electoral District of New Westminster where it meets the waters of the Gulf of Georgia and, therefore, the northern limit of the Pilotage District of New Westminster which extends from there into the Gulf of Georgia to mid-channel. (Vide Electoral Atlas of the Dominion of Canada as divided for the tenth general election held in the year 1904, map No. 187 (Ex. 1427(d)).) Hence it includes the North Arm of the Fraser River.

The location of the northern limit of the Pilotage District was no doubt quite obvious for those who were in charge of the District in 1904, but it became quite confused when, due to modifications in the various statutes that were made applicable by reference, it no longer corresponded to a concrete reality. It is normal that within a few years neither the Pilotage Authority nor the pilots any longer knew whether the North Arm of the District was or was not within the New Westminster Pilotage District. This question was raised at a meeting of the Pilotage Authority held on August 29, 1960 (Ex. 1427(s)) following which the Pilotage Authority wrote to the Department of Transport in order to obtain the required information.

COMMENTS

The foregoing is an example of the errors to avoid in the procedure adopted to describe district limits. The description of the limits of a Pilotage District should be clear, simple and easily understood by any interested party (vide Part I, p. 55). The following procedure is suggested:

(a) The limits should be described by simple geographical coordinate points that can easily be located both on maps and by ground references.

(b) The description should be complete in itself without reference to other documents or statutes.

(c) To avoid any possible conflict, the limits should be described on all sides. For instance, in this case the eastern limit should also be indicated either by saying that it comprises all the navigable waters of the Fraser River and other rivers flowing into it, or by a description of the limits beyond which the waters of the river, whether navigable or not, do not form part of the District (cf. the Saint John River in the Saint John, N.B., Pilotage District).

It is also pertinent to note that the New Westminster Pilotage District extends westward to the mid-channel line of the Gulf of Georgia from the tip of the south shore of Burrard Inlet on the north to the 49th parallel on the south. Therefore, vessels proceeding through Rosario Strait bound to or

from the Fraser River never enter the British Columbia Pilotage District. When the B.C. pilots navigate in that area of the Gulf of Georgia, they are outside their District and, therefore, without territorial competency. Furthermore, since this area of the Gulf of Georgia is outside the B.C. District, the B.C. District tariff does not apply, whether or not the B.C. pilots have rendered pilotage services there (vide B.C. Recommendation 3).

(2) Pilotage Authority
(Secs. 325 and 327 C.S.A.)

The District has been administered by a three-member local Board since its creation in 1904 (and also prior to that when it was part of the greater District of Yale and New Westminster). At no time was a federal Minister the Pilotage Authority of this District.

The members of the Pilotage Authority are appointed from time to time by the Governor in Council at his discretion. The present Pilotage Authority consists of:

Name	*Office*	*Appointed by*	*Date*
W. E. A. Mercer	Chairman	P.C. 1953-1056	July 2, 1953
K. K. Reid	Member	P.C. 1936-529	March 4, 1936
Harry M. Craig	Member	P.C. 1957-1702	Dec. 20, 1957

(3) Compulsory System

According to the governing legislation, pilotage is purported to be compulsory in the New Westminster District.

Prior to the division of the Yale and New Westminster District in 1904, the governing legislation was contained in the order in Council dated April 15, 1879 (Ex. 1427(f) which created that District. It imposed the compulsory payment of dues as follows:

> "... And His Excellency, under the authority aforesaid, has been further pleased to make the payment of Pilotage dues compulsory within the limits of the said District, the same to extend as well to vessels coming to any of the said Ports from the Pacific Ocean as to vessels leaving any such Ports for the Ocean".

In 1904, when the Pilotage District of Yale and New Westminster was divided into the separate New Westminster District and Vancouver District (P.C. 236, dated Feb. 6, 1904, Ex. 1427(a)) the governing provision regarding the compulsory system is succinct: "*Pilotage to be compulsory.*"

This provision in the Order in Council has not been replaced or amended as far as the District of New Westminster is concerned and, therefore, is still the only governing provision.

Sec. 6 of the New Westminster Pilotage District General By-law entitled "Compulsory Payment of Pilotage Dues" can not have any bearing

on the matter (vide remarks on the subject p. 6). A provision of this nature appeared in the District By-law for the first time in 1930 and has been retained in subsequent By-laws (Ex. 1427(g)).

The consequence of the foregoing is that neither compulsory pilotage nor compulsory payment of the dues is legal in the New Westminster District. The compulsory payment system that existed prior to 1904 was deliberately abrogated by the 1904 provision which purported to substitute compulsory pilotage instead. When different language is used in legislation, a different reference is intended. Pilotage statutory legislation since Confederation has always stressed the difference between the compulsory payment of dues and compulsory pilotage (vide Part I, p. 207).

Whether or not the use of "compulsory pilotage" in the 1904 Order in Council was an error has no bearing. The language is clear and can not be construed to mean anything else. The 1904 provision abrogated the 1879 provision and, therefore, from that moment the compulsory payment system ceased to apply in the New Westminster Pilotage District. On the other hand, the 1904 provision was otherwise ineffective, because this was beyond the limit of the Governor in Council's powers. The 1904 provision did not make pilotage compulsory, because under the governing statute only Parliament could do so (as was done later for the Great Lakes).

(4) Orders in Council not Passed under Canada Shipping Act and Affecting the Organization of the Pilotage District

By P.C. 1959-19/1093 of August 27, 1959 (Ex. 52) the Department of Transport was authorized, effective April 1, 1959, *inter alia,* to assume for the New Westminster District:

(a) "The cost of establishment, operation, maintenance, and replacement of pilot stations";

(b) "The cost of purchase, or charter or hire, and replacement of, and the cost of maintenance, operation and repair of, pilot vessels".

(5) Pilotage Authority's Enactments Confirmed by Governor in Council

(a) *Appointment of a Secretary Treasurer (Sec. 328 C.S.A.)*

By P.C. 1962-899 of June 28, 1962 (Ex. 1427(i)), the Governor General in Council appointed Mr. Jack M. Warren as Secretary and Treasurer of the Pilotage District at a salary of $550 per month payable out of pilotage dues received by the District.

It appears from the evidence that he has held this office since February 1, 1952, and from the financial reports filed (Ex. 149) that his salary was raised from $500 to $550 per month in 1961. Prior to the passage of the above-mentioned Order in Council in 1962, the Governor

General in Council's approval had never been sought either for his appointment or for the payment of his remuneration out of District revenues.

Sec. 3.3 of the District By-law (Ex. 146) leaves the remuneration of the Secretary to the Authority's discretion:

> "(3) The Secretary shall receive a salary at a rate determined by the Authority".

The previous By-law passed in 1930 (Ex. 1427(g)) contained a similar section providing for the appointment of the Secretary and other officers and employees as well. Sec. 12 reads as follows:

> "The said Pilotage Authority shall have authority to appoint a Secretary and other employees and officers and to fix their remuneration and define their powers and duties. All persons appointed shall be subject at all times to be removed without notice at the pleasure of the Pilotage Authority."

These By-laws are ultra vires (vide Part I, C. 5, pp. 110 and ff.)

(b) *Authorization for Payment of District Expenses (Sec. 328 C.S.A.)*

No Orders in Council were ever passed for this District except P.C. 1962-899 of June 28, 1962, referred to above, regarding the appointment and payment of the Secretary.

The General By-law contains provisions which purport to extend such authorization. Subsec. 10(2)(a) states:

> "The Secretary shall pay out of the Pilotage Fund each month the following:
> (a) the salary of the Secretary and such other expenses incurred in conducting the business of the District as are approved by the Authority; . . ."

This By-law provision is ultra vires because the Pilotage Authority can not by its own regulations dispense with the necessity of following the statutory requirements enacted in sec. 328 C.S.A. (vide Part I, pp. 110 and ff.).

(c) *Exemption for Small Ships (Subsec. 346(c) C.S.A.) and Withdrawal of Exemptions (Sec. 347 C.S.A.)*

The Pilotage Authority, acting under the assumption that the payment of pilotage dues is compulsory, dealt in its By-law with the question of exemptions. There is no District regulation quoting subsec. 346(c) and sec. 347 as authority but the question is dealt with in the General By-law passed under sec. 329. (For effect on the By-law's legality, vide Part I, C. 8, p. 248.) No statutory relative exemption is withdrawn and all small ships not exceeding 250 net registered tons are exempted.

The By-law, however, provides an indirect exemption for scows by illegally making the compulsory payment system applicable to all vessels, whose regulation definition excludes the scow. In fact, this is not an exemption because Part VI of the C.S.A. does not apply to vessels that do not meet the definition of "ship", which excludes "scow". (Re the validity of the regulation definition of the term "vessel", vide Part I, pp. 218 to 220).

(6) District General By-law

The General By-law now in force dates from November 30, 1961 (P.C. 1961-1740) when it replaced the 1930 By-law (P.C. 957 of May 7, 1930 as amended). Up to 1968 it had been amended four times (P.C. 1964-1493 of Sept. 23, 1964, P.C. 1965-1738 of Sept. 22, 1965, P.C. 1966-626 of April 4, 1966 and P.C. 1966-2409 of December 22, 1966). The four amendments deal exclusively with tariff items.

The basic principles of organization provided in the 1961 General By-law are the following (the cross reference to Part I of the Report appearing at the end of a paragraph indicates where the subject-matter is dealt with in Part I of the Report):

(a) Full control of the organization of the pilotage services is exercised by the Authority, the actual management being by the Secretary (Part I, pp. 73 and ff.).

(b) Pilots are represented by a Pilots' Committee of three elected annually (Part I, pp. 82 to 84).

(c) Pilots are recruited from Canadian citizens with 2 years' residence, prior to licensing, in British Columbia from Masters who have been engaged for at least 3 years in the coasting trade in British Columbia waters, not necessarily on the Fraser River. There is no apprenticeship but the successful candidate first serves on probation for one year (re the validity of the discrimination based on citizenship and residence, vide Part I, p. 251; re the legality of probation, vide Part I, pp. 268 and 269).

(d) The number of pilots on strength is controlled administratively by the Pilotage Authority (Part I, pp. 255 and ff.).

(e) The District is, in principle, financially self-supporting since the operating expenses of both the District and the service are paid out of dues collected (Part I, C. 5).

(f) Pilotage assignments are made by the Secretary according to a roster system (Part I, C. 4).

(g) The earnings of the District are pooled (Part I, pp. 74 and ff.), and the pilots receive as remuneration an equal share of the net earnings of the pool, the share being based on the time available for duty (Part I, p. 249).

(h) The pilot's status is *de facto* employee, he is entitled to an annual 30-day vacation with pay, and sick leave with full pay, half pay and without pay depending on the circumstances and the length of the absence.

(i) Trip dues are based on draught and tonnage; since 1966, gross tonnage (P.C. 1966-2409); for services other than normal inward and outward pilotage, special fees are provided, e.g., passages

through the Westminster Bridge or a trip east of the mouth of the Pitt River call for an extra charge.

(j) For pension purposes, contributions are deducted compulsorily. The amount of the contribution is determined annually by the Authority after consultation with the Pilots' Committee and shall not be less than 7% nor more than 10% of the gross revenue of the District. According to the By-law provision, the ensuing fund is to be administered by the Authority. However, the By-law is silent as to the nature of the pension scheme, its beneficiaries and its benefits.

(k) The seaward boarding station of the District is located "one mile seaward of the Sandheads Light Station entrance to the Fraser River".

(l) The Master or agent of a vessel is required to give a notice of requirement of a pilot in sufficient time to enable the pilot to meet the vessel.

(m) The Pilotage Authority exercises disciplinary powers. An accused pilot is permitted to present his defence to the Authority either personally or in writing. The maximum pecuniary penalty is $200; recovery of the pecuniary punishment may be effected by set-off (Part I, p. 373 and ff.). In addition, a pilot's licence may be cancelled or suspended; there is no maximum limit for suspension.

(7) Pilotage Authority, Other Rules

Aside from the orders made by the Authority and the Secretary for the actual management of the service, pursuant to the General By-law, the Pilotage Authority has, on the recommendation of the pilots as a group, issued a list of "recommendations for the safety of ships navigating the Fraser River" (Ex. 160). All but one of these are in the imperative form. These will be analyzed and discussed later (vide pp. 281 and ff.).

2. HISTORY OF LEGISLATION

Preamble

The Pilotage District of New Westminster, as a separate entity, was created in 1904 when the former District of Yale and New Westminster was divided into the Pilotage Districts of Vancouver and New Westminster. (For the history of legislation prior to that date reference is made to the *History of Legislation* of the British Columbia District, pp. 10-17).

The New Westminster District came under the terms of reference of the Robb Royal Commission in 1918 (pp. 14-15). One of its recommendations was that this District be left as it was, i.e., as a separate entity, on

account of its exceptional situation governed by local conditions which set it apart from other Districts. Heed was taken of this recommendation and, while in 1919 all the other Districts on the west coast were amalgamated into one huge District under the name of the British Columbia Pilotage District, the New Westminster District remained separate and continued to function without interruption.

For study purposes the organization of pilotage in the New Westminster District may be divided into two distinct periods: prior to, and after, 1930.

Legislation prior to 1930

Up to 1930, the pilots practised free enterprise and competed against each other. Since the Pilotage Authority was only a regulatory body, the pilots were liable for any expenses the Authority incurred at their request or pursuant to the section of the Act which corresponds to sec. 328 of the present Canada Shipping Act. Anyone could become a licensed pilot (there was no restriction on numbers) provided he possessed the prerequisites enumerated in the By-law and passed the prescribed examination. It was mandatory for the Authority to grant an applicant an examination and, if he was successful, to issue him a six-month probationary licence which would be replaced by a permanent licence if his qualifications proved adequate.

The first pilot to hail a ship on her inward voyage to offer his services was entitled to the pilotage dues, whether he piloted her or not, and, furthermore, he was entitled to pilot her outward but, if not available at that time, the Authority would assign another pilot, usually the first one who reported as being unengaged.

The Authority regulated and supervised the service: by seeing that the licensed pilots were, and remained, qualified and physically and mentally fit; by settling any dispute that might arise, either between pilots, or between pilot and Master; by investigating casualties, complaints, breaches of law and regulations.

The Authority was also empowered to grant annual certificates (for an annual fee) to Masters and mates of regular traders, valid for the named vessels and ports.

The pilots were responsible for, and paid, the District expenses, proportionate to the earnings they had each made during the year.

The only reason why the dues (which belonged to the pilots) were made payable to the Authority was to make sure that each individual pilot was assessed and paid his rightful share of District expenses.

On returning from an assignment, each pilot was obliged to report its particulars so that the dues could be computed. If the pilot had collected the dues himself, he was required to remit them to the Authority without delay.

When the dues were collected, the pilot was paid on a monthly basis the dues he earned less 10% which was deducted for District expenses. At the end of the year, there was an adjustment and each pilot received his proportionate share of any accumulated surplus. Conversely, if there was a deficit, each pilot was assessed his share based on the ratio of his earnings to the total earnings.

Monies collected by the Authority from other sources, such as fines, licence fees and annual pilotage certificate fees, were kept in a separate fund called in the By-law the "pilotage fund". These monies were to be applied as stipulated in the Act (vide Part I, C. 5).

From the Yale and New Westminster District By-law, approved by Order in Council dated April 28, 1894 (Ex. 1427K(i)), which remained in force after the 1904 partition until 1906, the following points are noted: no minimum competency requirement was set this being left to the judgment of the Pilotage Authority; the fees for the annual pilotage certificates for Masters and mates were fixed at $100 per annum; pilot boats were licensed at a fee of $5 per annum; only pilotage within port limits was subject to compulsory payment; dues for pilotage between the port limits and sea were payable only when a pilot was employed; a pilot's licence was automatically suspended during the investigation of any shipping accident in which he was involved.

The first By-law for the District of New Westminster was enacted September 10, 1906 (Ex. 1427K(ii)) and was not amended until it was replaced in 1930. There was no provision for the licensing of pilot boats; payment of dues was compulsory anywhere on the Fraser River "from the lightship on the Fraser Sandheads to New Westminster" as compared to the former requirement to pay for pilotage within port limits only, i.e., Steveston and New Westminster; no provision was made in the tariff for pilotage charges between the light-ship and sea (from then on outside the District); there was no provision for a pilot fund.

Legislation after 1930

With the 1930 By-law (Order in Council 957, dated May 7, 1930, Ex. 1427 (g)), the foregoing was radically changed. The pilot's lot was improved and he was given more security and better working conditions, but at the expense of the freedom he had up to then enjoyed. The Authority no longer acted merely as a supervising and regulating body but assumed a new role: actual management of the pilotage service.

Competition was abolished: first, by limiting the pilots to the number considered necessary to meet the demand; secondly, by despatching the pilots on a roster system in the most equitable way possible; thirdly, by providing the pilots with a pilot boat service at the District's expense, so that the pilots no longer waited in their own boats off the boarding station for

vessels arriving from sea. Thus the pilots lost the right to choose a ship and the privilege of working less or more than their fellows.

The individual pilot was no longer entitled to the dues he had earned by his services. All the pilotage dues were now collected by the Authority and deposited in a special account—the Pilotage Fund—out of which the Authority paid the operating expenses of the District. Each pilot was then entitled to his share of the District net earnings, not on the basis of the number or value of his pilotage assignments, but on the basis of the time he had been available for duty. This share was called "pay" where the By-law stated that a pilot might be granted leave with pay, with half pay or without pay.

The Authority assumed the obligation and expense of making pilots available to incoming vessels. It despatched the pilots as equitably as possible and assumed the cost of acquiring, maintaining and operating the pilot boat service. A Pilots' Committee was created to be the liaison between the pilots and the Authority.

With regard to the pilot boats, sec. 9 of the By-law provided that they should be purchased, or built, and maintained out of the District revenues. Sec. 10 stated:

> "The pilots shall be deemed not to have any individual claim or interest in any vessel or vessels registered in the name of the Pilotage Authority".

The Authority was empowered to fix the number of permanent pilots but also had "the power of appointment of a pilot for special occasions" (sec. 16); the probationary period was extended to one year and an age limit was fixed at 65 with the possibility of renewal up to the age of 70; pilotage certificates were no longer issued to Masters and mates; a superannuation fund was created to which was credited a share from the gross revenues of the District and all monies received by way of fines, licences or fees other than pilotage dues and examination fees.

The 1930 By-law was frequently amended, mostly with regard to tariff and superannuation regulations and benefits.

In 1958, the Pilotage Authority contracted out the pension scheme. This was reflected by a further amendment, P.C. 1960-1035, dated July 28, 1960, which abrogated all the sections dealing with the superannuation fund except the one stipulating a compulsory deduction.

The 1930 By-law as amended was abrogated in 1961 and replaced by the new General By-law which is still in force and which was studied earlier (vide pp. 250 and ff.)

Royal Commissions and Other Investigations

In the *Robb Report of 1918,* the following excerpts are of interest:

> "The pilotage system of British Columbia probably originated during the rush to the gold diggings on the Fraser River in 1858, during the regime of the

Hudson's Bay Company, at which time Governor Douglas established rules and regulations for the navigation of the Fraser River. The first pilot licences issued were for the district of New Westminster and Yale. In 1879 a new authority was established which embraced the districts of Victoria, Burrard Inlet, New Westminster and Nanaimo. In 1907[1] the districts of Vancouver and New Westminster were placed under separate commissions, as at present constituted" (p. 3).

"The ports of the pilotage district of New Westminster include the ports of New Westminster and Steveston as well as the several way landings on the Fraser River".

"The district of New Westminster is somewhat exceptional as compared with the other pilotage districts on the British Columbia coast, as it is governed by local conditions which do not affect the other districts, and as the revenue derived from pilotage in this district is not sufficient to pay the necessary expenses of maintaining a pilot the municipal authorities of New Westminster have assumed this charge, and pay the only pilot of the district a monthly salary, while whatever receipts there are from pilotage are turned over to the city of New Westminster by the pilotage commission, after deducting the necessary expenses incurred by the said commission" (p. 7).

In the recommendations there is no mention of the New Westminster District, except in paragraph 27 which proposed "the payment of pilotage in the Gulf be made compulsory, based on draught of water" only, the rate of which, for a trip from sea to New Westminster, being $3.50 per foot draught.

In the *Morrison Report of 1928,* there is very little about the New Westminster District. It recommended:

"That the present system in vogue on the Fraser River be continued there, new by-laws to be substituted for the present somewhat obsolete ones" (p. 8).

"The pilotage of the Fraser River in the New Westminster District stands on a different footing from that of the other districts".

"The substance of the evidence of the few witnesses who appeared at the final sittings of the commission there, related mainly to matters of local administration and to the personnel of the pilotage group serving the river. The channels of the delta of the Fraser carry so much silt throughout the year that they are constantly shifting. It is necessary for the few pilots employed to be thoroughly familiar with these local conditions. As it has been put by some of the witnesses, it is 'a matter of pilotage apart from navigation'. This district has had, for a long period, a commission of three citizens. The system under which pilotage affairs have been carried on appears to have worked on the whole very satisfactorily ... Your commission does not deem it necessary to make any recommendations as to the Fraser River..." (p. 10).

In 1947, Captain F. S. Slocombe of the Department of Transport, conducted a *survey* and visited New Westminster (although it was not a District where the Minister of Transport was the Pilotage Authority). The following excerpts from his Report, *inter alia,* are noted:

"There are at present four fulltime pilots, with one temporary pilot as a relief when necessary. The temporary pilot is Master of a Public Works tugboat and does not pool his earnings, nor does he participate in superannuation. He keeps his fees for the pilotages which he performs".

[1] The actual year was 1904.

> "The pilots keep one boat at the mouth of the river and employ two men on watches to look after it. The pilots stay at home until called. The boat is paid for except for $900., and it costs $400. per month for its operation, including wages, interest on the loan (but not the principal), insurance and upkeep. The pilots pay out of gross earnings all expenses including the upkeep of the office, secretary's salary, rent, etc. There is altogether about $1,000. taken off the gross earnings per month, including a certain percentage for superannuation".
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> "The pilots at the time of this survey were performing about thirty pilotages per month between them, in addition to movages. The net earnings of each pilot in the calendar year 1945 were $5,500, and were expected to be $6,000 for 1946".

The *Audette Committee of 1949* did not investigate the New Westminster District because its mandate referred only to Districts where the Minister of Transport was the Pilotage Authority. But the financial assistance that was to be granted dating from 1959 to the maintenance of the pilot vessel service was certainly one of the results of the policy recommended in this Committee's report.

By Order in Council P.C. 1959-19/1093 dated August 27, 1959, the Department of Transport was authorized to assume the cost of operating, etc., pilot vessels and pilot stations in the two important Districts where the Minister of Transport was not the Pilotage Authority—New Westminster and St. John's, Newfoundland. The Department was already providing these services in the Districts where the Minister was the Authority, and the Order in Council stated:

> "That there are other pilotage districts which are equally deserving of assistance in the matter of pilot station and pilot vessel expenses and it may, with some justification, be claimed that such districts are being discriminated against".

Chapter B

BRIEFS

Six briefs concerning the New Westminster Pilotage District were filed by:

(1) The Pilots of the Pilotage District of New Westminster (Fraser River) (B-9, Ex. 169 and addendum);

(2) The Vancouver Chamber of Shipping (B-4, Ex. 168);

(3) Crown Zellerbach Building Materials Limited (B-6, Ex. 165 and addenda);

(4) The New Westminster Harbour Commissioners (B-7, Ex. 166);

(5) Pacific Coast Terminals Co. Ltd. (B-11, Ex. 167);

(6) New Westminster Chamber of Commerce (B-44, Ex. 1337).

The reference after each Recommendation shows where the question raised is dealt with in the Report.

(1) The New Westminster Pilots' Brief

When the brief was prepared, March 25, 1963, the pilots were seven in number, not formed into any association or corporation but represented by the three-man Pilots' Committee required by the Pilotage District By-law, section 5. All were members of the Canadian Merchant Service Guild, and all resided in the New Westminster area.

The pilots' recommendations are briefly as follows:

(a) pilots' earnings to be comparable, at least, to the highest paid Master using their services (p. 357);

(b) pilots to be "reimbursed by the total pilotage receipts" and bear no part of office and/or pilot boat expenses; and, as a means of achieving this aim, the present Authority to be replaced by the Minister of Transport as Pilotage Authority (General Recommendations 20 and 21, Part I, pp. 521 and ff. and 524 and ff.);

(c) remuneration to be sufficient to provide for unforeseen compulsory retirement at an early age (Part I, C. 6 and New Westminster Recommendation 1);

(d) pilotage dues to be compiled on the basis of maximum gross tonnage and draught (pp. 348-351);

(e) pilots to have a greater part in operations and management, including the examining, selecting and appointing of probationary and temporary pilots (General Recommendation 14, Part I, pp. 495 and ff.);

(f) the superannuation scheme to be improved through participation by, and assistance from, the Government and the shipping industry (General Recommendation 39, Part I, pp. 581 and ff.);

(g) a second pilot boat to be provided, since the one available is inadequate to maintain the service (p. 339 and New Westminster Recommendation 1).

(2) The Vancouver Chamber of Shipping Brief

For the nature of this organization and its rôle with regard to shipping and related problems, reference is made to the analysis of the British Columbia Pilotage District (pp. 26-27).

The Chamber of Shipping's recommendations may be summed up as follows:

(a) The remuneration of the pilots in the New Westminster District should not be increased solely because it is less than that of the pilots in the British Columbia District (p. 357 and Part I, C 6.)

(b) All interested parties should be consulted before any change is made in the rules, to avoid arbitrary action (pp. 311 and ff.).

(c) The Pilotage Authority should be abolished and replaced by a Central Board in Ottawa, the present Secretary and personnel being kept in office under the jurisdiction of the British Columbia District Superintendent (General Recommendations 14, 16, 17, 18 and 19, Part I, C. 11, and New Westminster Recommendation 1).

(3) CROWN ZELLERBACH BUILDING MATERIALS LIMITED BRIEF

Crown Zellerbach Building Materials Limited (formerly Canadian Western Lumber Co. Ltd.) has its head office in Vancouver and a plant at Fraser Mills, in the port of Fraser Mills, upstream from New Westminster and the railway bridge on the Fraser River. The plant is a large diversified sawmill and plywood operation employing eleven hundred men and producing yearly 150 million feet board measure of lumber and 105 million square feet of plywood. There are berthing facilities, of approximately 1,200 feet, which will accommodate two large deep-sea freighters. Their principal means of transportation is the Fraser River.

The Company's recommendations may be summed up as follows:

(a) measures to reduce the restrictions on deep-sea ships proceeding to and from points east of the Fraser River railway bridge (pp. 299 and ff.) by:
  (i) increasing the depth of the Sapperton and Port Mann channels to 30 feet below local low water;
  (ii) eliminating the restriction on night navigation through the railway bridge by the addition of suitable aids to navigation such as illumination of channels and/or the bridge;
  (iii) a special study to determine more effective handling of bridge aft vessels on the Fraser River;
(b) a dredging policy by the Department of Public Works which would meet the needs of the port of Fraser Mills (pp. 311 and ff.);
(c) conversion of the old Fraser River bridge from a swing span railway bridge to a lift span railway bridge (pp. 311 and ff.).

(4) THE NEW WESTMINSTER HARBOUR COMMISSIONERS' BRIEF

The Port of New Westminster is administered by a three-member Corporation created by a special Act of Parliament "The New Westminster Harbour Commissioners Act" (3-4 George V, c. 158) (Ex. 513). One member is appointed by the City of New Westminster and the two others by the Governor in Council (sec. 6). The Corporation has no jurisdiction or control respecting private property or rights within its limits or with any property of the Crown except when duly authorized by Order in Council (sec. 12). It has power to sue and be sued (sec. 13) and to hold property (sec. 14). Profits from operations, if any, to belong to the city (sec. 16). The Corporation has rights of expropriation (sec. 18) and borrowing powers (sec. 19). It has authority to make by-laws for traffic control in the harbour of vessels, including boats as small as row boats, and for imposing tolls upon vessels and goods on board. All such by-laws must be approved by the Governor in Council (sec. 20). The Corporation has to

account yearly to the Governor in Council for its financial responsibilities (sec. 29). Its officers and employees consist of the Port Manager, the Secretary, the Harbour Master and such other officers, clerks and servants as may from time to time be appointed by the Commissioners (sec. 11).

Pursuant to their traffic control powers, the Commissioners have included in their by-laws (P.C. 1961-1770) (Ex. 156) some provisions regarding mooring, anchoring and obstructions in the port and on the river by booms, rafts, fishing vessels, etc.... and have modified the normal rule of the road regarding the transit of the railway bridge. These will be studied later.

Their Recommendations contained in their brief and in their evidence may be summed up as follows:

(a) that machinery be set up to mediate differences of opinion on pilotage matters as a guarantee against arbitrary decisions on the part of the pilots (pp. 311 and ff. and General Recommendation 19, Part I, pp. 515-520);

(b) that means be taken to facilitate the transit of the railway bridge (pp. 299 and ff.):

(i) by improving aids to navigation, the channel, etc.;

(ii) by improving the pilotage service and making it more readily available, e.g., specializing selected pilots in the handling of bridge aft vessels and developing new pilotage techniques such as using two pilots or employing tugs;

(iii) that the swing span of the railway bridge be replaced by a lift span.

(5) Pacific Coast Terminals Co. Ltd. Brief

Pacific Coast Terminals, which is 72% owned by the Consolidated Mining and Smelting Company of Canada, owns and operates storage, warehouse and commercial dock facilities in New Westminster and operates bulk-loading facilities in Port Moody. The Company, as such, does not own or charter vessels nor does it act as a shipping agent. It receives and arranges commodities for onward transportation by water in ships trading into New Westminster, and receives from incoming vessels cargo for distribution in the general area.

Its recommendations may be summed up as follows:

(a) the Fraser River pilotage system to be continued and improved for the development of shipping and trade (New Westminster Recommendations 1 and 2);

(b) the payment of dues to be compulsory but not to exceed those of Vancouver (New Westminster Recommendations 1 and 2);

(c) Part VI of the Canada Shipping Act to be amended to provide adequate administration and proper government of the pilots (General Recommendations, Part I);

(d) the District to be merged with the British Columbia District and administered by a Central Authority; or at least that the New Westminster Pilotage District limits be fixed so as to overlap with the British Columbia District to the extent of including the Harbour of Vancouver in order to avoid the change-over of pilots for trips between the Fraser River and Vancouver Harbour (New Westminster Recommendation 1);

(e) the ship channel on the Fraser River to be improved to ensure adequate width and depth in the light of present trends in the design and size of ships, and their consequent deeper draught (pp. 299 and ff.).

(6) New Westminster Chamber of Commerce Brief

The municipalities of Surrey, Port Coquitlam and Fraser Mills, and Domtar Chemicals Limited, Canada Creosoting Division and the B.C. Towboat Owners' Association are situated east of the railway bridge and Grosvenor-Laing (B.C.) Limited to the west. Domtar Chemicals Limited operates a facility upstream from the bridge and Grosvenor-Laing (B.C.) Limited operates Annacis Industrial Estate on Annacis Island, Delta Municipality.

These municipalities and companies have endorsed the Crown Zellerbach recommendations that every possible means be taken to improve the water access to the area above the railway bridge (Ex. 192). They urge "that every possible means be employed to ensure the immediate replacement of the swing span thereby implementing what has been for almost twenty years, and what presently remains, the most economic and sensible solution" (p. 311).

Chapter C

EVIDENCE

1. GENERAL DESCRIPTION

(1) District Limits

In general terms, the Pilotage District of New Westminster comprises the navigable waters of the Fraser River and its delta including the North Arm. It extends westward into the Strait of Georgia as far as the mid-channel line from the International Boundary on the south, to the seaward extension of Point Grey, south of Burrard Inlet. The Sand Heads boarding station, situated one mile seaward of Sand Heads lighthouse, is well within the District limits and vessels arriving from, or sailing to, United States waters can enter or leave the District of New Westminster without passing through the Pilotage District of British Columbia.

In practice, the District waters for deep draught vessels extend some twenty-four miles from the boarding station upriver as far as Port Mann. Shallow draught vessels may proceed further up to Mission City some fifty miles from the mouth of the Fraser.

Recommendations Received on District Limits

It was recommended by Pacific Coast Terminals Limited that the New Westminster pilots' territorial competency be extended to the harbour of Vancouver to enable them to commence or terminate their pilotage trips bound to or from the Fraser River. It was argued that a substantial saving in time and money would be derived by eliminating the changeover of pilots at Sand Heads in about 30% of the ocean-going vessels plying the Fraser River, i.e., for those vessels that are either coming from or bound for Vancouver. It was claimed that Vancouver has no unusual pilotage problems that are not encountered in New Westminster, but it was also agreed that specialized, up-to-date local knowledge was necessary for pilotage on the Fraser River and that the B.C. pilots' territorial competency should not be extended to the New Westminster District.

Another recommendation made by both the Vancouver Chamber of Shipping and Pacific Coast Terminals Limited was that the two Districts be merged for administrative purposes, partly to simplify shipping operations, but mainly to eliminate duplication of pilotage and the resultant

added expense. Pacific Coast Terminals Limited saw this as an alternate method of implementing their first proposal.

The Vancouver Chamber of Shipping also submitted that the present situation is difficult and cumbersome because, the Minister of Transport not being the Pilotage Authority, the Department of Transport is not particularly concerned with pilotage in the New Westminster District. On the other hand, they remarked that in the British Columbia District the Department takes a keen interest in pilotage through the Superintendent of Pilots—one of its employees. The Chamber added that by giving the supervision of the New Westminster District to the Superintendent of Pilots in Vancouver liaison would be improved and, therefore, the pilotage service would become more efficient. The Chamber recommended, however, that the present District Secretary at New Westminster be retained as despatcher under the direction of the Superintendent in Vancouver.

The last recommendation is covered in the Commission's General Recommendations 15 and 18 to which reference is made (vide Part I, C. 11). The recommended merger of the New Westminster District with the B.C. District or making Vancouver Harbour the joint territory of both Districts will be dealt with in a specific Recommendation.

(2) Physical Features

The principal feature of the District is the delta at the mouth of the eight hundred and fifty mile long Fraser River with the many characteristics and hazards common to deltas, i.e., flat land, alluvia, silting, shallows and branching, meandering waters.

Visibility is often reduced by heavy rain, by severe snowstorms, (which may last three or four days) and by fog which frequently occurs from October to the end of March. Deep-sea vessels may be delayed by any of these causes.

A hazard is also created by the smoke and smog from the refining and reduction plants at Steveston. At times, visibility is reduced to nil.

Before dredging began in 1885, the channel depth was only eight feet at low water. In 1913, the river was dredged to sixteen feet in order to accommodate the increasingly larger deep-sea steamers that were gradually replacing sailing vessels.

As of 1963, the channel was maintained at a depth of 28 to 30 feet as far as the railway bridge. However, there were some shallow areas, e.g., at Steveston Bar and Kirkland Island where the available depth at low tide was 22 and 24 feet respectively. Due to improvements made in the channel, as of May, 1968, the controlling points for maximum draught are now at the river mouth—24 feet at low water—and the Steveston Cut—26 feet at low water (Ex. 160).

Above the railway bridge the channel shallows. In 1963, vessels bound upriver past the railway bridge were restricted to 24 feet in and 25 feet out for Fraser Mills, and 25 feet each way for the Gypsum Plant. (Ex. 160).

In addition, because of the winding, narrow bends in the channel below the railway bridge, it had been decided that a vessel's maximum length for safe navigation in the river was 600 feet and then only under the best tidal conditions, and in daylight. (Ex. 160). (Re details and validity of these restrictions vide pp. 281 and ff.).

The railway bridge is another controlling and restricting factor that will be studied later.

In view of the trend to larger and deeper ships, the New Westminster Harbour Commissioners were planning in 1965 to improve the waterway by widening and dredging the ship channel to accommodate ships drawing up to 35 feet. Although the channel has been improved, this aim has not yet been achieved. As of April 1968, the maximum draught considered safe by the pilots on a 12 foot tide or better at Sand Heads was 31 feet (Ex. 160).

Large vessels do not proceed east of Port Mann because four miles upriver a shoal limits navigation to ships drawing not more than four feet. The smaller craft which ply this section of the river occasionally employ a pilot. During the 1948 flood, when the Royal Canadian Navy was called upon to assist those who were marooned in the upper Fraser Valley, several naval craft navigated far upriver.

Anchorages are restricted to certain named areas because the channel is narrow and the normal current of the river is reversed by the flood tide during most of the year. Even in these areas the pilots remain on board and maintain a security watch on account of the indifferent holding ground and exposure to the wind.

(a) *Freshet, Water Level and Silting*

A special feature of the New Westminster Pilotage District is the freshet. The upper reaches of the Fraser River freeze over during the winter thus reducing its flow considerably. When the snow and ice melt in the spring there is a tremendous increase in the volume of water. Hence, the rate of outflow varies according to the season of the year: during the period September to April the rate of discharge falls to a low of 20,000 cubic feet per second, but during the freshet months, May to August, the rate may rise as high as 500,000 cubic feet per second.

From late fall to early spring the predominant influence in the river as far up as Fraser Mills is the tide. The flood tide reverses the current attaining a velocity of 2½ to 3½ knots under the railway bridge. During each twenty-four hours two periods of slack water occur.

During the freshet period there is a combination of tidal influence and water discharge. About the first of May the runoff from the spring thaw commences. The gauge at Mission City, 30 miles above New Westminster, rises from its normal level of 4-7 feet to an average of 20 feet. The highest levels on record are 24.71 feet in 1948 and 24.19 feet in 1950. From statistics filed as Exhibit 185, it appears that the river returns to normal level during the latter part of July.

One result of the freshet discharge, particularly in the vicinity of New Westminster, is that the upstream movement of the flood tide is nullified whenever the gauge at Mission City registers more than 10 feet. Although the level of the river rises by as much as 8 feet on the flood tide, there is at all stages of the tide during these months a downstream current which may reach 7½ to 8 knots, although 6 to 7 knots is the normal expectation. This may be compared with a winter upstream flow of 2½ to 3½ knots on the flood tide, and a downstream current of 4½ knots on the ebb tide.

Since the river is winding, sets across the channel from one side to the other are normal, and the pilots are so accustomed to them that they know exactly what to expect, depending on the season and the state of the tide. These sets are more pronounced during the freshet season as a result of increased currents, turbulence and eddying.

The water level of the Fraser is not constant. In addition to the tidal fluctuation (which might reach 12 feet at the estuary) there is the low water slope. At slack tide, the lowest reading would show a slope from 6 or 7 feet at New Westminster to zero at the river's mouth.

Silting is a hazard common to deltas everywhere. In the Fraser estuary it does not occur gradually through regular sedimentation, but develops abruptly in the freshet season. From September to May there is little silting but as the river rises sediment is carried from the interior, some carried to the sea and some deposited along the navigable channel. When the freshet subsides, it is usually found that heavy deposits have been left, mostly in eight different areas, ranging from three or four feet in most sections but up to fourteen feet in the vicinity of Fraser River Elevator No. 4 (Exs. 147 and 148). Mariners must be constantly on the alert. The charts of the area bear a "Caution" that the depths shown thereon are subject to change as a result of silting and subsequent dredging.

High freshets also cause scouring, i.e., removing material from one side of the channel and transferring it to the other, and on two occasions the channel was completely changed. However, this is a gradual development which the pilots can follow and assess.

Occasionally heavy rains during the autumn or winter cause freshets with similar results.

(b) *Surveys, Dredging and Other Works by the Department of Public Works*

The Department of Public Works conducts regular surveys of the depth of the ship channel twice a year as far as Port Mann, and four or five times a year in the critical areas. Copies of all sounding charts are sent to the pilots through the Pilotage Authority within a week of completing a survey.

The whole channel up to Port Mann through Sapperton Channel is dredged regularly each year after the freshet to restore normal depths, and special dredging is carried out wherever silting has occurred. Sapperton Channel was deepened to 27 feet in 1961 or 1962. No dredging is done in Port Mann Channel and nothing of consequence is attempted above Port Mann.

The basic reason for constructing the Sapperton Dyke was to divide the flow of the river, thus providing sufficient water for both the Sapperton Channel and the Port Mann Channel. The Dyke also helps to control silting. Recent soundings of Sapperton Channel show that there has been no silting of consequence. It was estimated that it would take three or four months to deepen this channel to thirty feet.

Surveys are also made alongside the berths in the river and the information obtained is passed to all concerned. When it appears that there is not enough water in a certain locality, a restriction is issued and kept in force until the necessary dredging has been completed. For example, if it were found that shoaling had occurred at Fraser Mills, Crown Zellerbach Building Materials Limited would be informed so that they might arrange for the necessary dredging.

Wharf owners are responsible for dredging alongside, e.g., since 1956 Crown Zellerbach Building Materials Limited have been responsible for dredging the total length of their wharf out to a width of 80 feet and also for a 90-foot approach channel. The Department of Public Works does the actual dredging and the Company is charged the full cost of dredging the wharf site and 50% of the cost of dredging the approach channel. In 1959, the Company paid $6,327.45 for this work; in 1960, $8,271.18; and in August, 1961 (after the freshet), $14,887.08.

The Department of Public Works has been carrying out extensive studies in order to improve the so-called "Trifurcation Area", i.e., at the beginning of the delta where the river separates into the North Arm, Annacis Channel and Annieville Channel. Model tests were carried out and public hearings were held to discuss the proposed work. By controlling the water flow and currents, sedimentation, which is now severe in this area, could be reduced to a minimum. The cost of the project was estimated a $3.9 millions in January 1965. The Department of Public Works believed that the time was coming closer when the project would be economically justified and construction could proceed. The pilots have been kept posted

and consulted. (Report on Proposed Improvements Fraser River Trifurcation Area, New Westminster, B.C., Nov. 1961 and D.P.W. letter dated Jan. 14, 1965, Ex. 1427(v)).

Further information received from D.P.W. dated May 7, 1968, gives the details of developments since that time:

> "The Trifurcation Project has been subdivided into three phases. Phase I, which consisted of the structures in the vicinity of the Fraser Surrey Dock, was completed in 1966-67 at a cost of $575,000.00. Phase II is currently underway and is scheduled for completion by December 31, 1968, at an estimated cost of $2,450,000.00. This consists of the structures at the entrance to Annacis Channel and along the Annacis Island Sandfill area. Phase III, which consists of the Timberland Rock Mound Structure and the submerged groynes near the Overseas Dock area, is currently scheduled to start in 1969-70 and be completed by May 15, 1970, at an estimated cost of $1,827,000.00. This would complete the project for a total estimated cost of $4,852,000.00.
>
> There have been no other substantial capital works done since 1963 to improve or deepen the Fraser River. Annual maintenance dredging has, of course, been continued using one contract and two departmental dredges."

(c) *Complaints About Ship Channel*

Because ships are increasing in size the ship channel must be constantly improved. For instance, in April, 1961, the New Westminster Pilotage Authority complained to the Federal Government about the situation caused by shoaling at the critical channel bend between buoys 16 and 18 as follows:

> "This bend is very acute, requiring an alteration in course of 67 degrees. Over the past several years, the deep-water ship channel in this bend has become increasingly narrow, being reduced by sediment from nearly 1200 feet to the present width of about 500 feet. Today's ships, many of them over 500 feet in length, have their bows and sterns dangerously close to the rock jetty while navigating this bend. The strong current at this point and frequent strong cross winds add to the difficulty. Also, four fish reduction plants operating nearby at Steveston, spew their clouds of steam and smog over the area, and at times reduce visibility to near zero.
>
> The traffic on the river has increased many fold during the past few years, both in deep-sea ships and tug and barge traffic. Also ships have become much larger and many of the barges are as large as small ships. The congestion is particularly bad at the bend as tows are coming in on the flood tide just as outbound deep-draught vessels arrive there at high water."

The Vancouver Chamber of Shipping also wrote to the Department of Transport complaining about the same situation, adding that as a result of the narrowing of the channel the pilots had then recommended that vessels of over 500 feet navigate this area in daylight hours only, and under the most favourable tidal conditions.

These representations were passed by the Department of Transport to the Department of Public Works, which is responsible for maintaining the ship channel, and eventually corrective measures were taken.

Pacific Coast Terminals urged that the ship channel be improved to keep abreast of developments in shipping; they suggested that this could be best accomplished by establishing, as was done in 1946 for the St.

Lawrence River, a *Ship Channel Committee*[1] composed of representatives of the Department of Transport, the Department of Public Works, shipowners and pilotage groups. The responsibility of the St. Lawrence Committee was to establish, study and recommend the width, depth and other navigational aids necessary to service satisfactorily and efficiently new types of vessels. Pacific Coast Terminals recommended for the Fraser River a study similar to that done for the St. Lawrence because they feel that the ship channel is no longer adequate. They complained against the controlling depth in the river that does not allow vessels to load to their available draught, with a resultant loss of tonnage both to ships and to Fraser River ports. Furthermore, deep draught ships have to wait for the tide to provide enough water to proceed either in or out. They urged that this be improved. They pointed out that the trend is now to larger and longer vessels because of their economy and efficiency in carrying cargo. These vessels are, to a certain extent, of greater draught but not necessarily in proportion to the size of the vessel. They concluded that, in view of this trend, unless the Harbour of New Westminster and its channel are improved, the ports in the area will soon go out of business.

Crown Zellerbach Building Materials Limited also suggested that the channels above the railway bridge, i.e., Sapperton Channel and Port Mann Channel, be deepened to at least the same depth as is available at New Westminster in order to remove the existing draught limitation that adversely affects this area.

The Secretary of the Pilotage Authority reported on May 1, 1968 (Ex. 160) that gradual improvements in the depth of water in the dredged cuts and widening the channel in the bends have allowed larger deeper draught vessels to navigate the channel (Ex. 160).

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[1] The St. Lawrence Ship Channel Committee 1965 has the following terms of reference:

"1. The Committee shall coordinate the investigations and research related to proposals for improvement of the St. Lawrence Ship Channel (Lake Ontario to the Gulf of the St. Lawrence) for marine transportation purposes.

2. The Committee shall study the existing and prospective uses of the St. Lawrence River for marine transportation purposes and recommend on the basis of the findings the objectives and design criteria that should govern future ship channel improvements.

3. The Committee shall report with recommendations on the engineering projects determined by the Committee to be necessary to achieve the optimum use of the St. Lawrence River Ship Channel.

4. The Committee shall review and report on proposals by other agencies for works which may affect the use of the St. Lawrence River for marine transportation purposes.

5. The Committee shall prepare and submit a work programme and budget estimate for studies and investigations covering a 5-year period recommended by the Committee. This programme, to be initiated on 1 April 1965, shall be revised each year in the light of circumstances then prevailing."

(3) Principal Harbours

For administrative purposes all ports and berths on the Fraser River that are visited by deep-sea vessels are included in the New Westminster Harbour as defined in sec. 4 of the New Westminster Harbour Commissioners Act (3-4 Geo. V, c. 158, (Ex. 513)). According to this definition, the harbour extends upstream as far as Pitt River, and downstream as far as the mouth of the Fraser; it includes, *inter alia,* the Port of New Westminster proper, Fraser Mills, Port Mann and Port Steveston, but does not include the seaward end of the North Arm of the Fraser River. Sec. 4 reads:

> "For the purpose of this Act the Harbour of New Westminster shall be deemed to extend from a line drawn north and south, astronomically, to each shore of the Fraser River, from a point on the line of average high water mark, on the eastern end of Manson or Douglas Island, known as Point Sebastien and situate in the Fraser river at the mouth of the Pitt river; thence down stream, extending on both sides to the line of average high water mark, to lines drawn across the outlets of the Fraser river into the Gulf of Georgia from point to point at low water mark on each of the points of land forming the said outlets; but not extending further northerly than a point equidistant between the most southerly and the most northerly points of the western shore of Lulu island; and shall also include the adjacent waters of the Gulf of Georgia, upon and over the Sand Heads as far seaward as are from time to time defined by the Governor in Council; but shall not include any portion of the North Arm of the Fraser river west of a line drawn across the said North Arm in continuation southerly of the westerly boundary of the city of New Westminster; and shall also be deemed to include all water front property, water lots, piers, docks, shores and beaches in or along the waters forming as aforesaid the said harbour".

Throughout the area administered by the Harbour Commissioners there are 16 berths which accommodate deep-sea vessels. Proceeding upriver from Sand Heads these are Canada Rice Mills on Lulu Island some four miles up from Steveston; Dow Chemical Works on Tilbury Island; the Lafarge Cement Company on the north bank, just below Lion Island; Fraser River Elevator No. 4 on the south shore opposite Annieville Dyke; New Westminster with several berths; the Gypsum, Lime and Alabastine Company on Port Mann Channel and across the river on Sapperton Channel; Fraser Mills Berths, which are 1,200 feet long and can accommodate two large vessels simultaneously. There is no deep-sea traffic above Port Mann.

West of Port Mann on Port Mann Channel there is a new development named Surrey Docks where deep-sea vessels can be accommodated, provided the shoaling, which takes place annually as a result of the freshet, is controlled. At that site, shoaling has been known to reduce the depth from 25 to as little as 13 feet. The Harbour Commissioners, who operate Surrey Docks on behalf of the Federal Government, stated in 1963 that they hoped

to obtain approval from the Department of Public Works to maintain one dredge there a few days a week when required.

Some of the berths listed above are not accessible at all stages of the tide—and ships may have to wait at anchor for favourable conditions before berthing.

The Harbour Commissioners have made regulations to control traffic pursuant to sec. 20 of the New Westminster Harbour Commissioners Act. In addition to the regulations regarding fishing vessels, because of the special features of the area, they have modified the regulations for the prevention of collisions at sea, such as reversing the rule of the road for ships proceeding upriver under the railway bridge. (Vide pp. 275-6).

During colonial years the Fraser River was the mainland colony's principal waterway and the City of Queensborough, its capital (later renamed New Westminster) served as the Port of Entry. In the early days of settlement, the lower reaches of the river provided a safe haven for deep-sea sailing vessels which brought in hundreds of pioneers and thousands of gold miners.

The port of Steveston, which is mentioned in the 1919 Robb Commission Report as one of importance, is now part of New Westminster harbour, as described earlier. It is now less important because its approaches and berths are too shallow to accommodate deep-sea vessels. In addition, fewer ocean-going vessels proceed to Fraser Mills area above the railway bridge both because of insufficient depth of water and the obstruction created by the bridge (pp. 274 and ff.).

North Fraser Harbour is also located within the New Westminster Pilotage District. The harbour comprises the navigable waters of the North Arm of the Fraser River from the westerly boundary of the City of New Westminster to the Gulf of Georgia. It is administered by a separate Harbour Commission known as the "North Fraser Harbour Commissioners" (1913, 3-4 Geo. V, c. 162) (Ex. 523). Due to the shallowness of the channel, the North Arm is not used by ocean-going traffic.

(4) Aids to Navigation

The maintenance of aids to navigation in the Fraser River is a never-ending task. The ship channel is well marked by buoys, but during the freshet season they are often fouled by drift and carried away or displaced. Hence, the pilots can not always rely on them. When a buoy is displaced or a light fails, the pilots and ship operators are informed. There is no need to issue Notices to Mariners because all the buoys in the Fraser River are readily accessible and remedial action is taken without delay.

When aids to navigation—particularly buoys—are being positioned, there are two local hazards to be reckoned with, i.e., the freshet and tows. Occasionally loose pieces of ice float down the river, but they do not cause damage.

Aids to navigation are constantly being improved. At the time of the Commission's hearing, the District Marine Agent stated that all complaints received by him had either been dealt with or were being attended to.

Although the Minister of Transport is not the Pilotage Authority for the New Westminster District, the Marine Agent of the Department of Transport provides a liaison service by forwarding any requests for improvements to the Department of Public Works, which is responsible for maintaining the ship channel, e.g., the complaints of the pilots and of the Vancouver Chamber of Shipping in 1961 about conditions in the channel bend between buoys 16 and 18. A request by the pilots for the installation of eleven tide gauges along the river was similarly referred to the Department of Public Works. It did not agree that these gauges were necessary because there is a tide gauge at New Westminster, and with the aid of tide tables any pilot can readily determine the state of the tide at any place along the river.

On May 1, 1968, the Secretary of the Pilotage Authority reported a complete reorganization of the buoy system in 1967 with the addition of several lights, shore aids, radar reflectors and day marks which have been of great benefit (Ex. 160).

(5) Maritime Traffic

Maritime traffic on the Fraser River is congested because of the number and variety of vessels using the restricted channel. In addition to deep-sea vessels, there are tow boats with booms and barges, fishing boats and some coastal ships.

As in the case of the British Columbia Pilotage District (pp. 39 and 40), fishing boats and tows are the principal navigational hazards to deep-sea vessels and the winding, narrow channel accentuates the risks.

Fishing vessels may be encountered anywhere in the District and at any hour, except for a period of two or three months from December to February. There are five species of salmon, each running at different times, according to their season. During these runs, particularly in August and September, the fishing boats concentrate at the mouth of the Fraser.

Fishermen are generally without any experience in large vessels, are not familiar with the customs and rules of navigation and are not conscious of the dangers they create for themselves and others. The only prerequisite to becoming a fisherman is to pay the $1 fishing licence fee. Fishing boats are about 24 to 28 feet long. Nets used in the river are about 900 feet in length and in the Gulf of Georgia about 1,500 feet. At night, their presence on the river creates an even greater danger because the bends often prevent

both direct long range visual sighting and radar observation. Furthermore, those small wooden craft do not show up well on radar.

To alleviate this hazard the New Westminster Harbour Commissioners state in subsec. 83.2 of their By-laws (P.C. 1961-1770, dated Dec. 7, 1961, (Ex. 513)).

> "No gill net shall be cast or allowed to drift in the channel of the Fraser River from the lighthouse at the Sand Heads to the No. 1 wing dam at Lulu Island".

Subsec. 83.3 adds:

> "A gill net that is in any part of the channel of the Fraser River, other than that part referred to in subsection (1), shall, upon signal by a vessel to the operator of the gill net, be removed in such manner as will permit the passage of the vessel".

After several accidents and near accidents, involving fishing boats which impeded navigation by not keeping clear and by not observing the By-laws, the pilots requested a patrol boat. The Harbour Commissioners supplied a boat which proceeds ahead of ocean-going ships to clear the channel. While this service does not always guarantee a clear passage it has greatly improved traffic conditions. If there are a number of ships arriving or departing together, the patrol boat precedes the first ship to warn fishermen of the traffic to follow. Despite all these regulations, patrols and warnings, accidents and near accidents still occur. However, the situation is now much improved over previous years.

Tugs towing booms, rafts or barges, constitute one of the most serious traffic hazards because of their great length, slow speed, and the fact that they usually cross from one side of the channel to the other. At night, low visibility compounds the danger.

The log rafts that are met in the vicinity of New Westminster generally come from the North Arm of the Fraser River, pass New Westminster and proceed further up the Fraser or enter Pitt River. Other rafts go to Timberland Mills on the south bank and to other storage grounds in numerous locations all along the river. Some log rafts come down river bound for the North Arm. For these there are two particular areas of congestion:

(a) the swing span of the railway bridge, especially if the tow crosses the channel to use the north span;

(b) the port of New Westminster which tows regularly pass through as they proceed downriver.

Some tows may be 2,500 feet in length with 400 to 500 feet of towline. Because of their weight and shape, their speed is very low and they must depend on the tide to make progress. When stemming a current they make little headway over the ground and, hence, for long periods they may even appear to be stationary. If this occurs in the harbour area, a ship's departure may be delayed, and on occasion the tug which has been hired to assist the ship must first help the tow in order to clear the way.

Moreover tows do not, and can not, always comply with the rule of the road because, being so unmanoeuvrable, they must keep to one side or the other of the channel depending upon their destination.

At night and in foggy weather, they become a special hazard although they carry a tail-light at the end of the tow, and with rafts of any great width, a light is also shown on each side of the tow. Although tows normally show on radar, they can not always be seen on account of the bends in the river. In daytime, the pilot can see the traffic and observe a tow rounding channel bends at a distance of two or three miles. He can then appreciate what the tug is towing, but at night—when most pilotage assignments are performed—it is difficult to know what is being towed and when the tow will be met, although the masthead lights show the tug has a tow.

(6) New Westminster Railway Bridge

The New Westminster railway bridge, also called the Westminster Bridge, is the major obstruction to ships proceeding upriver past New Westminster. It is at all times a serious obstacle for large vessels and, under certain conditions, a hazard for smaller ones as well.

The City of New Westminster was developed under the impact of railway expansion. The Canadian Pacific Railway line into the city was completed in 1885 and the railway bridge was built in 1904, presumably to complete the Great Northern Railway connection with the United States. Significantly, the Panama Canal, which played such an important part in the development of the Pacific Coast of North America, was not opened until 1914, ten years after the completion of the railway bridge. However, had it opened some ten years earlier, large deep-sea ships would have made more use of B.C. coastal ports, and their dimensions would, no doubt, have discouraged the construction of a bridge of the size and limitations of the existing railway bridge.

The railway bridge is situated at the east end of the Port of New Westminster, some 200 feet above the Pattullo Highway Bridge, and some 2,000 feet below City Bank, which creates a division between Sapperton Channel on the north and Port Mann Channel on the south. The railway bridge has a centre pier which supports a swing span to give navigational access to the upper reaches of the Fraser where, *inter alia,* the Crown Zellerbach Building Materials Limited mill is located at Fraser Mills. The swing span when open provides a south draw with a horizontal surface width of 170 feet between piers and a north draw with a surface width of 171 feet, 5 inches, which is reduced by the slope of the banks of the channel to 160-167 feet.

The Pattullo Bridge has a vertical clearance of 146 feet above freshet level and a horizontal clearance of 400 feet. It presents no navigational problems.

About 2,000 feet above the railway bridge (i.e., between the bridge and the Middle Ground Buoy) the river forks around City Bank into Sapperton Channel and Port Mann Channel. Sapperton Channel is only 300 feet in width with a depth of 26 feet at low tide. The river then curves from northeast to east, the north channel being the more accentuated part of the bend around City Bank. The downstream current flowing from the north channel crosses the bridge at an angle with the ship channel, causing a set to the south.

The tidal range at the bridge, except during the freshet period, is between 5 and 6 feet. The depth of water ranges from 60 feet near the north pier to 23 feet near the south pier.

In non-freshet periods, the current reverses with the tide from a 4½ knot ebb current to a 2½ to 3½ knot flood current. The duration of the ebb current is approximately nine hours. Furthermore, because the strong flood tides occur at night, there is often no slack water period during daylight. During strong freshets, although the tide is still felt at the bridge, the current then never reverses but keeps ebbing at a speed that may reach 7½ or 8 knots with no slack water period, but its velocity is least at high water and greatest at low water.

The currents were studied to establish their pattern and velocity. A survey carried out June 21, 1955, (during the freshet) showed the following velocities:

	Depth	*Feet per Second*
(a)	Surface	4.5
(b)	10 feet	6.9
(c)	15 feet	7.3

In addition, the survey proved that these currents did not run parallel to each other (Ex. 171).

Because the draws under the railway bridge are so narrow, one of the pilot's main problems is his ability or otherwise to see through the bridge structure. It is much easier to transit the bridge in a small ship when the pilot can see the sides of the draw and any traffic beyond, but difficulties increase with size of the vessel. Pilot Spier stated that on one occasion when he was in a large ship he lost sight of the bridge when only two thousand feet away, and that a pilot has to take a ship of that size through "on an educated guess". This is particularly true of bridge aft vessels and also of conventional ships that are not well trimmed.

On account of the angle of the swing span, vessels bound for Fraser Mills proceed upstream at slack high water or during early ebb tide through the north draw of the swing span on the port side of the main channel in order to turn into Sapperton Channel. If they took the south draw on the starboard side of the channel and followed the normal rule of the road, they would be unable to cross the channel against the downstream current

in the limited space between the railway bridge and City Bank. This departure from the rule of the road is ordered by sec. 66 of the New Westminster Harbour Commissioners' By-laws. It has been in force for many years. As a result, ships bound for Sapperton Channel must cross from the starboard to the port side of the channel at Annieville Dyke, transit the bridge through the draw lying to the port side of the ship, alter 35° to port as soon as clear in order to pass Middle Ground Buoy, return to the normal rule of the road by keeping to the starboard side of Sapperton Channel for two miles up to Fraser Mills and then cross to the north shore to berth port side to on the slack or ebbing tide and current.

The distance from the railway bridge to Middle Ground Buoy was stated as approximately 1,800 feet[2] from the centre of the draw to the buoy. Hence, the pilots usually start altering to port while still in the draw, to be certain they clear the buoy and keep any outflowing current on the starboard bow.

The pilots seldom proceed upstream at slack water and prefer stemming the early ebb tide and current which gives them better control. Pilot H. L. Gilley was of the opinion that there is enough room between the railway bridge and Middle Ground Buoy to permit a 500-foot ship to make a sharp alteration of course in safety.

Ships outbound from Fraser Mills (where they are normally berthed port side to) first proceed upstream past Sapperton Dyke nearly as far as Port Mann, then turn, and take the Port Mann Channel downstream. They keep to mid-channel unless they meet traffic, in which case they use the port side of the channel to pass.

Depending on the state of the tide, the pilots try to place their ships in a favourable position when four or five ship lengths above the bridge. If an ebb tide is flowing, they position their ship to the south of the span to the extent necessary to allow for the prevailing set to the north. There is not time to line up with the bridge since the ship is on a continual swing to port and is not steadied until actually in the draw. In a strong ebb, a four to five hundred foot ship will take only forty or fifty seconds to clear the bridge. During a flood tide they can slow down and line up with the bridge two or three ship lengths away. This navigational hazard is further compounded by hydraulic action if ships are closer to one pier than the other.

During ebb tide the pilots allow for the definite set to the north in the bridge approaches by manoeuvring so that the bow just clears the pier on the port side and allows the stern to clear the protection work on the starboard side. It is a question of judging allowance for the northerly set—in order to do so they must head almost directly for the pier on the south side. This problem is aggravated during the freshet season.

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[2] The actual measurement on Canadian Hydrographic Service Chart No. 3431 is 2,100 feet.

The pilots estimate that it takes an hour to reach the railway bridge from Fraser Mills on an ebb tide.

According to Harbour Regulations, "the draw that lies to the port side of the vessel" is to be used when transiting the railway bridge, but under certain circumstances this is not possible. For example, at times a ship berthed starboard side to at Fraser Mills due to the state of the tide can not be turned. In this event, with the Harbour Master's approval the north draw (or the draw lying to the starboard side of the vessel) may be used for the downstream passage.

The pilots must assess the most favourable state of tide for outward trips. With a heavily laden ship they choose the time of slackest water or any time the tide is flooding during daylight hours. One of the difficulties is uncertainty whether there will be slack water on any particular day. During the freshet there are no slack water periods and at other times there is frequently no slack water during daylight.

During the freshet a conventional ship can be brought up to Fraser Mills. An upstream passage presents no problem because a vessel proceeding at full speed against the current can be controlled but a downstream passage is hazardous and the pilots wait for the slowest ebb current.

The railway bridge restricts not only deep-sea vessels navigated by pilots but also tugs, barges and hulks.

Captain J. A. Taylor, a tugboat Master who has been towing barges and hulks through the bridge for many years and is thoroughly familiar with the problems it causes, explained to the Commission that, because the draws are so narrow, the main problem is to line the tow up before transit. The turbulence of the currents at the bridge makes it necessary to proceed only at slack water and in daylight. As much as twenty-four hours may be lost waiting for these conditions.

All difficulties are compounded by the freshet. As a result of accidents it has been found that during this period the only safe method of taking tows downriver through the bridge is to proceed downstream stern first stemming the current. (This operation is illustrated in a series of photographs, Ex. 10, in the Crown Zellerbach Building Materials Limited brief, Ex. 165). Above the bridge, the lead tug turns the tow which approaches the draw stern first, the towing tug maintaining control by heading into the current and dropping down at reduced speed. Additional tugs line up the tow, guide it into the draw and counter the prevailing set. When the bridge has been passed the tow is turned around and normal towing position resumed. The number of tugs required depends on the state of the freshet. The lead tug is usually of 1,200 or 1,600 horsepower.

96465—20½

(a) *History of the Railway Bridge*

As long ago as 1889, objections were raised to the proposed construction of the swing-span railway bridge on the grounds that it would be an obstacle to navigation: on March 18, 1889, the Ross MacLaren Mills (now Crown Zellerbach Building Materials Limited) objected to the planned bridge over the Fraser River because it would hinder their shipping.

Nevertheless, the bridge was built in 1904 and it is assumed that at that time the disadvantages were deemed to be outweighed by the advantages.

When the Pattullo Bridge was in the planning stages, the question of the swing-span railway bridge and its hazards to navigation were again fully studied. In 1934, a public hearing was held under the Navigable Waters Protection Act (1927 R.S.C., C.140, sec. 7) regarding the proposed construction of a highway bridge. The railway bridge then accommodated road traffic on a second level which since had proven inadequate for the increasing traffic. At that hearing, evidence was given by marine interests to the effect that the construction of the new bridge in the vicinity of the railway bridge would increase navigational difficulties. The debates are summed up in Order in Council P.C. 153, dated January 24, 1936, passed pursuant to the Act which approved the erection of the Pattullo Bridge (Ex. 164). The question of safe navigation was one of the main topics including the situation existing at the time, what it would be after the erection of the bridge and what remedial action could be taken.

It was fully recognized that the railway bridge was impeding navigation and it was also unanimously agreed that the new Pattullo highway bridge should not be erected 200 feet upstream from it, because the currents would make transits of the south draw of the railway bridge extremely hazardous. Therefore, this proposal was withdrawn.

It was conceded, however, that no difficulty would be experienced in passing downstream through the south draw, if the new highway bridge were built below the railway bridge and the senior pilot at the time expressed the opinion that it would be safe to take deep-sea vessels upriver through the south draw.

Notice was taken of the reversal of the rule of the road, effected by the By-laws of the New Westminster Harbour Commissioners.

Moreover, it was recognized that the continued existence of the railway bridge in the vicinity of the Pattullo Bridge would add to the navigational hazards of the area.

In 1936, the Chief Engineer of the Department of Public Works was faced with the problem of deciding between the disadvantages which the new bridge would cause by increasing navigational hazards and the advantages of meeting the demands of highway traffic crossing the Fraser River. On his recommendation, which was concurred in by his Minister and Deputy

Minister, the Government of the day, on January 24, 1936, approved the construction of the hihway bride (P.C. 153 dated Jan. 24, 1963 (Ex. 164)).

In order to cause the least possible obstruction to navigation it was decided to erect the new bridge downstream and as close as possible to the railway bridge (200 feet).

The Province of British Columbia was given two alternatives:

(a) to replace the swing span of the railway bridge with a vertical lift span of not less than 250 feet horizontal clearance and 145 feet vertical clearance;

(b) to transfer its title to the railway bridge to the Federal Minister of Public Works after removing the upper portion of the railway bridge used for highway traffic.

The latter alternative had been recommended at the public hearing on the ground that if the Federal Government owned the bridge it would be in a better position to deal with the whole situation because it already controlled Canadian National Railways, and was responsible by law for the safety of navigation.

In 1939, the Province adopted the second alternative, removed the upper portion of the bridge and transferred title to the Federal Government, and hence did not install the lift span. The Pattullo Bridge was erected by the Province in the approved location.

The Memorandum of Agreement for transfer of the Provincial title to the Federal Government is dated October 26, 1939 (Ex. 193). The Province thereby transferred to the Dominion all rights, title and interest in, and to, the old Fraser River bridge and its south approach and gave a right of way on the property which the railway traversed on the north approach.

By Clause 13 of the Agreement, a waiting period of ten years was introduced during which it was to be determined whether a lift span could actually be justified. During those ten years, however, the revenue derived from the use of the bridge by the railway companies would be kept in a Trust Fund to be applied to the cost of the alteration. It was further provided that, if at the end of that period the alteration had not been effected, the Dominion Government would retain in the Trust Fund only the sum necessary to constitute a reserve towards the maintenance of the bridge and the estimated cost of its ultimate removal, the balance to be returned to the Provincial Government. To date, the situation remains unchanged.

At the public hearings on the Pattullo Bridge it was stressed that the railway bridge was a navigational hazard and that plans should be made for its removal. Since then, larger ships have been using the river and the

original navigational dangers created by the bridge have greatly increased. During the Second World War, many 10,000-ton cargo ships with engines and bridge amidships were constructed but, since then, much larger ones have appeared, 90% with engines and bridge aft. According to the Vancouver Chamber of Shipping, almost all the deep-sea vessels visiting the British Columbia coast are of this type and it is predicted that shortly no other type will be built for bulk and tramp trade. To the Chamber's knowledge, no conventional ships are being built now for the tramp trade.

It was pointed out that local shipping agents have no control over the types of ships that are available to carry cargo.

Statistics obtained by the New Westminster Harbour Commissioners from an unnamed British Columbia operator indicated the trend to bridge aft ships: between 1958 and 1962, the number of ships on charter rose in number from 83 to 111, and of these the number of bridge aft ships were respectively 1 and 31, i.e., an increase from 1.2% to 27.9%.

The main reason for the trend to bridge aft ships is the elimination of a large section of the shaft line and shaft tunnel. This reduces building costs and increases cargo capacity. These vessels are also very practical for loading and discharging many types of bulk cargo, especially packaged lumber which can be handled and stowed expeditiously in the large square holds, and without loss of space. In a conventional ship, on the other hand, the lumber has to be loaded and unloaded piece by piece to take advantage of all available space. It is also easier to handle cargo in a bridge aft ship because the hatches are spaced side by side and the cargo gear and equipment are all on the one deck. This results in a true reduction in the loading and discharging task.

(b) *Accidents at the Railway Bridge*

There have been many mishaps but from 1934 to July 2, 1968, no casualty involving a vessel with a pilot on board (vide p. 370).

Pilot H. L. Gilley, who had a record of some 800 transits through the bridge, stated that he had never made one to his own satisfaction, although he has never had an accident. On one occasion, around 1947, he nearly had a mishap with a Park ship commanded by Captain J. E. Clayton, (the Port Manager at the time of the Commission's hearing). He was proceeding from Fraser Mills with a fairly strong downstream current and when about 1,500 feet east of the bridge he found that the ship did not appear to answer the helm, although it was hard over, and that he was heading for the protection work of the swing-span. It was ten seconds later before the ship answered the port helm. Thereupon he ordered "amidship" and "steady" but the ship suddenly headed for the south pier. He then ordered starboard helm and the ship zig-zagged through the draw. It

was later found that the ship was drawing a foot more water than was available due to shoaling at that spot, and consequently was not steering properly.

In May, 1957, the bridge aft vessel *Kavadoro,* length 521 feet 5 inches, beam 62 feet 6 inches, was proceeding downstream with an ebb tide during the freshet season. The pilot was unable to position the ship to transit the south draw properly, and the starboard counter scraped the protection work of the swing span.

In June, 1957, a 380-foot Fraser Mills barge, *en route* to Ocean Falls, crashed into the bridge and disrupted railway services. Nineteen tugs, including two powerful ocean-going tugs, were required to move the barge against the fast current (photograph and newspaper clipping, Ex. 187).

The Master of the M.V. *Vaasa Leader*, length 487 feet, beam 62 feet, engines and bridge aft, propelled by Stork diesel engines, single propeller, wrote a letter to the pilots on February 27, 1963, which the pilots filed as one of their exhibits in support of their argument against bridge aft vessels (Ex. 178). It reads in part:

> "In my opinion the passage through the swing-span is too dangerous with a ship of this type. The reasons are many but the restricted vision from the bridge aft is one of the greatest concern. We must also remember that passage through the span must be carried out under half to full power in order to have full steering power on the rudder. The smallest misunderstanding between the pilot, master, mate and quartermaster will have disastrous results under such circumstances. Also keeping in mind that coming down river the ship will be running with the tide and if the line-up for the passage is not successful at the first try, there is no returning and no stopping possible. In view of my experience I would refuse an order to let my present ship pass the span, only in case of emergency would such an order be considered and even then only with the assistance of two powerful tugs. I understand that such tugs are at the present moment not available at New Westminster."

As pointed out at the hearing, misunderstanding between the pilot and the officers which might lead to a disastrous result is not a problem that is peculiar to bridge aft ships and may occur in any ship.

The Master of the *Vaasa Leader* obviously referred to freshet time because otherwise he would not have departed with a strong current aft; therefore, the situation described in his letter is not a normal transit.

Between 1950 and 1965, there have been eighteen accidents at the railway bridge costing $96,638.05 in repairs to the bridge (Ex. 1171). There are no figures available to show cost of repairs to the vessels involved.

(c) *Safety Regulations*

Navigational hazards are of three kinds. The first group consists of temporary difficulties (such as traffic or adverse weather) on which the pilots must take action according to their best judgment. The second group is composed of semi-permanent hazards (such as silting) of which advice is pro-

mulgated by Notices to Mariners and orders issued by the Harbour Commissioners; these notices are cancelled as soon as the danger has been removed. The third group comprises absolute restrictions (such as the depth, width and meanders of the ship channel), which can not be altered, except by material changes, but which the pilots can readily appraise.

The absolute restrictions have always existed to a greater or lesser extent. For instance, when the channel was only fifteen feet deep, only shallow-draught vessels were allowed and when the channel was deepened vessels were still limited in draught to the new depth. At that time, most vessels could be accommodated but with the trend to larger and deeper ones this is now less often the case. Therefore, perforce vessels are again limited as to size and New Westminster is becoming inaccessible to a substantial percentage of normal ocean maritime traffic.

Other restrictions are caused by tides, currents or other regularly recurring events, such as the freshet—situations that are well known to the pilots. Knowledge of them is part of the pilotage service and, as their occurrence is ascertainable, pilots can find out in advance what course of action should be taken.

Since these are known and recurring conditions, it is in the interest of both safety and efficiency that they be carefully investigated and that all pilots be informed of the existing situation and what procedures should be followed. By studying these problems together the pilots benefit from their mutual experience and thus develop a more efficient pilotage service.

A great many of the existing safety regulations were drawn up as a result of the pilots' recommendations which were based upon such studies and have been in effect for many years, e.g., the regulation which prohibits transiting the railway bridge at night. Although the rules were not in writing at the time, they were known and agreed to by the pilots based on their expert knowledge by experience as to how, when, and where the navigation of a given type of vessel could safely be performed.

The regulations are modified from time to time as conditions improve or deteriorate, or as new experience is gained by the pilots and new methods developed. For instance, the restrictions on bridge aft ships came after the *Kavadoro* incident in May, 1957, but prior to that there were no restrictions on bridge aft vessels as such. At the time, the pilots as a group reviewed the circumstances, appraised the difficulties and came to the conclusion that it was not safe to transit the railway bridge with a vessel of that type longer than 375 feet.

Shortly before the Commission's public hearing in March, 1963, the pilots had changed their views against transiting the railway bridge with downbound vessels during the freshet. They came to the conclusion that it could be safely done even when the gauge at Mission City registers from ten to twenty feet, although neither flood current nor slack water prevail. The

transit was made at the height of the flood tide, taking what they called a calculated risk. This was not permitted when the safety regulations were first drawn up, but further experience and studies indicated that it could be done. However, before attempting the transit a full discussion was held between the pilots and the Master of the ship concerned. As will be seen later, the restrictions on bridge aft ships at the railway bridge have been drastically reduced since that time.

Until 1961, these safety regulations were not in writing. They had been drawn up and made effective without prior notice, thus causing the shipping interests embarrassment and some financial losses. In 1961, the Vancouver Chamber of Shipping asked the pilots to publish the regulations for the guidance of the operators so that they might plan correctly and avoid losses and delays arising from restrictions unknown to them.

A meeting, convened by the Pilotage Authority, was held on March 1, 1961, between them and the Vancouver Chamber of Shipping to study the pilotage rules followed by the pilots. Some minor changes were effected at the suggestion of the Chamber of Shipping. Following this meeting, the rules were put in writing by the pilots after having been unanimously approved by them at a special meeting convened for that purpose and were referred to the Authority through the Pilots' Committee. They were formally approved by the Pilotage Authority on March 28. On April 21, 1961, they were sent to the Vancouver Chamber of Shipping. These rules were to remain unchanged up to February 1966.

They read as follows (Ex. 160):

"NEW WESTMINSTER DISTRICT PILOTAGE
April, 1961

Suggested Recommendations for the Safe Conduct of Vessels Navigating the Fraser River

1. General
   (a) All navigation on the River is contingent on favourable tidal and weather conditions.
   (b) All drafts given are subject to change at any time due to silting of the channels.

2. Main River Channel
   (a) Maximum draft allowed shall be 28 feet 6 inches on a tide of at least 12 feet at Sandheads.
   (b) Outbound vessels with a draft of 24 feet or more shall not arrive at Steveston Cut on a falling tide.
   (c) Large vessels with bridge aft shall navigate the River in daylight only and it is recommended that they have their derricks down and be in best possible trim.
   (d) It is recommended that the length of ships which can safely navigate the River between Sandheads and New Westminster at the present time, be limited to 600 feet and that such ships navigate with best tidal conditions and as near as possible in daylight only.

3. Westminster Railway Bridge
   (a) Vessels shall traverse the Bridge in daylight only.
   (b) Vessels inbound shall proceed on ebb tide or slack water.
   (c) Vessels outbound shall proceed, as near as practical, on flood tide or slack water.
   (d) Maximum draft inbound to Fraser Mills shall be 21 feet (unofficially revised to 24 feet).
   (e) Maximum draft outbound from Fraser Mills shall be 24 feet (unofficially revised to 25 feet).
   (f) Maximum draft inbound to Gypsum Plant shall be 25 feet.
   (g) Maximum length of vessels through the Bridge shall be 525 feet.
   (h) Large vessels with bridge aft shall not be taken through the Bridge, Knot[3] type vessels excepted (375).
4. Pacific Coast Terminals
   (a) Ship proceeding into berth 1-A, port-side-to, past a ship at berth 1-B, shall have a maximum draft of 18 feet.
   (b) Ship proceeding into berth 1-B, port-side-to, past a ship at berth 1-C, shall have a maximum draft of 22 feet.
   (c) Ship leaving berth 1-A, starboard-side-to, past a ship at berth 1-B, shall have a maximum draft of 24 feet.
   (d) Ship leaving berth 1-B, starboard-side-to, past a ship at berth 1-C, shall have a maximum draft of 26 feet."

These were the safety regulations as they stood at the time of this Commission's public hearing in 1963. They gave rise to a hotly contested debate which is summed up later. For the modification that occurred after the public hearings and how these safety rules now stand, reference is made to pp. 300 and ff.

Although they are called recommendations, the word "shall" which is mandatory is used throughout (except in recommendation 2(d) regarding the main river channel). However, they are not mandatory because they are really pilots' decisions and not authority's decisions in a field that belongs exclusively to the pilots, i.e., opinions on the safe navigation of vessels in certain specific circumstances. Therefore, even though they were approved by the Pilotage Authority, they are not regulations. (Vide also p. 287). A pilot might not always abide by them and still not be subject to discipline, but if he were involved in an accident, the onus would be on him to establish that he did not take an unnecessary risk. Therefore, all the pilots are likely to adhere to them and Pilot Spier added that there would be chaos in their group if one or two of them decided not to abide by them. Even if one succeeded in doing so, he added, "I don't know what kind of welcome he would get from the committee". The pilots would be dissatisfied as a group because these recommendations were made for safety of navigation.

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[3] The expression "Knot-type size vessels" used in these so-called regulations refers to some thirty-six ships built in the U.S.A. during World War II bearing names with "knot" as their last syllable, such as *Acornknot, Brightknot* and *Ringknot.* All were similarly built with their bridge and engine room aft, overall length 339 feet, gross tonnage 3,805.

They are safety rules by which the pilots govern themselves. There is no doubt that these rules have a limiting effect on ocean-going traffic on the Fraser River. These ships constitute most, if not all, of the pilots' assignments and, hence, are the source of their earnings. The Masters of these ships are most likely to follow the pilots' advice.

Pilot Spier added that if he were requested to pilot a bridge aft ship through the railway bridge contrary to the safety recommendations, he would refuse. On the other hand, if the Master wished to proceed against his advice, he would ask to be relieved of all responsibility and would then give the Master all the assistance he could.

The shipping interests are greatly affected by these recommendations. A company entering the charter market is at a competitive disadvantage if it can not avail itself of current markets but must restrict chartering to specific types of vessels.

Most of the British Columbia charters are fixed on the London Exchange, (technically known as the Baltic Exchange), some on the New York Exchange and a few locally. Eighty-five to ninety-five per cent of the tramp steamers trading on the British Columbia coast are fixed on the Baltic Exchange. The usual procedure is for the prospective charterer in Vancouver to cable his broker on the Exchange, saying he wants a ship of a certain size for a certain date. Then the owners of the vessel, who also have their representatives on the Exchange, discuss the requirement with the agent and come to an agreement.

Nowadays, the vessels available are more and more of the bridge aft type, primarily because they carry more cargo. If restrictions are placed on the type of vessel, the whole process of the free competitive exchange of rates, offers and acceptance is upset and the prospective charterer may find himself at a distinct disadvantage if a certain type of vessel is excluded.

Some of these rules may be questionable, however, because they must be considered in relation to the skill of the individual pilot. An assignment that may be risky for a new pilot may be routine for one with experience. In this event, it might be questioned whether the safety margin decided by the group was not calculated on the basis of the ability of the less skilful pilot. A pilot's skill may also be increased by new methods and aids.

The opinion was expressed, therefore, that all parties concerned, i.e., shipping interests, industry and harbour authorities, should be given the opportunity to become acquainted with the situation and with the pilots' reasoning and also to bring additional expert evidence in order to enable the Pilotage Authority either to confirm the pilots' decision, or to increase the efficiency of the pilotage service by improving the pilots' knowledge, and thus their skill.

The Vancouver Chamber of Shipping complained that in the past they had not been consulted by the local Pilotage Authority about changes in the rules and, if changes were made with the knowledge of their sub-agents, the latter had been negligent in not informing their principals.

However, the Chamber admitted that one of the Pilotage Authority members, Mr. H. M. Craig, is also a member of the Chamber of Shipping. He attends all the meetings of the Chamber of Shipping and has access to the records of both organizations.

It appears from the evidence that the Vancouver Chamber of Shipping had not been consulted when the pilots decided not to take any vessel through the bridge at night, and also in 1957, after the *Kavadoro* incident, when they decided not to take bridge aft ships over 375 feet in length. By the time the Chamber was informed, these decisions were, to all intents and purposes, regulations.

The Chamber represents companies-and agents, and decisions of this nature taken without their knowledge are likely to embarrass their members on account of their commitments, contracts and ship schedules. One of their members had a bridge aft ship scheduled to go up the Fraser River to load at Fraser Mills (such arrangements are made weeks in advance) but the restrictions on this type of vessel cost that company a considerable sum of money because they had to alter their commitments, and finally they had to barge the lumber down.

The Chamber also pointed out that decisions of this sort, made without prior notice, are bound to upset the arrangements made for rotation of ports. This could be quite disastrous from the point of view of the operators and charterers. With the F.I.O. type of lumber charter, vessels have six to eight loading berths at various ports and work in circles following one another. When one vessel clears Chemainus, for instance, the next one moves in, and when the first one clears Nanaimo the next one follows, and so on. When such a circle is broken, it upsets the schedule not only of the operator but also all others engaged in the operation, with resultant extra costs.

The Vancouver Chamber of Shipping recommended that all interested parties should be consulted before any changes are made in the regulations.

The Chamber also complained that at the time of the Commission's hearing the shipping interests had no recourse and no way of appealing if the Pilotage Authority was unwilling to discuss changes.

It was acknowledged, however, that the operators had been able to hold discussions with the Pilotage Authority and that these had resulted in some amendments to the safety rules. When the Vancouver Chamber of Shipping protested in 1961, most of the rules established by the pilots had been in force for many years and the restrictions against bridge aft ships transiting the railway bridge had been in effect since the *Kavadoro* incident in 1957. As a result of the protest the Pilotage Authority convened a meeting of the

pilots and the shipping interests at which the reasons for the rules were studied. After some minor changes, the safety recommendations were put in writing, approved by the Authority and, for the first time, made available to the shipping authorities in written form.

Subsequently, the Vancouver Chamber of Shipping complained to the Harbour Master against some of the restrictions placed on traffic in the harbour by the pilots. The Harbour Master obtained a copy of the safety rules from the pilots and, after having studied them, wrote on May 15, 1961, to the Pilotage Authority conveying the complaints he had received from the Vancouver Chamber of Shipping. Their concern, he added, was shared by the Harbour Commissioners because in fact and practice the safety recommendations were mandatory with regard to navigation on the Fraser River, thus infringing the authority of the Harbour Commissioners, and because any such regulations, if needed, should be passed under the Harbour Commissioners' authority. The Harbour Master also pointed out that these recommendations were adversely affecting the harbour and, in order to study the situation, he requested that the reasons for the various recommendations be provided to the Harbour Authorities (Ex. 180). If the pilots' rules were regarded as regulations, they would be, in fact, contrary to subsec. 20 (a) of the New Westminster Harbour Commissioners Act. Whether they are regulations is not the point because the Pilotage Authority is also a regulation-making authority. The regulations of both the Harbour Commissioners and the Pilotage Authority are valid provided they are within the terms of the delegation of legislative powers. These rules, however, are not regulations because nowhere in the Canada Shipping Act is the Pilotage Authority empowered to deal by regulations with the question of safety. These rules are not a direct restriction on maritime traffic in the area: any vessel, whatever its size and draught, may proceed at any time, anywhere, even transit the bridge at freshet time. The sole effect of the safety rules is that if the pilots are consulted, they will advise against any navigation prohibited by, or recommended against in, the rules and, on the ground of safety, will decline to take the responsibility for such navigation. The real question is whether an effective recourse exists against abusively restrictive rules so made by the pilots.

The Harbour Master's letter resulted in a meeting between the Harbour Commissioners, the Pilotage Authority, the Pilots' Committee and the Harbour Master, which was held on January 16, 1962.

The Chairman of the Harbour Commissioners expressed their great concern over the steady decline in shipping to and from Fraser Mills and also over the restrictions placed on navigation in this area by the Pilotage Authority. The Chairman of the Pilotage Authority reminded the meeting that most of the safety regulations had been in effect for a long time and had been put in writing at the request of the Chamber of Shipping with

no thought of going over the head of the Harbour Commissioners whom they recognized as the administrative authority on the river. He pointed out the safety recommendations had been made on the basis of years of experience.

The pilots and the Pilotage Authority agreed to review all the safety recommendations in an effort to improve the situation. They also agreed that any proposed future regulations or changes would be submitted to the Harbour Commissioners before being made public.

On February 16, 1962, the Pilotage Authority wrote to the Harbour Commissioners that some of the problems raised at the meeting had been considered by the pilots and that some of the regulations were being modified. In view of the improved width of the channel between buoys 16 to 18, they were of the opinion that large bridge aft vessels could now safely navigate the river between Sand Heads and New Westminster during the hours of darkness, provided the derricks were lowered, the vessel was trimmed to allow for proper visibility and night navigation was left entirely at the discretion of the pilot. However, any deterioration in the improved conditions would necessitate daylight navigation only.

On April 17, 1962, the Secretary of the Pilotage District answered a query from the Harbour Master, dated March 22, concerning navigation with bridge aft ships through the railway bridge. He informed the Harbour Master that the Pilotage Authority had again carefully examined the problem with the pilots and that there was no change in the situation: "they can not justify taking a multi-million dollar vessel through the bridge knowing there is a great risk of accident", and he added:

> "The Commissioners have instructed me to state that they have complete confidence in the judgment and ability of the pilots, who are responsible for the safe navigation of all ships in the Fraser River, and see no need for an inquiry by the Department of Transport" (Ex. 186).

There were no further developments until the Port Manager gained the impression that Crown Zellerbach Building Materials Limited was planning to transport lumber to Vancouver by truck with a consequent loss of shipping to New Westminster. With this in mind he wrote to the pilots October 31, 1962, suggesting various methods whereby all types of ships could transit the railway bridge. He stated the Harbour Commissioners took such a serious view of the matter that they were prepared, without prejudice, to consider the merits of subsidizing either the pilotage service or an assisting tug service, or both, if necessary, to ensure service to Fraser Mills.

Representatives of the Department of Transport stated that this dispute is an internal matter between the pilots and the Pilotage Authority. When the restrictions on transiting the railway bridge were brought to the Department's attention by its Aids to Navigation, Marine Works Branch, the Pilotage Authority was asked to elucidate. A letter dated August 31,

1962, from the Secretary of the Pilotage Authority stated that the main reason for the decrease in the number of passages through the bridge in 1960 and 1961 could be directly attributed to the increased shipping of packaged lumber in large bridge aft ships; that the ships which had been piloted to Fraser Mills were conventional vessels 325 to 525 feet in length with the bridge amidships; and that the risk of accident was greater with larger vessels because when inbound they had to make an abrupt alteration to port immediately after clearing the bridge and then a reverse turn to starboard into the narrow Sapperton Channel. The letter continued:

> "About five years ago, when the large bridge aft vessels first appeared as lumber carriers from this coast, one was taken above the bridge. However, much difficulty was encountered. It was impossible to see properly to line up the narrow bridge opening or to manoeuvre the bends in the narrow channel and the vessel grazed the centre pier of the bridge. As a consequence, the pilots agreed that it was mandatory on them to recommend that these large bridge aft vessels should not be taken through the New Westminster Railway Bridge. Although there has been a big drop in the number of vessels going above the bridge, it is impossible to estimate the number that did not go because of the restriction on the bridge aft type."

At the time of the Commission's hearing this was the only information the Department had. No action was being taken because the Department did not consider the matter came within its jurisdiction.

The most contentious points in the Safety Regulations were created by two factors: the advent of bridge aft ships and the restrictions caused by the railway bridge. As stated before, the main difficulties a pilot has with bridge aft ships are (a) his vision is obscured, (b) he is not on the pivot point of the ship and (c) a conning position in the stern of a ship provides nothing aft which he can use as a guide.[4]

From the wheelhouse of a bridge aft ship visibility is comparable to that of a conventional ship and is greater from the wings because the bridge is generally built higher to contain the required services and accommodation. The Port Manager demonstrated this fact using the profiles of the bridge aft M.S. *Fenix* and the conventional M.S. *Brevik*. When the lines of sight from the navigating bridge deck extended to the ship's head were compared it was shown that, provided both ships were properly trimmed, the line of sight of the *Fenix* was lower and better for pilotage purposes. However, ships with the bridge amidships have better visibility because it is less obstructed by derricks and other structures.

Pilot H. L. Gilley stated that he could transit the bridge in a bridge aft ship even if his vision was partly obscured but he and the pilots as a group felt it was not in the best interests of the operators to make the attempt. He would hesitate because of the *Kavadoro* incident in 1957—a mishap which

[4] The pilots also found a forward conning position impractical when M.V. *Tiha*, 525 feet in length, 10,639 G.R.T., with a conning platform right forward on the forecastle head, went up through the railway bridge August 22, 1964, drawing 17 feet and came down August 24, drawing 19 feet (Ex. 1427 (m)) (Vide p. 292).

he understood because he had previously handled the same type of vessel. He agreed, however, that the pilots would not hesitate with a ship of the same length but with the bridge amidships because it made a great difference to them to have a hundred feet of deck aft of the wheelhouse. Pilot Gilley felt that he could transit the bridge successfully nine times out of ten in a bridge aft ship, but the tenth time there might be a bad accident which would not be in the interest of safe navigation.

This restriction on bridge aft ships is only a recommendation but Captain Gilley stated that if the Master of such a ship insisted on going up to Fraser Mills against his advice he would ask the Master to disembark him first. Captain Spier did not go that far, he stated that he would let the Master make the transit and would advise him what course to steer, what speed to proceed at and what manoeuvres to perform, but he would not take charge unless the Master signed a release. In no case, however, would he leave the ship if she was under way.

Captain John Clayton, the Port Manager and holder of a Master's foreign-going certificate who had had three years' experience of transiting the railway bridge in a forty-eight foot vessel and who had also made the passage with the aid of a pilot when he was Master of a Park ship, expressed the opinion that the railway bridge, despite all these hazards and dangers, is navigable with a bridge aft ship as well as with a conventional ship. He added that it is less hazardous to take a bridge aft ship up to Fraser Mills against a slight ebb tide than to bring a conventional ship out of Fraser Mills during freshet time with the Mission City gauge reading 20 feet and possibly a 6-knot following current. In his opinion, the transit is practical and it should be done during the nine months of the year when there is no freshet to contend with. Then the pilots have the assistance of slack water or a slight ebb tide going up or the reverse going down, i.e., slack water and slight flood tide. They could transit at a speed of 3 knots and if there were any collision the possibility of damage would be greatly reduced.

The Harbour Commissioners had written to various authorities "to obtain a cross-section of opinion" about "navigational conditions in confined waters of ships with the bridge and engine aft" and also to ascertain "if navigational restrictions are general to this class of vessel in other ports". (Ex. 194).

The Port Manager tabled as part of Exhibit 166 a reply dated December 28, 1961, from Sir R. Ropner and Co., (Management) Ltd., of Darlington, England, which stated that they were not aware of any port in the world other than New Westminster where pilots refused to take charge of bridge aft vessels, and experience had shown that objections to these ships had been overcome when Masters and pilots became accustomed to

them. Moreover, all new ships being built for their company had the navigation bridge and the engine room aft for the sake of economy and expediency.

The Harbour Commissioners' view of the railway bridge was expressed in their letter of November 16, 1960, to the Pilots' Committee (Ex. 177).

> "Throughout the years many accidents have occurred at this bridge, several of them being extremely costly. The increasing size and number of ships, hulks and scows using the bridge in recent years, multiplies the risk of a serious accident. It is safe to say that, under present marine traffic conditions, the bridge can be considered a menace to navigation, with an extremely restrictive influence on the development of the industrial potential upstream from this bridge".

The Port Manager went on to say that the Harbour Commissioners were preparing a brief to the Federal Government requesting the replacement of the existing swing span with a lift span.

In his reply dated January 25, 1961, the President of the Pilots' Committee stated that he concurred in the Commissioners' remarks and referred the Harbour Master to the hearings held at the time of the construction of the Pattullo Bridge reminding him that at the time the pilots' approval of these plans was given only on the assurance that the swing span would be removed.

Three types of remedial action were proposed:

(a) the erection of a control bridge amidships in bridge aft ships;

(b) new methods of pilotage for bridge aft ships:
  (i) some pilots to specialize in transiting the bridge;
  (ii) a proper lookout at the bow, possibly a second pilot;
  (iii) the use of tugs either to aid ships, or to tow them as dead ships;

(c) improving river facilities by:
  (i) reducing City Bank;
  (ii) adding further aids to navigation;
  (iii) illuminating the area to allow night transits;
  (iv) erecting a system of pile clusters to funnel ships into the narrow bridge openings;
  (v) replacing the swing span of the bridge by a lift span.

The pilots were of the opinion that the only way to alleviate the special restrictions put on a bridge aft ship (short of the removal of the swing span of the railway bridge) was to convert these ships into conventional ones for pilotage purposes by the erection of a skeleton control bridge amidships that could be used for transiting the railway bridge. Thus, the pilot would be in a conventional location where his vision would not be obscured and where he would be on the pivot point of the ship.

On August 2, 1960, the Ropner Shipping Company Ltd. wrote to the Pilotage Authority on the subject of the bridge aft vessel *Wandby* stating they were prepared to construct a bridge amidships by extending the mast construction and requesting advice from the pilots on their requirements in respect of the proposed addition. This letter was turned over to the Pilots' Committee which replied to it on August 15, stating their requirements and suggestions including the reminder, "that as long as the New Westminster Railway Bridge remains in its present condition, current and tidal conditions being as they are, the pilots have set a maximum length of 525 feet, breadth 72 feet on ships that they feel can pass safely through the New Westminster Railway Bridge" (Ex. 174).

No reply was received from the Company other than an acknowledgement with the remarks that the requirements were considered to be extremely onerous. The pilots' recommendations were not implemented as is proved by the many voyages the ship has since made to New Westminster (Ex. 160).

The pilots had several discussions in their office with the Master of the *Fenix* about plans for the ship *Tiha* that was being built in Europe to Fraser Mills specifications. When they were asked what would be necessary for the ship to transit the railway bridge they suggested a skeleton bridge amidships. The pilots were under the impression that the owners had agreed, that the ship had been built and that she was on her way to New Westminster.

On the subject of the *Tiha* the Secretary of the Pilotage Authority in a letter dated December 29, 1964, reported (Ex. 1427(m)):

> "The vessel which was under construction to the Fraser Mills specifications was completed and launched in 1963 as the *Tiha,* 525 feet in length and 10,639 gross tons. However, during construction plans were changed and instead of a skeleton bridge amidships, a conning platform was constructed right forward on the focsle head.
>
> The *Tiha* arrived in New Westminster and proceeded through the railway bridge to Fraser Mills on August 22, 1964, with a draught of 17 feet and departed on August 24 with a draught of 19 feet.
>
> The conning position forward was found to be altogether impractical for piloting. Also, we were advised that it had suffered severe damage from heavy seas and it is understood that the owners are now considering the original plan of a skeleton bridge amidships".

In answer to a query from this Commission the Pilotage Authority's Secretary replied April 26, 1968, as follows (Ex. 160):

> "With regards the *Tiha;* no skeleton bridge was constructed amidships, the conning platform remaining on the focsle head. *Tiha* was up through the bridge again in June, 1965 and in April, 1966. The pilots still found the forward position impractical and experimented with the use of two pilots, one on the focsle platform and one on the regular bridge, and using walkie-talkie radios."

The Port Manager expressed the view that familiarization with bridge aft ships would enable the pilots to take them through the railway bridge but the pilots disagreed on the ground that no amount of experience would alter the fact that transiting the bridge with large bridge aft ships is dangerous.

The pilots have studied and dismissed the suggestion that a proper lookout be stationed in the bow. They contended this lookout would have to be another pilot and that the rapidity with which the various manoeuvres had to be carried out would make such an operation impractical. They pointed out that taking the 736 foot *Argyll* through the Second Narrows bridge in Vancouver which was advanced as a proof of the feasibility of transiting the railway bridge was not comparable because the *Argyll* is not a bridge aft ship and the problem was not one of piloting but of completing a 180 degree turn and berthing the ship starboard side to. In addition, the Vancouver pilots had the advantage of slack water and the assistance of five tugs.

Captain Walter Allan Gosse, who had the *Argyll* assignment, stated that the New Westminster railway bridge can not be compared with the Second Narrows—it is an altogether different problem. He had been through the railway bridge many times with other pilots. The Second Narrows bridge has now an opening of 271 feet. The old bridge had been knocked down three times because it was outside the channel and there were cross tidal currents.

The pilots also considered impractical the use of tugs either to assist vessels make the transit or to tow them through as dead ships. It was not a question of the availability of tugs. In 1963, there were three tugs at all times at New Westminster, one of about 650 to 700 h.p. and two others with less power. There are much more powerful tugs in Vancouver which could be made available if necessary.

In the opinion of Captain R. W. Draney—42 years' sea experience, first command in 1929, 15 years in command of Fraser River tugboats—large vessels could easily be shifted anywhere as dead ships provided the right type of tug was available for the right type of ship. He had had experience in very large ships and in many places in Europe where ships go through canals and other restricted areas and also in the Panama Canal, but he recognized that these were not analogous to the transit of the railway bridge. Although he had never taken a deep sea ship through the bridge, he has been transiting hulks since 1953, i.e., barges 320 to 342 feet long, beam 40 feet, draught up to 26 feet, manned and steered, because otherwise they would not handle in close quarters, and had made 200 to 250 passages without accident.

The Port Manager, however, felt it would be unreasonable to tow vessels through the bridge as dead ships because very powerful tugs would be required and also because the available power of the vessels was being wasted. He favoured using tugs to assist vessels make the passage and stated that, if the pilots agreed to this operation, tugs of sufficient power could be obtained. He added that most ships can steer readily at a speed of 4 to 5 knots and even as low as 3 to 4. One of the harbour tugs has 500 horsepower and is capable of 9½ knots; thus it still has a margin of speed.

He recognized that this reasoning would not apply to the high velocity current of the freshet.

Captain J. W. Kavanagh, Harbour Master at New Westminster with 14 years experience at sea, stated that he has been in fifty to sixty ports in the world where tugs are used to assist vessels navigate in restricted areas, *inter alia,* in England from Gravesend to London. At Gravesend there is a changeover from sea pilots to river pilots and two tugs are used, one of which is made fast on a line ahead and is used for steering around sharp bends or coming to the aid of the ship should she get into difficulty due to the loss of engines or steering power. The other tug stands by. In other ports they are used in a similar manner but sometimes for a variety of different purposes. Tugs generally have a locking hook with a member of the crew standing by so that if a dangerous situation arises the lock is released and the tug is freed. This is standard procedure. It would be dangerous for the ship under tow if the head tug were suddenly freed: for this reason the second tug runs off the bow. Several times in London Captain Kavanagh had seen the second tug take over and keep the ship off a pier despite the fact that there was very little time available: these tug Masters have to be experts.

However, the Fraser River pilots are firmly opposed to this procedure. Pilot Ingalls admits that providing he has ideal conditions, i.e., slack water during daylight hours with no wind and all the rest of the conditions correct, the bridge could be transited with the use of tugs. But, he added, he, as a pilot, would not go against the safety rules on his own.

The pilots use tugs when berthing ships and give orders to the tug Masters either through a "walkie-talkie" or by signal. But Captain Gilley pointed out that going through the bridge is a completely different problem. When berthing, the ship is practically stopped, and the pilot has time to give orders. But coming down through the bridge span on an ebb tide with a tug secured ahead and the ship making a possible speed of 14 knots over the ground, while the tug makes about ten, presents the real danger of overrunning the tug. Also in a bridge aft ship the pilot would be unable to see the tug. He agreed that a tug could keep ahead on a flood tide but pointed out that there are many occasions when there is no slack water in the daytime. Captain Gilley was not conversant with the use of tugs on the Thames River or elsewhere.

In the opinion of the pilots a tug ahead would be more of a hindrance than help to them in taking a large bridge aft ship through the railway bridge because the time and speed of the rapid transit does not permit them to control the tug. While a vessel can be brought up river under most conditions, it may be necessary to wait several days, especially during strong freshets, for suitable conditions to bring one down river, thus causing financial loss and difficult operating problems for the operators.

Although the pilots normally employ tugs for berthing and unberthing, their few experiences of their use in river pilotage have not been very successful. About 1948 there was a near stranding off Tilbury Island when Pilot Gilley was piloting a partially loaded conventional ship drawing twenty feet from Pacific Coast Terminals to sea (apparently during freshet time) with the assistance of two tugs. One tug of 1,300 horsepower was secured alongside while the other tug of 650 horsepower was placed ahead. Although the channel bend is gradual off Tilbury Island, the lead tug fell off to one side and could not recover, and her tow rope had to be cut to save her from capsizing. On another occasion Pilot Gilley moved a dead ship from one berth to another with the aid of tugs, but without mishap.

On July 1, 1957, Pilot Ingalls used two tugs at the bow to assist the Norwegian *Thorsisle*, (who had engine trouble) through the bridge draw to Fraser Mills during a moderate ebb tide. Her length was 387 feet 6 ins., beam 53 feet 6 ins., and she drew 10 feet 7 inches forward and 14 feet 3 inches aft (Ex. 1525(d)). On reaching the bridge the ship's engines stopped. The tugs towed her through the draw but were unable to prevent her setting toward the piers. Fortunately, at that moment the engines started again and with their help the piers were cleared and the ship managed "to stagger" up to Fraser Mills. However, it was admitted that this was not a meaningful example, as the tugs employed lacked sufficient power.

Despite these incidents, the evidence has disclosed no valid reason why proper use of good tugboats would not be just as important on the Fraser River as any other commercial river, such as the Thames, where they are extensively used.

Navigational aids, such as beacon lights and range lights, were not considered by the pilots of assistance in conducting a bridge aft ship through the bridge draw. They maintained that the difficulty lies not so much in lining up the ship in a good position, but more in being in a good controlling position on board with ability to see well ahead, which is not the case in this type of ship.

The Port Manager suggested that, with proper illumination, ships, both conventional and otherwise, could be taken through the bridge at night. He proposed a system of adequate leading lights, other lights arranged around the base of the piers in such a way as to avoid glare, a series of lights up Sapperton Channel past Middle Ground Buoy and a light at Fraser Mills. The pilots were against this proposal claiming that lights would decrease visibility, that the shadows would prevent them seeing ahead and that their vision would be impaired for a minute and a half to two minutes after passing the bridge. They pointed out that berthing a ship at night is a different operation, because the ship has little or no headway. They agreed that they do navigate through lighted areas in the river which temporarily blind them but in these cases they soon recover their vision and the ship continues on a steady course, a situation that does not exist at the railway bridge.

To the suggestion that the west end of City Bank might be removed, Pilot Gilley replied that it would not simplify the bridge transit but would make it easier to navigate into Sapperton Channel. He pointed out that the main problem is passing through a narrow opening when proceeding downstream at increased speed caused by an ebb current. With a large ship there is no margin for error even when transiting the bridge upstream: if the bow of a 500-foot vessel falls off one degree, the stern will swing 55 feet and hit the bridge. This applies to a conventional ship as well as to bridge aft ships but he repeated that in the former case, since the pilot is stationed amidships, he can readily see before it is too late whether the ship is falling off her course. Hence, while dredging the tip of City Bank would provide more room to manoeuvre above the bridge, it would not alter the width of the draw and permit the passage of larger ships.

There was general agreement that the only real solutions would be either to remove the bridge or to replace the swing span with a lift span. The present railway bridge will always be a menace to navigation—even if safer methods of transiting could be devised—and the danger will grow as vessels increase in size. If the swing span and centre pier were removed, the existing bridge safety regulations would no longer be necessary and tugs and barges also could move downstream normally without resorting to the dangerous, complicated procedure of transiting stern first.

Because the entrance is so narrow, the pilots have to wait for the right tide before transiting. If the centre pier were removed, the only limitation would be a ship's draught and there would be no restriction for tide or current, except possibly for very large ships at the height of the freshet when the currents are very strong. This restriction would be for brief periods only, since the record shows that the gauge at Mission City has exceeded 20 feet only three or four times since 1948. If Sapperton Channel were dredged as well, there would be no special limitation for that part of the river.

(d) *Submission by Crown Zellerbach Building Materials Limited*

Crown Zellerbach Building Materials Limited (p. 259) is located at Fraser Mills and trades in all deep-sea markets through Seaboard Lumber Sales Company, a cooperative selling agency serving all maritime markets.

The Company's method of transportation is either by rail, truck or vessel, loading directly from wharves to vessels or indirectly through transshipments from scows.

A large percentage of their foreign shipments are "packaged lumber". Their experience with this method started around 1960 on the Atlantic Coast and by 1962 all their mills were shipping packaged lumber exclusively.

The Safety Regulations have handicapped the Company to some extent because they restrict the markets in which it can compete. The cost of delivering Fraser Mills lumber to overseas markets is increased because some vessels are effectively prevented from coming up through the bridge.

In order to meet the Safety Regulations and the pilots' restrictions, the Company always tries to obtain vessels that are not bridge aft but these are increasingly difficult to find. Hence, more and more the Company is allotted ships that are restricted from going to Fraser Mills with the result that lumber must be transported out by scows, thus increasing delivery costs to foreign markets. Between 1951 and 1960 inclusive, direct loading at Fraser Mills averaged 90.7% of its shipments. This percentage has steadily decreased from 47.7% in 1962 to 23.4% in 1964 (Ex. 165, Appendix 1 and Ex. 165 B). Despite the strikes in 1958 and 1959, most of their shipments were direct loading in 79 and 73 ships respectively, while in 1962 the number fell to 33 ships, in 1964 to 22 ships and in 1965 to 14 ships, accounting for only 18% of their total shipments. During the fourteen year period 1951-1964 inclusive, the Company's total exports have averaged about 66,000 M.F.B.M., annually.

The Company would prefer not to transport lumber by scow to Vancouver because this adds to operating costs.

The change from direct loading at Fraser Mills to scowing for loading in New Westminster or Vancouver is not, however, solely due to the restriction of the railway bridge but also to a number of other factors:

(a) allowable draught;

(b) some vessels can not transit the railway bridge because of their size or construction (a few years ago the average size of vessel allocated to the Company was 400 feet, in 1962 it had increased to 500 feet);

(c) ships may have to wait up to 14 hours for a suitable tide to pass the bridge;

(d) shipping agents often find it more convenient to have lumber brought to the ship than vice versa;

(e) on occasion the exporters find scowing to New Westminster more economical;

(f) cargo arrangement—particularly topping and last loading. Of the ships which carried the Company's lumber in 1961 only two could have been completely loaded at Fraser Mills and still meet the maximum allowable outbound draught of 25 feet.

The extra cost to scow lumber to Vancouver is between $2 and $3.30 per thousand feet board measure. There is not much difference whether lumber is scowed to New Westminster or to Vancouver; the determining factor is the volume that is being scowed. The Company tries to have at least 300,000 feet for any one loading since this quantity will give approximately a day's work to the longshoremen crew at Fraser Mills. The question to be decided is whether it is more economical to bring a ship up to Fraser Mills to load 300,000 feet B.M., as the minimum quantity. In 1962, at

Vancouver, bridge aft ships *World Japonica* loaded over 1,000,000 board feet of Company lumber, *West River* 1,375,000, *Thorsodd* 761,000, *Pelagos* 878,000 and *San Juan Exporter* 1,500,000. It would have been more economical to load them at Fraser Mills than at Vancouver as was actually done (Ex. 165).

The following statistics appear in Exhibits 165, 165B and 189:

(*a*) *Bridge aft ships that called at Fraser Mills*

1961—3 out of 52 vessels
max. draught 24'10" length 385'10", date Jan. 27
max. draught 19'6¼" length 324'0", date March 24
max. draught 19'9" length 310'6", date Oct. 26
1962—none out of 32 vessels
1963—3 out of 30 vessels
max. draught 19'6¼" length 324', date April 24
max. draught 17'1" length 315', date March 25
max. draught 17'1" length 315', date Aug. 7
1964—2 out of 22 vessels
max. draught 19'16¼" length 324', date Feb. 4
max. draught 28'4" length 524'11", date Aug. 25
1965—2 out of 14 vessels
max. draught 20'0" length 307'5", date Feb. 5
max. draught 28'4" length 524'11", date June 14
1966—1 out of 5 vessels
max. draught 28'6" length 525', date July 4

(*b*) *Bridge aft ships that called at New Westminster*

1961—8 out of 74 vessels
1962—7 out of 45 vessels
1963—4 out of 63 vessels
1964—5 out of 60 vessels
1965—6 out of 48 vessels
1966—22 out of 43 vessels

Note: Only two of all the non-bridge aft ships exceeded the 525 feet maximum length permissible for passing the bridge. In most cases, however, their maximum draught exceed the 24-25 foot limit; therefore, they could not have proceeded to Fraser Mills if their call was for topping off cargo or for a load that would increase their draught above 25 feet.

(*c*) *Bridge aft ships that called at Vancouver*

1961—10 out of 20 vessels
1962—21 out of 36 vessels
1963—41 out of 44 vessels (all in 1963 except one [496'] over 500' in length).
1964—41 out of 52 vessels
1965—50 out of 69 vessels
1966—40 out of 56 vessels

These statistics confirm that the trend is to larger ships and bridge aft ships.

However, the bridge is not the only factor. Nine ships shown on page 4 of Exhibit 189 are conventional ships which could have loaded at Fraser Mills instead of being loaded at Vancouver; in six cases the cargo was insufficient, i.e., less than 300,000 feet. On the other hand, ships occasionally go to Fraser Mills to load comparatively small quantities of special cargo because other mills in the vicinity may also wish to load there from scows.

For cargoes of over 1,000,000 feet, the Company would bring almost all ships into Fraser Mills, if at all possible, in order to avoid scowing expenses. But in each case there must be a separate calculation depending on the quantity, the cost of the ship to the exporter, the terms of the charter and a number of other factors. The Company added that it is almost impossible to generalize on the comparative economics of loading at Vancouver and loading at Fraser Mills.

In Exhibit 165B, the Company estimated that because of the restrictions imposed by the railway bridge, the extra cost of scowing from Fraser Mills to New Westminster and Vancouver amounted to $259,000 for the years 1961 to 1963 inclusive, and to $85,205 for 1964, after deducting one third of the total cost as an allowance for what would have been scowed out in any event because of quantity, topping, special cargo, etc. In addition, the Company pointed out that in 1964 its two deep-sea berths at Fraser Mills were used only 7% of the time.

(e) *Developments Since the Commission's Public Hearings*

The pilots' position regarding bridge aft vessels and navigation through the New Westminster bridge has been substantially modified since 1961, thereby improving to a large extent the position of Crown Zellerbach Building Materials Limited and other industries situated upstream from the bridge. In an answer to a query from this Commission regarding the present stand on the question of bridge aft ships, the Secretary of the New Westminster Pilotage Authority, on April 26, 1968 (Ex. 160) sums up the progress of the changes and the present situation as follows:

> "During the period since the Commission's hearings in this district, the subject of bridge-aft vessels and navigation through the Westminster Railway bridge, has been under almost constant discussion and review, with the pilots under pressure from Crown Zellerbach Co., Seaboard Shipping Co., the Harbour Board, Etc. The number and size of the bridge-aft vessels was constantly increasing. Seaboard Shipping was chartering this type of vessel almost exclusively and as a consequence virtually no ships were proceeding to Crown Zellerbach dock at Fraser Mills. Finally, after a series of meetings, the pilots advised the Commissioners that they wished to make a trial passage to Fraser Mills with a bridge-aft ship.
>
> The pilots stated that the new portable radio-telephone equipment recently supplied by the D.O.T., was proving very efficient, enabling them to be in constant contact with pilots on other vessels, assisting tugs, other traffic, the patrol boat, etc. The Harbour Patrol boat is proving very effective, and the desire and co-operation of all concerned, they felt, warranted the action.

For this transit, two pilots would be used, it would be made during best tidal and current conditions, the vessel would be in best possible trim for maximum visibility, two tugs would be in attendance, and the patrol boat would keep traffic clear one mile above and below the bridge and would act as radio contact between the pilots and the bridge operator. Therefore, with the approval of the Commissioners, the British vessel "Ocean Transport", a vessel 463 feet in length, was taken up through the bridge on December 18, 1966 and out on December 23, 1966.

With the successful transit of the "Ocean Transport", it was agreed that bridge-aft vessels of up to 475 feet in length should navigate the bridge. In February, 1967, Crown Zellerbach requested that the M.V. "Wandby", 517 feet in length be taken to their dock. Again, after serious consideration and taking into account the experience gained and the cooperation given during the transit of the "Ocean Transport", the pilots recommended and the Commissioners approved the transit through the bridge of the "Wandby" on March 23, 1967.

Following the safe passage in and out of the "Wandby", the pilots recommended that the length for transit of the bridge be increased to 525 feet. During the year 1967 ten vessels with bridge-aft in and out through the bridge. Also, after July the services of the second pilot were dispensed with.

Since receipt of your letter we have received further recommendations from the pilots. A copy of the Commissioners letter regarding this is attached. (Vide amendments to safety rules April 1968, pp. 383-384).

Conditions have changed considerably since the hearings in 1963. The supplying of the radios by the D.O.T., the putting into service of an efficient patrol boat by the Harbour Board, the improvement in the construction of the bridge-aft vessels since the first that came into the river, the full-co-operation of all concerned have helped to make these improvements possible. The pilots still feel that navigation through the bridge is hazardous and that the area will not reach it's full potential until the bridge is rebuilt or removed."

The Secretary to the Pilotage Authority also reported that since 1966 the restrictions in the safety rules have been gradually eased in other respects on account of gradual improvements in the depth of water, widening of the channel in the bends and the complete reorganization of aids to navigation in 1967.

As of May 1st, 1968, the safety rules had been amended three times since April, 1961: Feb., 1966, March, 1967, and April, 1968. Each modification consisted of a further relaxation of the restrictions.

(i) *The main changes in the 1966 amendments were (Ex. 160):*

(*a*) *Main River Channel*

(i) The maximum permissible draught was raised by one foot (29 feet 6 ins.).

(ii) The absolute restriction on outbound vessels with a draft of 24 feet or more at Steveston Cut on a falling tide was abrogated and replaced by a requirement that the pilot be consulted.

(iii) The absolute restriction on night navigation of bridge aft ships was abrogated.

(iv) The maximum permissible length of a ship was increased by 50 feet (650 feet), with the proviso that the draught of ships exceeding 600 feet in length should not exceed 24 feet.

(*b*) *Westminster Railway Bridge*

(i) The maximum draught inward to Fraser Mills was officially increased by 3 feet (24 feet) and the maximum draught outbound by one foot (25 feet).

(ii) A maximum beam of 72 feet was added to the maximum permissible length of 525 feet (vide pilots' letter to Ropner Shipping Co. Ltd., Aug. 2, 1960, p. 370).

(ii) *The changes in the 1967 amendments were:*

(*a*) *Main River Channel*

(i) The maximum draught was increased by half a foot (30 feet).

(ii) The requirement to consult the pilots on draught at low tide in the Steveston Cut applied only to ships of 26 feet draught or over.

(iii) The maximum length was again further increased by 50 feet (700 feet) and the maximum draught for vessels over 600 feet was raised by one foot (25 feet).

(*b*) *Westminster Railway Bridge*

(i) The maximum draught downbound from Fraser Mills was increased by two feet (27 feet).

(ii) The special length limitation on bridge aft ships (375 feet) was dropped.

(*c*) *Pacific Coast Terminals*

(i) The maximum draught limitations were increased by one or two feet.

(iii) *The changes in 1968 were:*

(*a*) *Main River Channel*

(i) The maximum draught was increased by one foot (31 feet).

(ii) The maximum length was increased by 50 feet (750 feet) and the maximum draught of 31 feet made applicable to vessels up to 650 feet; for those over 650 feet the draught was increased by one foot (26 feet).

(*b*) *Westminster Railway Bridge*

(i) The maximum draught inbound to Fraser Mills was raised by one foot (25 feet).

(ii) The maximum draught downbound from Fraser Mills was also raised by one foot (28 feet).

(iii) The maximum length and beam of vessels of all types were increased by 50 feet (575 feet), and 3 feet (75 feet) with the proviso that individual consideration was to be given to vessels of 575 to 625 feet in length.

Bridge Transit Statistics—Ship transits of the railway bridge have called for an additional charge only since July 28, 1960 (P.C. 1960-1035). Thus, it can be ascertained how many times ships were piloted through the bridge during those years.

1960/61	188	(from July 28, 1960, to March 31, 1961.)
1961	123	
1962	90	
1963	73	
1964	74	
1965	50	
1966	38	
1967	60	

96465—21½

(f) *Replacement of Swing Span by Lift Span*

As previously stated, the Government of the Province of British Columbia elected to surrender its title to the bridge to the Federal Government in 1939 and neither during the ten-year waiting period, nor afterwards, were any alterations made to the bridge. The proposed lift span was not installed because the Department of Public Works, up to the time of the Commission's hearing, adopted the view that, when all the related factors were taken into consideration, its installation could not be justified.

Agreements concerning the use of the bridge by the various railway companies have been renewed from time to time:

(a) An agreement with the Canadian Northern Pacific Railway Commany and the Canadian Northern Railway Company, dated August 6, 1940, is still in effect, having been renewed in 1950 for a period of ten years and again on December 13, 1960, for a further period of one year commencing December 1st, 1959, and thenceforth from year to year until terminated by mutual consent (Ex. 1171).[5]

(b) An agreement with the British Columbia Electric Railway Company, Limited, (now owned by the British Columbia Government) dated December 1, 1939, is also still in effect after being renewed in 1953, 1955 and 1960, the last renewal for a period of one year commencing December 1st, 1959, and thenceforth from year to year until terminated by mutual consent.

(c) An agreement with the Great Northern Railway Company (of the United States), granting it the right to use the Fraser River railway bridge, dated August 1st, 1944, and renewed in 1950 and 1960, the latter renewal for a period of one year commencing December 1st, 1959, and thenceforth from year to year until terminated by mutual consent.

The revenues derived from the operation of the bridge come from these three railway companies. There are also miscellaneous receipts obtained from various claims resulting from damages to the bridge.

The maintenance and operation costs approximately balance the revenues. The Department of Public Works considers the average annual reserve in the trust account a necessary standing reserve to meet possible abnormal repairs and maintenance costs, since the bridge was constructed over sixty years ago.

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[5] The Canadian National Railway is now the national railway company, having amalgamated the Canadian Northern Pacific Railway Company and the Canadian Northern Railway Company.

Inspections are carried out regularly by Canadian National Railway engineers and by B.C. Government Department of Railway engineers. A survey made in 1958 by Dominion Bridge Company Limited (Pacific Division) indicated that the bridge was in excellent structural condition.

At the Commission's hearings, Colonel William George Swan, Civil Engineer, who was the engineer in charge of building the Pattullo Bridge, and who inspected the railway bridge on one or two occasions and accompanied the engineers of Dominion Bridge Company Limited in 1958, estimated a remaining life span of 40 years for the bridge structure with normal maintenance and repairs. He supported his opinion by pointing out that when the bridge was erected in 1903 it was built to carry a two-lane road in addition to rail traffic. The highway lanes have been removed and the railway traffic has become lighter—not in the number of cars but in the weight of locomotive equipment. Therefore, the stress on the bridge is much less than it was originally designed for. These factors account for its longer than normal life span.

On June 1st, 1946, prior to the expiration of the ten-year waiting period, the Department of Public Works sought the opinion of a consulting engineer, Dr. P .L. Pratley,

> "... whether the construction of a modern lift span in the existing bridge is practicable in this location and justifiable in the light of the age and suitability of the present structure to accommodate the present and anticipated future traffic".

In his report, dated August, 1947, Dr. Pratley rejected the proposal as:

(a) uneconomical in terms of capacity, conditions and probable future life of the steel and masonry structures;

(b) undesirable due to the river conditions, i.e., nature of bottom, shift of sand, etc.;

(c) impractical in consideration of the type, location and extent of the new construction likely to be needed.

He divided this question in two parts:

(i) Would it be economically justifiable to consider rebuilding the movable span of the New Westminster bridge, having regard to the rest of the structure?

(ii) Would it be practical to rebuild it as a vertical lift span on the same longitudinal axis as the existing bridge?

The gist of his report is as follows. The piers date back to the period 1901-1903, the spans were designed in 1901 for one single track railway and for a 16-foot roadway located above the railway. The roadway was removed in 1939. The Canadian National Railways, the principal user, made an exhaustive inspection in 1942-43 to determine *inter alia,* what locomotives could be safely accommodated and what their speed restrictions should be. This examination led to a programme of repairs carried out in 1943.

During Dr. Pratley's inspection in May, 1947, he found the bridge in good general condition and the swing span functioning very well. He considered that a proper maintenance policy combined with full enforcement of the load capacity restrictions would ensure the present capacity for many years to come, barring accidents.

With regard to the question of obsolescence he thought that the demand for heavier power may become insistent within a period of about fifteen years (from the date of his report) judging by developments in other industrial and seaport centres where bridges of approximately the same vintage call, or have called, for similar restrictions.

> "I also feel that replacement at the end of this period will take the form of a new structure at a better site, probably upstream, as was considered some twenty years ago when my firm studied the possibility of taking the Canadian National across the Fraser River, via Douglas Island and entering Vancouver more directly. This total life period of about sixty years would probably be above the average for E40 structures built about the turn of the century.
>
> From the point of view of railway capacity, I am therefore prepared to assume that the steel spans of the existing bridge are likely to prove an acceptable, though not necessarily adequate, facility for a further 15 or 20 years. This is not a long enough prospect to justify the building of an entirely new and superior lift span which would be much more costly to construct as a betterment to the present traffic-carrying structure, than as part of a completely new bridge on an unoccupied site.
>
> At freshet seasons, the river is heavily laden with silt, and any circumstance operating to reduce local velocities is also likely to induce the deposition of the silt burden and the consequent raising of the river bed. On the other hand, any circumstance operating to increase the local velocities is likely to induce scouring of the bed unless positive preventive steps have been taken in advance.
>
> Also the bridge piers themselves have had their influence on river flow, and the current in turn has attacked the stability of the sand under and adjacent to the piers. Thousands of tons of heavy stone rip-rap have been placed around these piers during the 45 years which have elapsed since their construction and this stone has sunk and slipped and spread over the river bottom so that its present disposition is quite impossible to estimate or describe.
>
> All these features suggest to me that the actual conditions present a sufficient problem and that no work or construction should be lightly undertaken in the neighbourhood of these bridge piers which might introduce further and unpredictable changes in river conditions."

He went on to say that since their construction the Pattullo Bridge piers have created an obstruction which has changed and increased the current and induced silting at certain places. After studying the various problems involved in building a lift span over the swing span while maintaining the traffic, he concluded that it would be impracticable to build the necessary supports for the proposed vertical lift span on the line of the present bridge. He came to the conclusion that dealing respectively with obsolescence, river conditions and construction problems, the proposal to replace the existing swing span by a vertical lift span on the same center line must be rejected as uneconomical, undesirable and impracticable. Having reached this conclusion, he made no study of cost or time estimates.

The contents of this report were not made public. However, the Department of Public Works acting on it and also, no doubt, after consideration of the many other factors involved, decided not to proceed with the modifications suggested in 1936. No further action was taken until the intervention of the New Westminster Harbour Commissioners in January, 1961. A representative of the Department of Public Works expressed the opinion that the circumstances have changed in the twenty years since the Pratley Report was compiled and that further investigation of existing conditions should be made.

For sometime the New Westminster Harbour Commissioners had been disturbed about the adverse effect of the railway bridge on the port and in January, 1961, they submitted a brief to the Department of Transport urging that a lift span be installed. They considered this a long range solution because the proposal, even if it had received immediate approval, would have taken five years to implement. In the meantime, as seen earlier, the Harbour Commissioners worked with the pilots on other possible partial remedies which would enable bridge aft ships to transit the bridge draw. The Commissioners felt that the 1936 Order in Council approving the construction of the Pattullo Bridge committed the Federal Government to removing the swing span and replacing it with a lift span, and the purpose of the brief was to ask the Federal Government to meet this commitment.

On March 1st, 1961, the Harbour Commissioners received a report from Swan, Wooster Engineering Company Limited, Consulting Engineers, estimating the cost of converting the swing span of the bridge to a vertical lift span at $1,963,500.

The Department of Public Works quoted a figure of "up to $8,000,000" for the installation of a lift span but on examination it was found that this amount was a casual estimate obtained from the Bridge Engineer of Canadian National Railways on the occasion of a meeting to discuss quite different topics. No detailed engineering study had been made. The Department had no breakdown of the estimate but it was known to include both the cost of the bridge and incidental expenses such as re-routing railway traffic while the new span was under construction. In addition, the estimate was based on a span 450 feet wide rather than 350 feet.

Complaints about navigational difficulties caused by the railway bridge have continued ever since it was built. Prior to 1961, however, there is no evidence in the Department's files that it investigated the complaints. The New Westminster Harbour Commissioners' brief in 1961 dealt with the navigational problems of which the Department had long been aware. It knew of the restrictions on navigation created by the railway bridge and its effects, but the stand it took was that it had not been established that the navigational requirements justified the conversion requested. Up to the time of the Royal Commission's hearing, no additional evidence had been

brought before the Department to show any substantial change in the degree of the hazard to navigation sufficient to justify any change in the existing arrangements. The Department considered that evidence was required to indicate whether the installation of a lift span, or the construction of a new crossing at another location, whichever should be decided upon, could be justified when the cost of construction was weighed against the economic benefits being derived from the area concerned. The Harbour Commissioners' contention was that the development of the upper portion of the Fraser River is extremely important to the port and to the growth of the area as a whole.

Therefore, in 1961 nothing further was done about the Harbour Commissioners' complaint. This was before the increasing trend to bridge aft ships which introduced a new element that, in the Department's opinion, should now be considered.

In June, 1962, the Department of Public Works received, through the Department of Transport, a submission made by the New Westminster Pilotage Authority concerning the refusal of the pilots to take bridge aft ships through the bridge.

An interdepartmental committee was then formed to investigate the particular problems of bridge aft ships. The committee was under the chairmanship of the Director of Economic Studies of the Department of Public Works; the other members were from the Economic Research Branch of the Department of Transport; Aids to Navigation Branch, Department of Transport; and Harbours and Rivers Branch of the Department of Public Works—four in all.

The scope of this interdepartmental committee was not, however, to investigate navigational problems, i.e., the objections of the pilots or dredging problems, but merely the economics of the question.

The committee took as a basis for discussion that the restrictions laid down by the Pilotage Authority and the pilots were justified, without implying, however, that they accepted or rejected these restrictions, their sole purpose being to investigate the eventual economic loss caused thereby. Before discussing the question of navigation, they first wanted to appraise its economic importance. Therefore, before considering any alteration in the swing span of the bridge, the need for larger ships to navigate above the bridge had to be established first.

One of the points that the committee felt should be established was the value to the industries making use, or who could make use, of the channel above Westminster bridge contrasted with the cost of dredging the upper channel and the effect on navigation of replacing the swing span. It was the committee's feeling that it would be difficult to justify any major reconstruction unless it could be shown that the direct benefits to industry would correspond to the actual annual costs.

The only available information about the area above the bridge and its economic development was that supplied by Crown Zellerbach to the New Westminster Harbour Commissioners.

This committee was not very active; it had only two meetings, on August 16 and December 14, 1962.

When the committee met on August 16, 1962, the Department of Transport representative undertook to obtain further information. He did not seek information from Crown Zellerbach directly, but proceeded through the New Westminster Harbour Commissioners while they were attending a meeting on other business in Ottawa on November 22, 1962. He then requested certain information elucidating the position of the Crown Zellerbach Company. This the Harbour Commissioners undertook to furnish, i.e., further details about traffic and the Company's method of operation.

The committee felt the figures that had been furnished by Crown Zellerbach would not be significant unless, for instance, direct loading at Fraser Mills were known to form part of the Company's policy, if a lift span were constructed. The matter, however, was not pursued with the New Westminster Harbour Commissioners after that meeting. Nothing was heard from them on the subject and there was no follow-up on the committee's part.

At the meeting held December 14, 1962, the Department of Transport representative reported that he had been unable to obtain the necessary information. There have been no further meetings because the committee was informed this Royal Commission had been established and that relevant submissions were being filed by Crown Zellerbach and other interested parties. The committee therefore took the attitude that they should wait to see the transcript of the evidence that would be given to the Commission.

The Department of Public Works had been aware of the difficulties encountered at the bridge long before receipt of the letter dated April 17, 1962, from the New Westminster Pilotage Authority and felt that it was in an unhappy position since it had the responsibility of maintaining a bridge which was hazardous to navigation and used entirely by the railways. Its sole responsibility was to keep the bridge in operation and it had nothing to do with the questions of navigation, rules of the road or pilotage.

The Department of Public Works is aware of the difficulties attending bridge aft ships and of the increasing size of ships in general, but is not aware of any substantial change in the traffic passing the bridge. However, it agrees that there may be a difference between the traffic actually passing the bridge and the traffic that desires to pass it. It accepts the fact that the bridge is a hazard to navigation, since any structure placed in a waterway must constitute a hazard to some extent. The difficulty is to determine the degree of the hazard and its importance, bearing in mind other factors.

The Department agreed that since the arrival of bridge aft ships navigational problems have increased.

In the opinion of the Department's officials, if approval was being requested today for the construction of this railway bridge under the Navigable Waters Protection Act, 1962 R.S.C., 193, it would not be granted even at the width of the so-called vertical span. The width would have to be in the neighbourhood of 450 feet corresponding to the adjacent Pattullo Bridge. They acknowledged the fact that maritime traffic has changed over the years and that the requirements of 20 years ago are not the requirements of today.

A second interdepartmental committee was established under the chairmanship of the Department of Transport to bring the railway interests and the Department of Public Works together for technical studies. At the first meeting, the only railway company representative was from the Canadian National Railways. The only topics were the relocation of the bridge and its reconstruction. The scope of that meeting was simply to lay the groundwork for further investigation.

At the second and final meeting of this committee held April 9, 1964, the question of an alternative site was discussed. The committee did not reach any conclusion.

The bridge is over 60 years old. Traffic conditions are not the same as they were at the time of the Pratley Report in 1947, when steam locomotives were used. Although railway traffic increased in the period 1948-1962, the loading factor on the railway bridge has decreased because the locomotives have been converted to diesel. Hence, obsolescence in terms of bridge life is not now as serious a factor as it was at the time of the report. Obsolescence, however, was only one of the factors considered at the time and not necessarily the most important.

In 1947, Dr. Pratley indicated a further useful life of 12 to 20 years might be expected, but this was based on the railway traffic at that time. Despite the fact that the traffic is not now as heavy, 20 years have passed and the Department of Public Works is of the opinion that it would not be justified economically to spend a great deal of money on major reconstruction of a bridge which is now so old.

No detailed analysis of the life span of the bridge had been made, but bearing all factors in mind, i.e., river conditions, navigational hazards, life of the bridge and, in addition to these, other undesirable and undesigned features which all affect the railway operations—one of these being a sharply curved bridge—all these factors would have to be considered in order not to compound the original miscalculation. It is understood to be the present view of the Department of Public Works that in the end the best solution might

be another crossing over the river at another location. However, this is dependent again upon a large number of factors, one of which is the future plans of the railways.

Colonel Swan's estimated cost of replacement of the swing span by a vertical lift at $1,963,500 (Ex. 182) as of March 1st, 1961, covers only the cost of construction of the lift span, two towers, north and south piers, mechanical equipment, electrical equipment and removal of the existing span and pier, plus engineering and contingency 10%. The opening would be a span of 265 feet clear, compared with 170 feet on each side as at present, and with the 450-foot overall opening of the Pattullo Bridge. It is to be noted that, according to this proposal, the opening would be less than the actual width of the swing span which is 372 feet between both side piers because the new piers on which the towers would rest would be constructed further inside the river channel.

Colonel Swan, who is familiar with the existing conditions, would implement his proposal in the following order:

(a) construct the two piers on which the vertical columns carrying the lift span would be erected inside the existing north and south draws;
(b) construct the vertical lift on scows and move it into position;
(c) erect simultaneously the two towers of the lift span, both of which had been fabricated beforehand in sections;
(d) install operating and electrical equipment and carry out tests;
(e) remove the existing swing span on scows and land the lift span on the new piers;
(f) remove the centre pier and the protective work of the swing span.

Shipping would be interrupted for about seven weeks.

Based on his experience of the river bottom when he was in charge of constructing the Pattullo Bridge, he stated there would be no problem with footings. Although the new piers would be sited a little further inside the channel, they would be relatively small and would have little effect on the currents. He observed that the two piers together would occupy less space than the existing centre piers and that when the swing span was removed there would be a straightening of the current.

Despite increased costs for labour and steel, Colonel Swan felt his 1961 estimate still held because the piers could be built for substantially less than was originally estimated.

Rail traffic would have to be re-routed during the seven weeks' interruption. The amount the Harbour Commissioners would have to pay the railroads in diversion costs was estimated at $160,000.

Colonel Swan believed the bridge would last another forty years if it were converted to his plan, and that a bridge of this nature would remove practically all navigational hazards.

96465—22½

As the Swan, Wooster Engineering Company Limited Report appeared to be in conflict with the Pratley Report, the Department of Public Works retained the firm of Phillips, Barratt and Partners, Consulting Engineers, of Vancouver, B.C., to carry out a further study of the feasibility in terms of engineering economics of replacing the swing span with a lift span and to determine the cost. If the proposal was found not to be feasible, the report was to include possible alternatives and their estimated cost. The study was based on the proposal that a vertical lift span in its raised position should provide a minimum vertical clearance of 140 feet for a clear horizontal distance between piers of 400 feet (25 feet wider than the Pattullo bridge on account of the presence of solid piers) with the centre point of the lift span in line with the centre point of the Pattullo highway bridge 200 feet downstream and parallel to the railway bridge.

The consultants' report was received in May, 1966. The conclusion was that the only practical solution to widening the navigation channel at the site of the existing railway bridge would be the construction of a new bridge at a new site some distance upstream from the existing bridge, the estimated cost of which was $9,492,000 not counting the cost of railway relocation.

The summary of conclusions reads as follows:—

> "The overwhelming array of adverse circumstances associated with the construction of new piers close to existing piers, and with the erection of the superstructure, can lead only to the conclusion that it would be most unwise to attempt the construction of a new lift span on the present alignment while the bridge is kept open to rail traffic.
>
> The hazards of caisson construction under normal circumstances where there are no existing adjacent structures are great—the sinking process is never fully under control, and river work is always subject to unforeseen difficulties. However, to attempt to sink caissons immediately adjacent to existing piers and spans would be undertaking work at risks greater than are warranted in an attempt to extend the useful life of this bridge.
>
> The hazards of erection of the superstructure are also sufficiently uncertain that it is impossible to guarantee that this work could be done without lengthy closures of the bridge to both rail and river traffic.
>
> It is therefore the recommendation of this report, that in spite of the significantly higher costs, the only practical solution to widening the navigation channel at this site is the construction of a new bridge."

On the question of obsolescence of the present railway bridge, they stated as follows:

> "It is impossible to determine accurately the probable life of a structure, but we see no reason to believe that the present bridge will be not adequate for many years to come for *railway* use. The bridge however, is already obsolete from a point of view of river traffic, and must remain so until its complete removal, in view of the finding of our report that it is impractical to replace the swing span."

There the matter rests at the moment. However, there is one other development that may affect this question. Effective October 1, 1966, responsibility for the Navigable Waters Protection Act was transferred from the Department of Public Works to the Department of Transport under authority of Order in Council P.C. 1966-1886 dated September 29, 1966.

(g) *Port Mann Highway Bridge (Ex. 1338)*

This bridge is located above Port Mann some four miles upstream from the Westminster bridge. It was constructed in 1964 with the specific aim of avoiding impediments to future deep-sea shipping. It provides vertical clearance of 145 feet and horizontal clearance of 800 feet, in sharp contrast to the 372 feet total width of the railway bridge which the central pier further reduces to two draws of about 171 feet each at the surface.

The pilots were consulted prior to the construction of the Port Mann Bridge and of three locations, they recommended the most easterly. They also recommended that, in view of the fact that river traffic is increasing yearly, only a high level bridge[6] with a width equal to the full width of the usable and deep-water channel should be considered, i.e., a 1200-foot opening would be needed to leave the deep channel clear. The last recommendation was not completely followed, since it provides an 860-foot opening, as already noted.

COMMENTS

It was strongly urged that the railway bridge obstruction be corrected by converting it from a swing span to a lift span. This recommendation and others regarding deepening the channel both above and below the railway bridge do not come within the scope of this Commission's mandate. Neither the Pilotage Authority nor the pilots are empowered to order the removal or modification of the bridge or to require any type of work in the channel. The pilots' rôle is to cope, as far as possible, with the limitations thereby created.

However, as the main users of the channel and experts in its navigation, it is their duty to make these limitations known to all concerned and, whenever there is a solution they consider feasible, to make it known to the responsible authorities.

Not only does the Fraser River and its delta present a constant maintenance problem but to deepen the channel to accommodate the larger vessels of the future would involve very substantial capital expenditures. There is no doubt that, if the channel is not enlarged, New Westminster will soon be inaccessible to normal ocean-going traffic. The decision whether the necessary steps to avoid this situation should be taken belongs to the Government and should be based mostly on economics and the general interests of the public.

In the course of its hearings the Commission was informed that the Department of Public Works had suspended the study of the question of the railway bridge because pertinent evidence on the subject that would be likely to be useful in their further studies would probably be brought before this Commission. It is with that aim in mind that the Commission has made as

[6] A high level bridge would not be practical for railways because of the gradient.

complete a report as possible based on all the relevant evidence that came before it both concerning the extent of the limitations on navigation created by the existence of the bridge and the feasibility and advisability of removing or converting it.

With regard to the so-called safety regulations, i.e., under what circumstances a ship can be safely navigated, this is a matter to be decided by the experts in the pilotage of these waters, namely, the licensed pilots, bearing in mind that the extent of their own competency is also one of the limiting factors.

When the circumstances that prohibit safe navigation are either permanent or predictably recurrent, their limiting effects should be appraised and published so that all concerned may govern themselves accordingly.

It is not only permissible but commendable for the pilots to assess these limitations as a group, thereby avoiding possible individual conflicting opinions and at the same time, increasing their efficiency by bringing to each one the benefit of the experience of the others.

When the pilots have stated the limit of their capabilities, it becomes the responsibility of the Pilotage Authority to do everything possible to increase the efficiency of the service, a course of action which was possible in this case as proved by the series of events which has taken place since the March, 1963, public hearings of this Commission. One course of action is to make known to those responsible for making improvements the navigational problems that exist, in the hope that some limitations can be removed. Another course of action is to improve the efficiency of the service, for instance, by improving the pilots' training to ensure they become experts in the handling of large ocean-going vessels of all types, are fully conversant with the use of tugs to assist, by establishing a grade system for pilots' licences and, if necessary, requiring the most skilled pilots to obtain special training in order to solve a particular local problem.

There is always a danger that group decisions of this nature will be governed by the lowest level of ability. When a number of individuals perform a service, all can not be competent to the same degree. The impression gathered from the evidence received from the New Westminster pilots themselves, and also those in the other Districts, is that the pilots who feel able to perform a difficult assignment refrain from doing so if others in their group are not capable. These highly competent pilots are apprehensive of the resentment of their fellows.

In addition to their greater natural ability, they may acquire greater competency through experience. In a realistic and responsible pilotage organization pilots with long experience and a good record should be expected to take the more difficult assignments, whether on account of the type or size of vessel, or because of the prevailing conditions and circumstances, (such as freshet, or a temporary defect in the vessel's manoeuvra-

bility) or a combination of both. Therefore, it is believed that even with a small group of pilots, as in the New Westminster District, part of the solution lies in the official recognition of the greater *expertise* of certain pilots through a grade system based solely on competency. It would follow that a higher grade should call for increased remuneration. (Vide General Recommendations 30 and 31, Part I, pp. 565 and ff.).

It may be surmised that the substantial decrease in ocean-going traffic since 1964—which is likely to continue—has been a deciding influence in making the pilots change their expert opinion on the restrictions which they stoutly defended before this Commission in 1963 on the ground of safety, especially on matters where they stated that no amount of training on the part of the pilots nor any type of outside assistance could correct, e.g., navigating bridge aft ships. Care should be taken that such a reversal of opinion on the part of the pilots is not governed by factors unconnected with the safety of navigation, such as undue outside pressure and/or their own personal interests. However, experience so far has proved that the pilots' strong stand taken in 1961 and reaffirmed before this Commission in 1963 was unwarranted. It also proves that the pilots' *expertise* in shiphandling can be improved by training and that, therefore, the present method of qualifying pilots is deficient. This point will be further studied later.

2. NATURE OF PILOTAGE SERVICE

(1) Comments on the Nature of the Service

Pilotage in the New Westminster Pilotage District is mainly river pilotage with all the usual attendant hazards and difficulties, including freshets. In addition, there are the problems presented by the railway bridge. The difficulties of pilotage and berthing and unberthing ships within harbour limits are those common to all tidal ports.

It is the consensus of all those directly interested who appeared before the Commission that the maintenance of a pilotage service is necessary in the public interest because, without this service, the Fraser River would be closed to ocean-going vessels for all practical purposes and the economy of New Westminster Harbour and the Fraser Valley would be severely affected.

When Pacific Coast Terminals Company Limited prepared its submission for the Commission, it made a special study of the necessity for a pilotage service on the Fraser River and reached the conclusion that it is required, principally to ensure safety of navigation. This service "must of necessity be maintained by skilled, experienced and competent pilots because of the very nature of the conditions against which they must work". The Company pointed out that in ports with restricted entrance and narrow channels one casualty or one grounding can stop all traffic, and expressed the opinion that such a misfortune should be guarded against. It added that the problems

of the Fraser River require specialized knowledge; while certain basic problems are common to all ports and restricted waters, there are some difficulties that are peculiar to the area.

Pilot H. L. Gilley testified that Masters of foreign ships (which all employ pilots) do not normally acquire experience or local knowledge in the navigation of their ships up or down the Fraser River because they seldom take part, preferring to trust the pilots, and only on rare occasions do they berth or unberth their ships. The pilots emphasized that those who navigate the river must be constantly aware of its variable conditions and that such knowledge can only be acquired by many years' experience and not by occasional visits.

The British Columbia Pilot, Volume 1, Sixth Edition, 1959 carries the following Caution (p. 97):

> "Owing to the constant changes in the channels of the Fraser River and their lighting and buoyage, its navigation by a stranger without a pilot is not advisable, and only the outer lights, and light-buoys are described in this work." . . .
> "Both beacons and buoys are liable to be washed away, particularly during freshets".

Figures supplied by the Dominion Bureau of Statistics on arrivals in Fraser River ports of vessels over 250 N.R.T. and the Pilotage Authority's Annual Reports (Exs. 149 and 161) are the basis of the following comparative table which indicates the extent of the use made of the pilotage service in this District. Contrary to the corresponding table that appears in Section One (page 40) for the British Columbia District it was not necessary to multiply the D.B.S. statistics by two because the Pilotage Authority's Annual Reports give comparable information in terms of vessels.

Year*	(1) Total Number of Vessels over 250 T.	(2) Number of Vessels Employing Pilots	(3) Percentage of (2) over (1)	(4) Total NRT of Vessels over 250 T.	(5) NRT Piloted	(6) Percentage of (5) over (4)
1959.....	2,520	444	17.6	3,078,999	1,844,532	59.9
1960.....	2,461	594	24.1	3,743,790	2,449,481	65.4
1961.....	2,680	598	22.3	3,873,211	2,513,175	64.9
1962.....	2,354	546	23.2	3,546,248	2,309,991	65.1
1963.....	2,512	574	22.9	3,918,852	2,570,930.5	65.6
1964.....	2,801	621	22.2	4,242,754	2,728,736.5	64.3
1965.....	3,235	598	18.5	4,670,158	2,634,144	56.4
1966.....	3,592	496	13.8	4,772,627	2,290,216.5	48.0

* The aggregate NRT piloted for the year 1967 is not available since no record of NRT is kept on account of the change from net to gross tonnage.

The ferry traffic tends to distort the information derived from the D.B.S. statistics. Arrivals of ferry vessels are not counted if they operate between berths within a given port but, if they ply between different ports, there is an arrival each time they arrive at a port. In order to depict maritime traffic as accurately as possible the incidence of ferry traffic was ascertained. On the Fraser River there are two ferry services in operation (Secretary's letter Feb. 16, 1965, Ex. 1427(w)):

(a) the Canadian National Railway S.S. *Canora,* 2383 gross tons, carrying rail cars to Victoria; she makes a return trip daily, is exempt and does not employ a pilot;

(b) the Liberian registered S.S. *Alaska,* 5593 gross tons, carrying rail cars between New Westminster and Whittier, Alaska; she commenced operations in June, 1964, makes one round trip in approximately a week; is not exempt and employs a pilot.

The data in this table compared to those in the similar table for the B.C. Pilotage District (p. 40) indicate that the Fraser River is decreasing in importance and is more and more inaccessible to present day ocean-going traffic. This comparison gives the following information in percentages:

Increases Between Year 1959 and Year 1966	British Columbia District	New Westminster District
In number of ships	57.4	42.5
In number of ships piloted	16.2	11.7
In aggregate tonnage	76.8	55.0
In aggregate tonnage piloted	79.1	24.2
In average tonnage per ship	12.3	8.8
In average tonnage per ship piloted	54.2	11.1

It shows also that the pilots are employed by the larger vessels:

	British Columbia District		New Westminster District	
Situation for Each Year	% of vessels piloted	% of aggregate tonnage piloted	% of vessels piloted	% of aggregate tonnage piloted
Vessels piloted 1959	15.6	40.7	17.6	59.9
Vessels piloted 1966	11.5	41.2	13.8	48.0

The increase in maritime traffic between 1959 and 1966 is due to the increase in the carriage of coastwise cargo, as shown by the marked difference between total ships and tonnage and ships and tonnage piloted. The following figures provided by the Dominion Bureau of Statistics concerning the cargo handled in the Pilotage District of New Westminster (2,000 lbs to the ton) are also informative:

Year	Foreign Cargo (tons)	Coastwise Cargo (tons)
1959	1,100,216	1,842,748
1960	1,295,947	2,499,630
1961	1,342,050	2,903,077
1962	1,114,963	2,878,176
1963	1,230,562	4,462,549
1964	1,389,501	3,660,940
1965	1,215,478	4,735,593
1966	1,487,068	5,419,588

(2) Compulsory Payment of Pilotage Dues

Although the governing Order in Council purports to impose compulsory Pilotage, the compulsory payment of pilotage dues is enforced instead. (Re legality vide pp. 247-8).

In practice, very few ships that are not exempt dispense with the services of a pilot and those that do are regular traders and are clearly of small size. In fact, from 1959 to 1965 inclusive there was only one such vessel which did not employ a pilot: the small M.V. *Indian,* 323 N.R.T., 405 G.R.T., a United States coaster trading between the Fraser River and Puget Sound ports with pulp and paper products. This vessel pays the minimum charge of $32.50 and avoids paying the $10 pilot boat charge by not employing a pilot. In 1966, there were 14 trips by M.V. *Indian* and 22 trips by the ferry (train) ship S.S. *Alaska.* In 1967, only the M.V. *Indian* and her sister ship, M.V. *F.E. Lovejoy* dispensed with the services of pilots. (Ex. 1427(n)).

It is worth noting that in no case did any non-exempt vessel transit the railway bridge or effect a movage without a pilot.

The following table indicates the incidence of both the number of trips and the total earnings of the District (excluding pilot boat and radiotelephone fees) when non-exempt vessels dispense with a pilot (Exs. 149, 152 and 1427(n)):

Year	(1) Total number of trips	(2) Number of trips without a pilot	(3) Percentage of (2) over (1)	(4) Percentage of revenues derived from this source
1959	888	0	0	0
1960	1188	39	3.28	0.87
1961	1134	59	5.20	1.39
1962	1038	56	5.40	1.46
1963	1100	48	4.36	1.14
1964	1194	50	4.19	1.11
1965	1152	28	2.43	0.66
1966	954	36	3.77	1.96
1967	947	24	2.53	0.59

The exemptions are those listed in sec. 346 C.S.A. plus the general exemption provided in the By-law for small foreign ships whose tonnage does not exceed 250 N.R.T. The compulsory payment system is fully enforced and there are no unofficial exemptions as in the B.C. District. For instance, there are two ferry services operating out of the Fraser River: The C.N.R. S.S. *Canora*[7] carries rail cars to Victoria and the Liberian registered S.S. *Alaska* carries rail cars between New Westminster and Whittier Alaska (for additional details vide Sec. One, pp. 57-58). The *Canora* is exempt under subsec. 346(e)(iv) C.S.A. and does not employ a pilot. The *Alaska* is not exempt for the sole reason that she is not a steamship "registered in any part of Her Majesty's dominions". S.S. *Alaska* always employs a pilot in the New Westminster District except for 11 trips during the summer months of 1966 but, as seen earlier, this is not always the case when she transits the B.C. District (Exs. 1427(n) and (w)).

In the New Westminster District, as elsewhere, the Pilotage Authority has purported to extend the application of legislation, *inter alia,* of the compulsory payment system, to vessels that do not fall within the statutory definition of "ship" (vide Part 1, pp. 213 and ff. and pp. 218 and ff.). For the reasons given in Part I, pp. 218 and ff., this is illegal.

In the regulation definition of "vessel" an indirect exemption is provided for scows to which a very restrictive definition is given (subsec. 2(j)): "scow" means any undecked barge having no living accommodation".

[7] In June, 1968, S.S. *Canora* was reported laid up and offered for sale. There was no substitute ship on the Fraser River.

This limited definition has given rise to much contention because it would have the effect of making barges that do not fall within its terms subject to the compulsory payment of dues. *Inter alia,* there are barges known as "hulks"—former sailing vessels or steamships with decks and engines removed—which are used to carry pulpwood chips from Fraser Mills and New Westminster to Ocean Falls, Powell River and other coast ports. These hulks are 300-350 feet long, 50 feet wide, draw over 20 feet and having living accommodation for three persons. The Secretary of the Pilotage Authority further reported that on the Pacific coast it is the practice to transport lumber from sawmills to ship-side on "scows". "These are decked and the lumber is carried on this deck. Originally these were wooden vessels approximately 30 by 90 feet and smaller. Today they are mostly being constructed of steel and are many times larger, some carrying up to 2 million feet". These hulks and barges are steered by the men on board. Not being "steamships" they would not benefit from the statutory relative exemption of subsec. 346(e)(iv) even if registered in one of Her Majesty's dominions, although they are strictly local traders. This situation is not specifically covered in the Act because these vessels are not ships and, therefore, are not affected (and can not be) by the present pilotage statutory provisions of Part VI C.S.A.

Pilotage dues have been charged towed barges carrying oil. Since the oil was in tanks, the vessel was considered a barge and not a scow.

Although no distinction is made concerning the country of registry in the definitions of "vessel" and "scow" in the By-law, the Pilotage Authority has considered a non-Canadian scow as not exempt. Furthermore, American barges which are in excess of 250 N.R.T. are charged pilotage dues. The case of the American barge *Foss 98* (2,286 tons net) which was brought to the Commission's attention (Ex. 1429) is a good example of the situation that developed. Tugs and tows belonging to Foss Launch & Tug Co. of Seattle, Washington, and registered in the U.S.A. had apparently been calling regularly at ports or landings on the Fraser River without taking a pilot and without being required to pay dues. It may have been that both the tugs and tows benefited from the small ship exemptions, or that the tows were scows, or that their presence passed unnoticed. But on October 27, 1961, the large *Foss 98* came inbound to berth at the Dow Chemicals wharf, a pilot embarked at Sand Heads and dues were charged both for the inward and outward voyage. The Foss Launch & Tug Co. protested but was told that, since the barge was over 250 N.R.T., it was subject to the compulsory payment of dues. It is interesting to note that in the case of composite navigation units, such as tugs and tows, each component is treated as a separate vessel for pilotage charges. In this case, the tug was considered exempt because its net tonnage was under 250 tons, but the barge was assessed on its own tonnage and its draught inward and outward. If there had been more

than one tow, each would have been charged separately, unless it was exempt on account of its tonnage. However, the pilot boat charge and the transportation expenses of the pilot would be charged only once (Exs. 1429 and 1525(g)). (Re the computation of dues for composite navigation units, vide B.C. Recommendation 5).

3. ORGANIZATION

Of all the large Pilotage Districts in Canada the New Westminster District follows most closely the original structure provided in the governing pilotage legislation (St. John's, Nfld., did not come under the Canada Shipping Act until 1967). The Pilotage Authority is a three-man Board, the District is almost financially self-supporting and the Authority is autonomous (vide Part I, C. 3, pp. 52 and ff., and C. 5). However, its pilots do not enjoy the status of free entrepreneurs, the only status contemplated by the Act (Part I, C. 4). Since 1930, the pilotage service has been controlled by the Authority and the pilots are treated as if they were the employees of the Authority.

(1) Pilotage Authority

The Pilotage Authority is, and always has been, a three-man Board whose members are recruited locally as contemplated by sec. 325 C.S.A.

The Government's control over the Pilotage Authority's activities is through the Governor in Council in the exercise of his various powers with regard to pilotage under the Canada Shipping Act (vide Part I, p. 53) and through the surveillance power of the Minister of Transport (Part I, pp. 62 and ff.). Since the subdivision of the District in 1904, except for the appointment of the members of the Pilotage Authority and its Secretary, the Governor in Council's function has consisted of automatically confirming the By-laws made by the Pilotage Authority when they are presented for approval by the Department of Transport. As for the Department of Transport, its rôle has been one of non-involvement in the District's administration. It has limited its concern to receiving the annual report the Pilotage Authority is required to transmit to the Minister under sec. 332, C.S.A., advising the Pilotage Authority when its advice is requested, serving as liaison between the Governor in Council and the Pilotage Authority regarding the approval of By-laws and, finally, providing pilot vessel service at Sand Heads through its local representative, the B.C. Regional Superintendent. The attitude of non-involvement has resulted in failure to discharge its surveillance function. No report other than the annual report required by the Act is ever requested and this annual report is merely filed without being scrutinized, as is shown by the existence of obvious irregularities which have been allowed to continue unchecked.

The Department also serves as liaison between the local Authority and other Departments of Government, such as the Department of Public Works for dredging.

The members of the Pilotage Authority of the New Westminster District meet when required as arranged verbally by the Secretary. They have no regular annual meeting but convene once a year to approve the financial report. The Secretary takes the minutes.

Neither the District By-law nor the Canada Shipping Act specifies the qualifications of the Authority's members (vide Commission's General Recommendations 16 and 17). Local shipping interests have complained that the members of the New Westminster Pilotage Authority lack technical knowledge, which would be inconsistent with their quasi-judiciary powers under sec. 9 of the By-law (passed under sec. 329(k) C.S.A.), to adjust disputes between "masters of ships, pilots and others respecting pilotage matters". Pacific Coast Terminals Limited submitted that the local Pilotage Authority should be competent to solve the pilotage problems of the District. This, the Company claimed at the Commission's hearing, was not the case, with the result that the pilots, because of their technical knowledge and in the absence of any other competent authority, had been forced into the undesirable position of adjudicating pilotage problems themselves. While agreeing that these problems had been resolved fairly, the Company considered that it is wrong in principle and likely to lead to a conflict of interests for any group to be required to decide a case in which it is itself involved.

There has been no formal recourse to the Authority to adjust a dispute pursuant to sec. 9 of the By-law but it was stated that such a step would be ineffective because it is claimed the Pilotage Authority lacks technical knowledge. They would have to consult the pilots (the only available experts on local pilotage matters), rely on their advice and then make their decision. In the opinion of the Secretary of the Pilotage Authority, the end result is that the pilots' decision is final.

To the Secretary's knowledge, the pilots had never refused "to conduct" a vessel on the ground of danger but they had made strong recommendations against piloting vessels in certain areas. Shipmasters had always complied with the pilots' advice.

Complaints, however, were occasionally received that certain ships did not trade in certain areas. When the complaints came in, the subject was reviewed and the pilots consulted. On their advice the safety regulations were left unchanged. On all occasions, the Pilotage Authority considered it must be guided by the pilots' advice on safety regulations.

Pacific Coast Terminals Limited complained that the shipping interests had not been called before the Pilotage Authority to give evidence, or to provide further evidence in support of their claims, and that only the pilots had been consulted.

The Company added that the pilots should not decide on problems arising out of the services they perform but that another competent body should act as arbiter.

It was recommended by Pacific Coast Terminals Limited that disputes be adjudicated, not by a Magistrate or County Court Judge or some authority unacquainted with the Fraser River, but by a special group recruited from, and connected with, all the interested parties. In addition, the Company suggested that there should be some means of appeal (vide Commission's General Recommendations 30 to 38, Part I, pp. 565 and ff.).

The Vancouver Chamber of Shipping also urged that traffic control within the Harbour of New Westminster, i.e., practically the whole District, should not be left to the pilots or to the Pilotage Authority on the ground that the Harbour Commissioners should be responsible for the safety of the harbour. The Chamber objected violently to control of the harbour by the pilots, i.e., to the mandatory safety regulations issued by the Authority on the advice of the pilots. The New Westminster Harbour Commissioners took the same stand. As stated earlier (p. 287), the Vancouver Chamber of Shipping and the Harbour Commissioners failed here to distinguish between the right of vessels to navigate and the duty of the licensed pilots to navigate those ships whose Masters wish to use their services. However, if pilotage were to be made compulsory, the situation would be basically changed since the Pilotage Authority would become responsible for the safety of navigation wherever pilotage was compulsory in its District, and to the extent it applied. In that event, the Authority must have some control of navigation in order to prevent any vessel considered a safety risk from navigating without a pilot (vide Commission's General Recommendations 22 and 23, Part I, pp. 532 and ff.).

Although nowhere in the Act or elsewhere is there specific authority for the Pilotage Authority to own property, to enter into contracts, to sue or be sued, these powers are ancillary to those specifically granted to the Pilotage Authority, and the Pilotage Authority possesses them to the extent necessary for the full exercise of the specific powers granted to it by the Act. Otherwise, such exercise becomes ultra vires.

The New Westminster District Pilotage Authority has assumed such powers and exercised them without seeking the approval of the Governor in Council required by sec. 328 C.S.A. when applicable. The Department of Transport was aware of the Authority's action (vide letter February 11, 1965, Ex. 1427(u)). Aside from the question of not obtaining the approval of the Governor in Council, most contracts that were made by the Pilotage Authority were illegal because they could not be related to a specific power granted by the Act.

These ancillary powers are studied in Part I, C. 8, pp. 315 and ff.

(a) *Borrowing Power*

Since the present Secretary was appointed in 1952, the only occasion when money was borrowed was in 1958 to refit the pilot vessel after the Department of Transport's request that it be brought under Steamship Inspection Regulations (p. 323). On February 3, 1958, a $25,000 loan was negotiated with the Royal Bank of Canada at six per cent interest, to be repaid in monthly instalments. The final payment by the Pilotage Authority was July 31, 1959. The outstanding balance of $16,720.66 was paid by the Government when the ownership of the pilot vessel was transferred to the Department of Transport. This loan had been authorized by the New Westminster Pilotage Authority at its meeting on January 22, 1958, on the basis that it would be repayable at the rate of five per cent of the gross pilotage revenue of the District with a minimum of $5,000 per year (Ex. 1427(s)). The promissory note was signed in the name of the New Westminster District Pilotage Authority by its Chairman and its Secretary (Ex. 1427(u)(1)).

(b) *Right to Own Pilot Vessels*

Prior to 1930, each pilot was responsible for his own arrangements to embark and disembark off Sand Heads. The 1930 By-law changed the structure of the service from private enterprise to a service fully controlled by the Authority (p. 253). The Pilotage Authority then undertook to provide and operate the pilot vessel service to and from Sand Heads. Sec. 9 of the 1930 By-law provided that "All vessels required for the use of the Pilotage Service shall be purchased or built and payment made therefor out of the revenues of the District and be owned in the name of the Pilotage Authority".

Sec. 10 further provided that "The pilots shall be deemed not to have any individual claim or interest in any vessel or vessels registered in the name of the Pilotage Authority" (Ex. 1427(g)).

The situation changed again when the Department of Transport became responsible for the pilot vessel service in 1959. The only pilot vessel owned at that time by the Pilotage Authority was *Fraser Pilot No. 1* since renamed *Canada Pilot No. 24*. Despite the By-law requirement, this vessel was never registered in the name of the Pilotage Authority as such. The registered owners are listed as follows (Ex. 1427(u)(2)):

(1) July 7, 1937, Francis P. Matheson, Secretary, Pilotage Board, New Westminster, B.C., 64 shares.

(2) June 25, 1945, Bill of Sale, 64 shares from F. P. Matheson to William Gifford, Merchant of New Westminster, Kilburn King Reid, Real Estate and Insurance Agent of New Westminster, and George Livingstone Cassady, Barrister and Solicitor of New Westminster, as joint owners.

(3) December 1, 1953, Bill of Sale, 64 shares by the above-mentioned joint owners to Alexander Sutherland Duncan, Barrister and Solicitor of New Westminster.

(4) June 19, 1957, to the Estate of the late Alexander Sutherland Duncan.

(5) June 19, 1957, Bill of Sale, 64 shares from the Duncan Estate to Jack M. Warren of New Westminster, Secretary-Treasurer.

(6) April 14, 1958, Bill of Sale, 64 shares from Warren to W. E. A. Mercer, Shipbuilder of New Westminster, Kilburn King Reid, Real Estate Agent of New Westminster, Harry McDonald Craig, Traffic Manager, New Westminster, as joint owners.

(7) December 9, 1959, Bill of Sale from the above mentioned joint owners to Her Majesty the Queen in right of Canada represented by the Minister of Transport, Ottawa, Ontario.

When the Department of Transport became interested in the pilot vessel and instructed that it be brought under the Steamship Inspection Regulations, they requested that the pilot vessel be registered in the name of the individual members of the Authority rather than in the name of Mr. Warren (Pilotage Authority meeting July 3, 1957, Ex. 1427(s)). The legal advice given to the Department of Transport at that time was that the Pilotage Authority as such, being unincorporated, could not be registered as owner (Ex. 1427(u)(11)). The Pilotage Authority as such was never the registered owner of the pilot vessel: the registered owners were either the Secretary-Treasurer or the Commissioners individually as joint owners, but their relation to the Pilotage Authority is not mentioned in the register. The Bill of Sale to the Crown dated December 9, 1959, was effected by the Commissioners in their individual capacity and as joint owners; no mention appears in the deed as to their official function of Pilotage Authority (Ex. 1427(u)(4)).

(c) *Right to Own Real Estate*

Prior to 1959, the Pilotage Authority was the owner of two waterfront lots Ten (10) and Eleven (11) Block One (1) of Section Ten (10) Block Three (3) North Range Seven (7) West Plan Two Hundred and Forty-nine (249) New Westminster District, that is, at Steveston. While the title of the acquisition was not obtained (Ex. 1427(u)(8) is the transfer from the Duncan estate to Jack Matthews Warren personally on May 16, 1957), there is a "Certificate of Indefeasible Title" in the name of Jack Matthews Warren as owner, dated June 25, 1957 (Ex. 1427(u)(9)). The deed of sale or transfer from Mr. Warren to the Crown was not obtained. As shown by Order in Council P.C. 1962-1826 (Ex. 1427(u)(10)), this land was later transferred from the Department of Transport to the Department of

Public Works for management, charge and direction. This land was never registered in the name of the Pilotage Authority, and the capacity in which the registered owners acted is not disclosed in the titles.

(d) *Contracting Powers—Lease of Berthing Facilities*

The Pilotage Authority leased from the Minister of Lands and Forests for the Province of British Columbia, lot 6363—the piers and berthing facilities in front of its real property described in (*c*) above, i.e., lots 10 and 11.

However, the lease, dated June 13, 1953, was not in the name of the Authority but of Alexander Sutherland Duncan (Ex. 1427(u)(4)). A second lease dated May 16, 1957, also contained the transfer from the Duncan estate to Jack M. Warren personally (Ex. 1427(u)(5)). On February 12, 1960, the Province of British Columbia "reserved and set apart (this lot) for the Department of Transport, Canada, as a boat mooring site for so long as required for such purpose". Here, again, the name of the Pilotage Authority never appeared in the title.

(e) *Contracting Powers—Subletting*

A portion of lot 6363, on lease from the British Columbia Government, was sublet to Imperial Oil Ltd., first on June 13, 1953, for a term expiring December 31, 1955, and then again on September 15, 1955, for a new term expiring June 10, 1963 (see endorsements on the Head Lease, Ex. 1427 (u)(6)). These subleases were made by the Pilotage Authority. The terms and conditions of the renewal of the sublease were discussed at various meetings of the Pilotage Authority in 1955 and an agreement was reached (at the Pilotage Authority's meeting of November 4, 1955) on a monthly rental of $75 for a period of eight years. The rent was credited to the Superannuation Fund (meeting February 28, 1956) and, after the abolition of the Superannuation Fund, this rental revenue was credited to the general account (meeting November 4, 1958, Ex. 1427(s)).

Despite the foregoing, the name of the Pilotage Authority does not appear on the sublease dated September 15, 1955 (the previous lease was not obtained) (Ex. 1427(u)(7)). The sublease is granted by Alexander S. Duncan personally.

(f) *Right to Own Movable Property*

Aside from the question of the pilot vessel, the Pilotage Authority has owned, and still owns, some movable assets. At the end of 1963, these were valued at $1,349.99 and were made up of office equipment, i.e., desks, typewriters, etc. (Ex. 152-1963). These are necessary for the operation of the District and, therefore, their purchase price is part of the operating expenses. Although no purchase documents were filed, it is logical

to assume that the purchase of these small items was effected in the name of the Pilotage Authority. On none of these occasions was the approval of the Governor in Council obtained.

(g) *Contracting Powers—Purchase of Goods and Services, Hiring of Personnel, etc.*

The Pilotage Authority is currently contracting with third parties for the purchase of necessary supplies, e.g., stationery, food for the pilots in the pilot vessel, etc. At the pilots' request, the Authority approved the purchase of eight two-way radio sets for use by the pilots at a total cost of $436.80 (meeting February 7, 1964).

The Authority rents the premises it occupies at New Westminster. This is part of its operating expenses. The rent was raised from $75 to $84 per month by the landlord effective January 1, 1964 (meeting February 7, 1964).

(h) *Right to Sue and be Sued*

There is no evidence to the effect that the New Westminster Pilotage Authority was ever a party to any litigation except that once it appears to have filed a proof of claim of $184.75 for dues owed by a bankrupt steamship company (Alaska Freight Lines of Seattle) for two invoices for services performed in March, 1959, (Commission's meetings August 21 and October 15, 1959, Ex. 1427(s)). The collection of pilotage dues is effected in the name of the Authority (see invoice form, Ex. 154).

COMMENTS

The various contracts made by the Pilotage Authority with regard to the pilot vessel, the lease of property for the mooring station at Steveston and the subleases and all the contracts related to this lease were illegal because to operate a pilot vessel service is not among the powers granted by the Act to the Pilotage Authority. However, because this is part of fully controlled pilotage and because it meets a definite requirement of the service, this Commission has recommended in its General Recommendations that these powers be granted to the Pilotage Authority (vide Part I, General Recommendation 14, pp. 495 and ff., and General Recommendation 18, p. 514).

The indirect method the Pilotage Authority had to adopt to enter into contracts and to own property clearly indicates how uncertain it was regarding its status as Pilotage Authority and the powers derived therefrom. This situation would be clarified if the Commission's General Recommendation 18 is implemented and the Pilotage Authority is given officially the status of a corporate body (Part I, p. 510).

(2) Secretary to the Pilotage Authority

The Secretary to the Pilotage Authority manages the business of the District and directs the pilotage service in the District (By-law, subsec. 3(1)).

He is in charge of the assignments of pilots (p. 340) and financial administration, including pooling pilots' earnings and dividing them into shares (p. 361). He does not possess or exercise any disciplinary powers (p. 334).

There are no written standing orders, but some temporary orders are in writing, e.g., the annual vacation list and the pilots' order of assignment.

The Secretary keeps a register of all assignments showing the name of the pilot, the ship, inward and outward pilotage, harbour movages, etc., and charges for detention, cancellation and transiting the railway bridge.

4. PILOTS

(1) Recruiting and Qualifications of Pilots

There is no apprenticeship. Pilots are recruited directly from mariners who are not only qualified generally but also possess the required local knowledge.

When more pilots are needed, an advertisement is placed in the local newspapers. The Pilotage Authority does not have a waiting list of applicants but does keep applications on file. In addition to the advertisement, applicants whose names are on file are notified that there is a vacancy but they are not given any priority.

The latest advertisement was placed in the local papers October 25, 26 and 27, 1962 (Ex. 1525(b)). It was to fill one vacancy and it brought in 37 applications, of which only 12 had the necessary qualifications. Of the remaining 25, the majority lacked sufficient required experience and some were either over age or under age.

The Authority first examines the credentials furnished by the applicants and determines which ones meet the basic requirements of the By-law. During the last few years, the active pilots have been given the opportunity to inspect the applications received and give the Authority their comments. Then a Board of Examiners, as provided for in the By-law, is set up to examine those who possess the basic requirements.

The Secretary of the Pilotage Authority acts as Secretary to the Board of Examiners. For the examination held in 1962, the Board consisted of the assistant to the examiner, masters and mates, representing the Department of Transport; one pilot from the Pilots' Committee; a Master Mariner operating on the Fraser River, who represented a local company; and one member of the Pilotage Authority. There is no written examination but the verbal one covers all subjects. The results are given to the Pilotage Authority who makes the final selection. The candidate with the highest marks has always been selected, provided he meets all other requirements,

such as good conduct and physical fitness. For instance, the successful candidate in 1958 failed the medical examination and was not accepted.

The selected applicant is issued a probationary licence for a period of one year. During his first thirty days, he is not given a piloting assignment but is assigned to other pilots to observe and learn, particularly handling deep-sea vessels with which he is generally not familiar since his experience has usually been confined to tugs. There is no stipulated number of such assignments, but the probationary pilot is expected to gain as much experience as possible during this period.

After thirty days, he is given independent assignments commencing with those that are comparatively easy and progressing to those that are more difficult. He usually begins with daylight piloting involving easy berthing and movages. In about six months, he will pilot a ship through the railway bridge and for the remaining months of the year he will pilot throughout the District.

The Secretary of the Pilotage Commission stated that the above-mentioned method of training a probationary pilot is not covered by the District By-laws but that it developed over the years in the belief that, with the safety of navigation in mind, a pilot must know the area thoroughly and be well versed in ship handling before he is given an independent pilotage assignment. He added that an exception might possibly be made for a pilot who had previously worked regularly on the Fraser River.

The pilots as a group follow the performance of the probationer, consider his ability at their meetings and decide what recommendations they should make to the Pilotage Authority about the assignments he should be given as his training progresses.

The probationary pilot is paid 75% of the remuneration of a regular licensed pilot, i.e., a $\frac{3}{4}$ share in the pool, during this first year in accordance with subsec. 10(2)(c) of the General By-law. Prior to the 1962 By-law, sec. 11 of the 1930 By-law (Ex. 1427(g)) left it to the Authority to determine the remuneration of the probationary pilots, provided it did not exceed 75% of the amount payable monthly to regular pilots. The minutes of the Authority's meetings (Ex. 1427(a)) show that on January 4, 1956, the successful candidate was "offered the position (of probationary pilot) at a salary of $400 per month for the first six months and at the rate of 75 per cent of a pilot's share for the remaining six months of his probationary period".

At the end of one year, provided the pilots and the Secretary make favourable recommendations, the Pilotage Authority grants the probationary pilot a permanent licence. No probationary licence has ever been withdrawn. The By-law does not authorize the issuance of any other type of licence, but an annual licence for pilots between the age of 65 and 70 as authorized by sec. 338 C.S.A. may nevertheless be granted (Part I, p. 267). Subsec. 27(5) of the By-law deals with the required medical examination.

Certificates of Competency held by the seven active pilots in 1963 were (Ex. 173):

2—Master of a foreign-going steamship;

1—Master of a passenger steamship in the home trade;

1—Master of a tug in the home trade, 150 tons;

3—Master of a tug.

Captain H. L. Gilley, the Senior Pilot at the time (retired September 16, 1967), commented that the average Master Mariner would take considerably longer than the average tugboat Master to become familiar with the river. He added that all seven pilots licensed at that time had tugboat experience; three former pilots were deep-sea Master Mariners but all had had some training in tugs on the Fraser and, in his opinion, their deep-water certificates were of no assistance on the river. When he, himself, joined the service, he had had 13 years previous service in tugboats operating mostly on the Fraser River and he had never had an ocean-going command. He felt that he was like the other pilots of the District and that he had done well with experience in tugs only. The pilots' record is evidence of their qualifications. It is true that when he joined the pilot service from tugboats there was "a big difference between handling tugs and handling cargo ships" although vessels were somewhat smaller then. But it did not take him long to get accustomed to them and he felt that all the pilots on strength handle ships very well. Captain Gilley was of the opinion that their system of recruiting and training is adequate and that they do not need an apprenticeship system, apart from the probationary year now in use.

Once the permanent pilot licence is issued, the holder is unlimited with regard to tonnage, size or type of ship. Permanent pilots are all one class. The Authority has no power under the present By-law to oblige a licensed pilot to acquire new technical knowledge and experience. In 1964, the pilots requested permission to attend a Radar Simulator Course at the Vancouver Vocational Institute, which was granted (meeting of February 26, 1964, Ex. 1427(s)).

COMMENTS

It is noted that actual experience on the Fraser River is not made a prerequisite to admissibility as a candidate, and a candidate who has had actual experience in command of a vessel in District waters is not given precedence over one who has not (By-law subsec. 12(g)). Since the navigational problems met on the Fraser River are not encountered elsewhere on the B.C. Coast, it would appear that this provision (which is modeled on subsec. 15(g) of the B.C. District By-law) is deficient in this respect, particularly since there is no apprenticeship. It is true that local knowledge

is the most important part of the oral examination, but there is no guarantee the candidate possesses the required skill, i.e., the practical competency and experience to navigate in the District.

The adequacy of the training of pilots to handle large ships should be carefully looked into. The New Westminster pilots seem to be meeting difficulties where pilots of other Districts and other experienced mariners find few problems after proper training, e.g., navigation with tug assistance and piloting bridge aft ships. It might be found that the progressive training in the handling of large ships prescribed for former tugboat Masters during the first part of their probationary period as pilots is insufficient to make them as expert ship handlers as they ought to be, especially on the Fraser River where ship handling is not only as important as local knowlege but more important than anywhere else on the B.C. coast.

For other comments on the qualification requirements and the apparent discrimination against holders of ocean-going certificates of competency, reference is made to Section One, pp. 72-74, referring to the B.C. District system to which the New Westminster system is very similar.

(2) Pilots' Committee and Pilots' General Meetings

The six or seven New Westminster pilots are not grouped in any association or corporation, although they are all individually members of the Canadian Merchant Service Guild, in addition to being represented by their own Pilots' Committee established under the District By-law (sec. 5).

The Pilots' Committee is a three-member committee elected annually as prescribed by sec. 5 of the District By-law. It is the practice to hold elections at an Annual General Meeting in January. This meeting is attended by all the pilots. Since they are a small group who work well together, everything goes smoothly. Nominations are made by motion and voted on by a show of hands.

The Pilotage Authority plays no part in the appointment of the Committee; its Secretary is merely informed by the pilots that the Committee has been elected and who its members are.

Committee meetings are not held regularly but only when business requires. However, it is an unwritten rule that the Committee meets at least once a month.

At these meetings, any subject that concerns pilotage and pilots is dealt with, e.g., a recommendation to the Authority about the schedule of annual leave; a recommendation to the Harbour Authorities about permissible draught as a result of silting that has been reported by a pilot; a recommendation to the Authority on the assignments that should be given a probationary pilot. One of the main topics at the end of 1962 and beginning of 1963 was the brief to be presented to this Commission.

The Pilots' Committee does not handle any funds. When "bonuses and presents" (p. 367) are voted, these and other disbursements are paid by the Authority out of the Pilotage Fund.

The Committee makes a written annual report on its activities. This report is read at the Annual General Meeting and is also forwarded to the Pilots' Committee of the Canadian Merchant Service Guild. It is not a report to the Pilotage Authority.

It has been stated that the Pilots' Committee serves its purpose as liaison between the pilots, either as a group or as individuals, and the Authority. It obviates the problem of six or seven men facing the Authority with petty problems and complaints which can very often be solved at the Committee level. Furthermore, one of the main duties of the Committee is to advise the Commissioners on nautical matters.

Regular General Meetings of all the pilots are not held, aside from the Annual General Meeting in January at which the Pilots' Committee is elected. Other meetings are arranged when there are subjects for discussion and the service permits.

(3) Leave of Absence

Annual leave, temporary leave and sick leave are provided for in sec. 26 of the By-law.

For their thirty-day annual leave the pilots prepare a schedule which they recommend to the Authority. After consideration, the Authority makes its own decision which is issued as a written order.

Although there is no provision in the By-law for days off during any month, the pilots arrange among themselves to take three or four days off. This was increased to five at the pilots' request (Authority's meeting February 26, 1964, Ex. 1427(s)) workload permitting, the remaining pilots doing all the work. This procedure has the approval of the Pilotage Authority. The extent of time off varies according to the pressure of work and in peak periods off-duty time is cancelled. While this monthly leave is not specifically provided for in the By-law, it could come under subsec. 26(2) which enables the Authority to grant temporary leave of absence "at such times and on such conditions as the Authority determines".

During unofficial monthly leave, the names of the pilots are kept off the roster, but they are liable to be called if the remaining pilots can not meet the demand for service.

The sick leave provisions of the By-law (sec. 26) are adhered to (Ex. 1427(o)). As of March, 1963, leave with half pay or without pay had not been granted since 1957 and the total amount of sick leave granted to any pilot in any one year had not exceeded two months. In 1956 and 1957, there were three occasions when pilots had used up their sick leave with

pay and were granted sick leave with half pay and without pay as necessary with a consequent reduction of their remuneration. One pilot who was injured on duty in 1957 was granted leave of absence on full pay for a month in accordance with subsec. 26(9).

(4) Status of Pilots

When the Pilotage Authority assumed control of the pilotage service in 1930 (p. 253) the pilots' status became doubtful. As seen earlier, the same situation arose in other Districts.

The pilots do not consider themselves employees of the Pilotage Authority but self-employed persons, although they recognize that they must abide by the regulations drawn up by their Pilotage Authority. Because they are the experts in their field, they hold that they have the final word in the conduct of pilotage and they complain that they play too small a part in the organization and management of the service. They request a more active share, *inter alia,* in the examination, selection and appointment of pilots.

They consider that the members of the Pilotage Authority's staff are their own employees. In his testimony before this Commission, the Chairman of the Pilots' Committee stated that when the Pilotage Authority operated the pilot vessel service "we also had several men in our direct employ . . . they were pilot boat crews and our office staff". He added that now the pilots have only the office staff as their employees. Using the same false reasoning as the shipping interests when they call the pilots their employees, he explained that the members of the staff are their employees because "we pay for them".

On the other hand, when their private interest requires that they be considered employees of their Pilotage Authority they do not hesitate to call themselves such and take full advantage of that status. This is how they benefit from the Workmen's Compensation legislation of the province of British Columbia. They are also classified as employees for their group medical plan and accident insurance which is available to employees only. Their income tax deductions are made at source, as is done for employees, and all expenses incurred in the course of their duties are reimbursed by the Authority as operating expenses of the District. Similarly, their group expenses, such as health plan premiums, convention charges, cost of food in the pilot vessel, gifts and bonuses, are paid out of District revenues and the earnings they report for income tax purposes are only the net share they have received prior to income tax and Canada Pension Fund deductions. This is treated as salary.

When the question of contracting out a pension plan was discussed, they were reminded by the Department of Transport in a letter dated July 9, 1958, that "the legal relationship existing between the Pilotage Authority

and its licensed pilots is not one of employer and employee" (Ex. 1427 (p)). Nevertheless, in the pension contract they negotiated with the North American Life Insurance Company they are shown as the employees of the New Westminster Pilotage Authority. The Chairman of the Pilots' Committee explained that the question of their status created difficulty with the insurance company because the pension plan it was able to furnish applied only to employees. It was finally concluded that they were employees and some justification for this decision was found in subsec. 10(5) of the District By-law because individually the pilots have no choice in the matter of fixing the contribution to the pension plan, their Pilots' Committee acts only in a consultative capacity and the contributions are determined by the Pilotage Authority.

Furthermore, the pilots are treated in the General By-law as if they were employees of the Authority; *inter alia,* subsec. 10(3) fixes their remuneration and sec. 26 provides for leave of absence with pay, with half pay and without pay. The minutes of the pilots' meetings indicate that they themselves refer to their remuneration as being a salary, e.g., at a meeting held February 23, 1961, they considered the question of "termination holiday pay for pilots retiring" (Ex. 158).

The pilots in the New Westminster District have the ill-defined and ambiguous status of *de facto* employees of their Authority. (For comments, vide Part I, page 82.)

However, they have the right concept of their status in relation to the Master when on board ship (vide Part I, pp. 26 and ff.). Pilot H. L. Gilley considers a pilot a person who, because of his local knowledge, is qualified to take charge of a ship entering or leaving harbour, or navigating on a river or in coastal waters. A pilot is an adviser to the Master and knows that it is always the Master's privilege to take over while he is in charge of navigation. The Master never relinquishes command even when he requests a pilot to navigate.

The Chairman of the Pilots' Committee in 1963, Pilot O. B. Spier, stated that the duty of the pilot to the Master is the safe conduct of his ship from one place to another.

The Harbour Master in 1963, Captain J. W. Kavanagh, stated that he knew of several occasions when a Master had not followed a pilot's advice about berthing or departing but these had not resulted in accidents. He acknowledged, however, that these instances were not comparable to transiting the railway bridge. S.S. *Picardy* was mentioned as such an example. The Master and the pilot disagreed whether she should be berthed starboard side to or port side to in New Westminster. The Master took over from the pilot and berthed the ship without incident. (Re status of the pilot on board, vide Part I, pp. 22 and ff.)

(5) Pilots on Strength

At the time of the Morrison Commission in 1919, there was only one pilot on strength in the District. Since there was not enough traffic to produce adequate remuneration, he had to be paid by the municipal authorities of New Westminster. In 1947, when Captain Slocombe made his survey, there were four pilots on strength. In 1952, there were five pilots and their number was increased to seven the following year. In 1967, it was reduced to six when the vacancy created by the retirement of Pilot H. L. Gilley was not filled.

On May 6, 1968, the Secretary of the Pilotage Authority reported as follows (Ex. 1525(f)):

> "We are presently operating with 6 pilots on a trial basis. The pilots requested a delay in the appointment of another pilot to see if the downward trend in shipping will continue. Also, to see what effect the proposed establishment of the super-port at Roberts Bank may have on this port".

A temporary licence was issued April 1, 1963, to retired Pilot Mungo Duncan, then 62 years old, for the period ending June 30, 1963, to act in an emergency or on special occasions, a special remuneration to be arrived at, if and when his services were used. However, he was not employed as a pilot and, since there did not seem to be any necessity for an emergency pilot, his temporary licence was not renewed (Ex. 1427(x)). However, no mention of this temporary licence appears on the Pilotage Authority's 1963 annual report (Ex. 149). There is no provision in the present General By-law for issuing such a temporary licence and there was none at that time. Therefore, this temporary licence was void.

In 1952 or 1953, the pilots requested an increase in their number because their workload was too heavy. This request was studied and granted by the Authority which was able to appreciate their workload from statistical information provided from their records. Unlike the regulation in the British Columbia Pilotage District, sec. 4 of the By-law does not require prior consultation with the Pilots' Committee before changes are made in the pilots' establishment but, as seen above, this is done in practice.

(6) Administrative Inquiries, Reappraisal and Discipline

Since the Minister of Transport is not the Pilotage Authority in the New Westminster District and also because the Department of Transport's policy is to avoid involvement in the affairs of Commission Districts, there is no possibility of confusion between the powers of the Minister of Transport and those of the Pilotage Authority with regard to investigation, nor is there any likelihood that the Pilotage Authority could succeed in making the Minister use his powers of investigation in matters that primarily concern the Pilotage Authority, such as enforcement of discipline. It is also to be

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expected that, if and when the safety of navigation is involved, the Minister will act *proprio motu* under Part VIII C.S.A.

In fact, it does not appear that any inquiry under Part VIII C.S.A into a casualty involving a New Westminster licensed pilot, or into the fitness of any District pilot (Exs. 1525(b) and (e)), has ever been carried out, at least not within the last ten years.

On the other hand, no investigation, properly speaking, is ever carried out by the Pilotage Authority or by any one on its behalf. Up to the time of the Commission's hearings in New Westminster in March, 1963, no use was being made of the Casualty Report Form which the pilots are supposed to complete every time they are involved in a shipping casualty or in any unusual navigational incident as required by subsec. 20(3) of the District General By-law. Since all casualties and incidents have been of a minor nature, the verbal reports made by the pilots to the Pilotage Authority's Secretary were considered sufficient. In fact, the minutes show that every such casualty or incident was studied by the Pilotage Authority at its regular meetings. It would appear that the Commission made no inquiry itself and heard no witness nor any party involved but considered the matter on the basis of the report made by its Secretary. Since 1963, however, the written report form has been used.

In the New Westminster District, as elsewhere, reappraisal is confused with discipline and, according to its By-law, the Pilotage Authority purports to have disciplinary power over its pilots for any breach of regulations. The By-law does not contain any delegation of such alleged power to the Secretary, but this is logical since the Pilotage Authority is always readily available in the District. In practice, no use has been made of this disciplinary power as far as can be ascertained. In the last twenty years, no disciplinary action whatsoever has been taken against a pilot nor has any charge ever been laid for the violation of any statutory provision before a court of penal jurisdiction (Ex. 1525(e)).

The pilots' right to strike was unofficially recognized when they went on strike November 25, 1959 (vide pp. 357 and ff.) and refused to take any assignment from the Pilotage Authority, in that no disciplinary action was taken.

Up to 1963, no record was kept of shipping casualties and incidents. They are now listed in the Pilotage District Annual Report in the space allocated since then for that purpose.

Appendix C is a breakdown of the 31 casualties and incidents reported since 1956. They are grouped following the method described on pp. 115 and 116.

In the minutes of the Pilotage Authority's meetings (Ex. 1427(s)) for the years 1955 to 1963 inclusive, five casualties involving pilots are recorded, all of a minor nature:

(a) grounding—S.S. *Hawaian Craftsman* off berth C, Pacific Coast Terminals, 1956;

(b) grounding—M.S. *Dongedyk* off Pacific Coast Terminals, Berth 1-C, in 1958;

(c) grounding—SS. *Burrard* into bar above buoy #35, in 1959;

(d) alleged collision—SS. *Orient Lakes* with tug and boom near buoy #16, February 14, 1961; the tug involved did not stop afterwards;

(e) collision—M.S. *O.A. Brodin* and S.S. *Almavita* with a pilot aboard each vessel and subsequent grounding of S.S. *Almavita,* in 1961.

As seen earlier, the bridge aft M.V. *Kavadoro* touched the pier of the railway bridge while proceeding downstream in 1957. This incident was not reported because there was no reportable damage to the ship or the bridge. However, this incident caused restrictions to be imposed on all bridge aft ships.

The only reportable accident at the railway bridge involving a ship with a pilot aboard occurred about 1934 when an eight-knot ship proceeding downstream through the bridge at freshet time was carried too far north by the current and struck the protection work with her counter. (Vide p. 370.)

Apart from the minor casualties and incidents that occur while berthing or unberthing, most others are related to the specific hazards of navigation on the Fraser River, i.e., collisions or near collisions with fishing vessels and scows, and groundings with no damage to the ship. It would appear that they can be mainly attributed to the maximum use made of the available depth at any given moment and the ever changing conditions of the channel.

(7) Working Conditions and Responsibilities

For the same reasons as in the British Columbia District (p. 112), ninety per cent of pilotage assignments in the New Westminster District occur at night; when adverse conditions prevail, they may last for many hours.

When the pilots are on "stand by", they consider themselves on duty because they are not free to do as they wish but must be available since they are liable to be called at any time. Frequently, they are called on their days off, particularly during the foggy season.

The pilots often have to spend long periods in the pilot vessel off Sand Heads, especially when ships are delayed. Because they have to wait on board, there is usually insufficient time between assignments for the pilot vessel to take them back to the Steveston pilot station. For the same reason, disembarked pilots also have to wait and, at times, there are four or five pilots in the pilot vessel. On one occasion, all seven District pilots were in the pilot vessel at one time.

If a ship is ready to depart but tidal conditions are not favourable, the pilots notify the ship's agent or the despatching office and do not go on board until the departure time they had set. Occasionally, if a ship is to

depart early in the morning, the pilots sleep on board to be ready at the agreed hour. If the weather is unfavourable at the planned time, they may have to remain on board or they may be able to go ashore in New Westminster. They watch the weather carefully and can rejoin the ship very quickly. No record is kept of time spent in this way because only departure time counts for the computation of pilotage dues, but waiting for the tide and the weather constitutes part of their duties and workload.

Also, if a Master wants to arrive at a special time, the pilots frequently board at Sand Heads and anchor for several hours to wait for a suitable tide.

Although most vessels are equipped with all the necessary navigational aids, such as radar and gyro compass, some still are not and, at times, even if these instruments are carried, they are under repair and not available for use. However, the New Westminster pilots place little reliance on the gyro compass—they must depend on their own vision because they are navigating in restricted waters. The pilots stated that they use these instruments as aids and guides only, but find them of considerable help. In their experience, modern radar sets are usually reliable but are sometimes in error. Captain Gilley reported that he had piloted a ship three or four miles on radar alone when he had no other visual means of communication with the shore and when he knew there was no other traffic in the vicinity. However, the pilots do not make a practice of depending on radar alone because they can not run a course of more than a mile and a half on the Fraser River before they are obliged to make a turn.

The pilots in the New Westminster District use echo sounding machines only when they anchor at the mouth of the river. They find these devices of no assistance when they are under way.

Occasional language difficulties have been experienced with foreign officers but the pilots are prepared and pay special attention to ensure that the officer of the watch and the helmsman interpret their orders correctly. The pilots give orders directly to the helmsman but sometimes the officer of the watch repeats the orders. If translation is needed, the pilots have to take into consideration the delay involved.

The pilots have no problems with quarantine and pratique. About once in five years a ship has been delayed while a medical officer made a quarantine inspection.

The pilots also act as advisers to the Pilotage Authority on nautical and pilotage matters.

The nature and organization of pilotage is profoundly affected by the peculiarities of the District waters. In addition to being required to take charge of the navigation of vessels when so requested, the pilots are called upon to act as advisers to Masters prior to sailing time. The pilots also

advise shipping authorities about the times of ships' movements and departures, which are controlled by the stage and range of the tide on account of the shallow channel. The pilot who is assigned to a ship for her inward voyage remains assigned to that ship throughout her stay in the District because of the knowledge he has acquired of her characteristics. He advises the Master or Agent on the permissible draught for different dates and tides. If it is desired to increase the draught, the pilot is consulted to set a suitable departure time. In this District, it is customary for the pilots to tender such advice and they consider it part of their duties to do so. The pilots estimated that they spend on the average half an hour to an hour per day calculating draught and sailing times. While any single calculation does not take long, they may have to repeat the work over a number of days because a ship's departure has been delayed.

The Vancouver Chamber of Shipping acknowledged the fact that the pilots have always been very co-operative in this respect. The pilots are frequently asked for information about local conditions. They have always been very helpful and have provided excellent information.

5. PILOTAGE OPERATIONS

(1) Pilot Stations[8]

Because the District is relatively small, it is generally agreed that one pilot station centrally located in New Westminster is all that is required. This, however, is primarily a matter of internal arrangement, the governing factors being the pilots' working conditions and operating costs, provided shipping will not suffer any inconvenience as a result of the internal arrangements adopted.

(2) Pilot Boarding Station[8]

Since the District consists of all the navigable waters of a river, there is only one pilot boarding station. It is located off the mouth of the Fraser one mile to seaward of Sand Heads and about seven miles from the pilot vessel mooring wharf at Steveston.

The pilots board and disembark at the various deep-water berths in the District. They seldom disembark from, or board, a ship at anchor because, if a ship must anchor on account of adverse conditions, the pilot is generally required to remain on board for security reasons. In this District, there is no need to embark or disembark beyond its limits because vessels must pass through the seaward boarding station on all inward and outward voyages.

[8] For the definition of "pilot station" vide p. 91, and "boarding station" vide p. 98.

(3) Pilot Vessel

Pilot vessel service at the seaward boarding station is provided only by *Canada Pilot No. 24*—a sturdy, well-manned vessel for which the pilots have nothing but praise. Their only complaint is that there are not two vessels since they often have to spend long hours at sea in the existing one waiting for their assignments.

In 1959, the Department of Transport assumed ownership of, and operational responsibility for, the pilot vessel (p. 322) and increased the boat charges from five dollars per trip to ten dollars, effective July 28, 1960.

The Pilotage Authority's first pilot vessel was built in 1933 and later sold. The second, *Fraser Pilot No. 1,* later renamed *Canada Pilot No. 24,* was constructed in 1937.

In 1958, when the Steamship Inspection Service of the Department of Transport reclassified it as a Class 3 Passenger Vessel, it had to be refitted and manned with two two-man crews, i.e., two Captains and two deck-hands alternating. The vessel was rebuilt at a cost of $25,000. The financial burden imposed on the Pilotage Authority and the pilots by this expense, combined with the Department of Transport's delay in fulfilling its promise to have the pilot vessel service taken over by the Federal Government, resulted in the pilots' strike in November, 1959 (p. 357), the only one on record by the New Westminster pilots.

In November, 1959, the Department of Transport assumed responsibility for the pilot vessel service. For the nominal price of $1 it took over the ownership of the vessel and the waterfront property at Steveston which was also owned by the Pilotage Authority and used as the pilot vessel mooring station. The Pilotage Authority received no other reimbursement for its capital expenditures, except that the Department paid the $16,700 outstanding balance of the $25,000 bank loan the Authority had borrowed the previous year (p. 322).

The assumption of the New Westminster pilot vessel service by the Department created a precedent because, until then, the Government had never provided any direct or indirect financial assistance to a District where the Minister was not the Pilotage Authority.

Because the pilots are sometimes obliged to remain in the pilot vessel for several hours, they keep a supply of food on board. They each paid five to seven dollars a month out of their own money and, at one time, the pilots even supplied food for the vessel's crew. Now, all or part of this expense is borne by the District, as is shown by an item that first appeared in the 1963 Financial Report (p. 367).

The pilots recommend that a second pilot vessel be provided to obviate their long delays in the boarding area. Because the pilot vessel mooring station at Steveston is some seven miles from the boarding area off Sand Heads, one

pilot vessel can not maintain a shuttle service between the two points to accommodate the pilots individually when they board or disembark. Therefore, all the pilots who are required to serve incoming traffic during a certain period assemble in the pilot vessel at Steveston and remain on board until their assigned vessels arrive. Pilots who disembark from outbound vessels are obliged to wait in the pilot vessel until the pilots for inbound vessels have all taken up their assignments. At times, four or five pilots are kept on board for five or six hours and there have been occasions when the pilot vessel carried more than the permissible six passengers.

The direct cost to the Government for the operation of *Canada Pilot No. 24,* not counting material depreciation, has been:

Year	Maintenance and Operating Costs	Wages and Allowances	Total	Revenues from Pilot Boat Charges	Operational Deficits
1962.....	5,688.73	30,101.48	35,790.21	10,420.00	25,370.21
1963.....	3,999.82	28,631.49	32,631.31	10,930.00	21,701.31
1964.....	5,831.28	32,376.09	38,207.37	11,850.00	26,357.37
1965.....	5,565.99	32,968.33	38,534.32	11,580.00	26,954.32
1966.....	8,814.92	36,727.60	45,542.52	9,550.00	35,992.52
1967.....	10,333.86	40,039.76	50,373.62	9,240.00	41,133.62

SOURCE OF REFERENCE: Ex. 197 (1962–67) "Maintenance and operating costs—Pilot Boats" re "Canada Pilot No. 24", and Ex. 152.

These costs together with those of supplying radiotelephone equipment (p. 325) to the pilots commencing in 1966 are the extent of Government subsidies to this District.

COMMENTS

The pilot vessel service is adequate for the existing and foreseeable needs of the New Westminster pilots but it will not suffice if and when the Sand Heads boarding station is made the common changeover point for American and B.C. District pilots as well (vide B.C. Recommendation 2).

Re the adequacy of the service for present needs, it is worth noting that the pilots themselves found one pilot vessel adequate when pilot vessel service was being provided by the Pilotage Authority and its cost was paid out of District revenues. In addition to the initial purchase or building costs, a second pilot vessel would double the service's gross operating expenses which, in 1967, were $50,373.62 for one vessel.

The reason advanced by the pilots in support of their recommendation does not justify such large capital and recurring expenditures. Furthermore, the extreme situation the pilots described is now less likely to occur because the number of vessels employing New Westminster pilots is decreasing.

(4) Despatching

The District By-law (subsec. 18(4)) requires every pilot before departing for duty to "obtain from the pilotage office information as to the state of the buoys, beacons and channels". This information, which the Secretary and his assistant gather from various sources, e.g., pilots returning from assignments and Notices to Shipping, is posted on a board in the despatching office and also kept in a special register. The pilots are required to sign the register to acknowledge that they have been informed but, if they have been given the information by telephone, the despatcher makes an appropriate entry. This procedure assumes special importance in the New Westminster District because navigational conditions in the river change frequently.

The despatcher maintains an assignment list, or roster, where the names of all the pilots who are not on leave are placed in the order in which they will be called. The procedure is to despatch a pilot to a vessel for the duration of its stay in District waters, and not, as is customary with the tour de rôle procedure, for a single inward or outward trip, or for a movage. When a pilot is assigned to a vessel for its inward trip, he becomes responsible for its subsequent movages and outward trip. The reason given for this local arrangement is that the pilot who has navigated a ship upriver is considered to be more familiar with her than the other pilots. It may well be that the main reason for this procedure is custom, the practice having been established during the days of free enterprise when the pilot who first spoke to a ship on her inward voyage became her pilot for the duration of her stay in the District. At that time, this right was formally recognized in the District By-law (p. 252). When a pilot completes an inward trip, his name is placed at the bottom of the list.

However, before a particular vessel is ready to depart, the pilot assigned to it may have piloted in two or three others for which he would be considered responsible, thus causing occasional conflicts. These are settled by giving priority to the first vessel ready to depart. If two or three are ready at the same time, a pilot would take the first one he had brought in, the next pilot on the roster would take the second, the following one the third and so on, but such assignments do not change their places on the roster. If there is a conflict between an outward departure and a movage, the pilot responsible for the two ships will take the departure and the pilot next on roster will take the movage.

The same procedure is applied to ships that transit the railway bridge with the difference, however, that transits upward and downward must be conducted by the same pilot.

The Harbour Master does not control the movement of ships within the harbour because all berths are either privately owned or operated. His jurisdiction extends to the enforcement of the harbour regulations regarding

speed of vessels and anchorages and to grant exceptions to the rules of the road as laid down in the Harbour Commissioners' By-laws, e.g., permission to take the south draw of the railway bridge on an upriver passage. Most ship movements are controlled by the prevailing physical features of the river principally the tides, available depth of water, currents and the railway bridge. Although in most cases the despatcher could analyze the prevailing conditions, it is the practice to ask the advice of the pilot assigned to a given ship or of the pilot next on the roster.

(5) Workload

The pilots in the New Westminster District had no complaints about their workload—their only criticism concerned their remuneration which, they felt, was inadequate for the services they render.

Through the roster system, the workload is divided among the pilots on strength and in the course of a year each pilot has approximately the same number of assignments.

An analysis of assignments for 1961, 1962, 1966 and 1967 (Graph, *Appendix D*) shows that maritime traffic in 1961 and 1962 was spread evenly enough over the twelve months—there are occasional peaks and lows but no set pattern. In 1961, all monthly assignments were within 12 per cent of the yearly average, with the exception of March which was 26 per cent above. In 1962, all months except two were within 11 per cent of the yearly average: there was a high of 15 per cent above the annual average in November and a low of 21 per cent below in September. In 1966 and 1967, however, there was greater disparity. In 1966, the first 6 months were all above average with a peak of 19.5% over average in June but the six months of the second half of the year were all below the yearly average with a maximum low in November of 24.4% below average. In 1967, the pattern was somewhat similar with a 26.9% peak above average in January and an 18.1% low below average in July (Ex. 1525(c)).

This new pattern can not be attributed to any specific cause. In his letter dated May 14, 1968 (Ex. 1525(c)) the Secretary of the Pilotage Authority made the following comments:

> "You will note the steady decrease from the high in 1964. This undoubtedly is partly due to the increase in the size of the vessels; the trend to the large bulk carriers.
>
> There was a strike of Longshore Foremen of about 3 weeks duration in November and December of 1966. This would account for the sharp drop in November and also for the large increase in January and February, 1967. Other than this the fluctuations seem to be the natural trend of shipping. Worldwide conditions, markets, etc., would most likely be the governing factors."

The average number of assignments including movages, for the busiest month in 1961, was 20 per establishment pilot compared with the monthly

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average of 16; for 1962, 16.4, compared to 14.3; for 1966, 15.1 compared to 12.7; and for 1967, 15.7 compared to 12.9.

During the 17 year period 1950-1967, the peak year was 1960 with 1384 assignments (yearly average per pilot per establishment 197.7) and the lowest year was 1950 with 848 assignments (yearly average per pilot 169.6) (Ex. 1427(q)). The years 1966 and 1967 are the lowest since 1960 with a total of 1,037 assignments each (yearly average 148.1 per pilot for 1966 and 154.8 for 1967). For fluctuation of the aggregate number of assignments on a yearly basis for the period 1958-1967, vide Graph B and accompanying tabulation.

The average number of total assignments on a weekly basis per establishment pilot in the last decade has never exceeded four. In the peak year, 1960, the weekly average was 3.8 assignments and in 1966 and 1967, it was respectively 2.9 and 3.0. Despite the fact that, as seen above, the number of assignments is fairly equally divided throughout the year, such average figures can not be true at any given moment because, if this were so, the pilots' strength could be reduced to 2 or 3 pilots who still would not be overworked. There are day-to-day fluctuations in the demand, and peak periods are followed by periods of low demand. In the District of New Westminster, as elsewhere, it is the expected periods of high demand that determine the number of pilots required on strength. Since pilotage is a service to shipping, pilots should be available in sufficient numbers to meet predictable peak demands during which they should be expected to work longer but not unreasonable hours.

Very little evidence was given about the normal duration of the various assignments, probably because this was not the point at issue and the pilots were not complaining of overwork. The average time on board ship per assignment, i.e., between ordered time and arrival time, is less than four hours per assignment. The New Westminster Pilotage Authority has calculated an average of three hours' piloting time per assignment. All assignments including movages were used to arrive at this average (Ex. 1525(h)). From the information contained on source forms completed by the pilots, the Department of Transport calculated that, in the four years from 1957-58 to 1960-61 inclusive, the pilots had spent on board ships during each of these years a total of 4,199 hours, 3,767 hours, 3,900 hours and 4,613 hours respectively. When these are divided by the aggregate number of assignments including movages (respectively 1,223, 1,083, 1,121 and 1,312) the average time per assignment for each of these years is found to be 3.44, 3.48, 3.47 and 3.51 hours. The break-down between trips and movages is not available but, as can be readily seen, the average time for trips alone would only be a few minutes more. For instance, in 1960-61, if the 182 movages are disregarded and the total number of hours attributed to trips alone, the resulting average would be 4.08 hours (Ex. 155). Here again, such average figures

are not truly representative of the time on duty for any given day or week. There is the occasional assignment which takes much longer when special adverse conditions are met. (The pilots reported that once because of fog a ship took four days to reach New Westminster.) On the other hand, occasionally there are trips that are faster than the average.

Here also, as in any other Pilotage District, the pilots' time on duty comprises more than their time on board piloting, because it must include travelling time, waiting time and stand-by time. Except when on leave, the pilots are always on call and must keep the Secretary informed where they may be reached by telephone. The travelling time of the New Westminster pilots is not comparable with that of the B.C. pilots because the former have to travel between New Westminster and Stevenston wharf where they board or disembark from the pilot vessel, or from their residence to the various berths in the New Westminster area. The New Westminster Pilotage Authority has calculated that the average travelling time is three hours per assignment. While the travelling time for movages is considerably less, the travelling time to Sand Heads may be much more, depending on the transportation available. These figures include all time spent travelling, either by land transport or pilot vessel, and waiting time at the pilot vessel wharf at Steveston or aboard the pilot vessel. In other words, it comprises all the time a pilot is away from home on assignment except the time he is aboard ship. Therefore, total time away from home amounts on the average to 6 hours per assignment (Ex. 1525(h)). Furthermore, each pilot may spend some time giving advice on the appropriate time for the departure of vessels at different draughts (pp. 336-337). The Commission does not possess the necessary data to determine with any degree of certainty what these various factors actually represent in terms of time. It is considered that the Pilotage Authority should gather complete statistics on such matters in order to be in a position to appraise the situation if and when the question of workload again becomes an issue. Such statistics would enable the Pilotage Authority to ascertain at all times whether there are enough pilots and to make any necessary changes.

6. PILOTS' REMUNERATION AND TARIFF

(1) Pilots' Remuneration

Preamble

Subsection 10(3) of the District By-law stipulates that the pilots must be paid monthly on the basis of an equal share of the pool. Indirectly it defines the pilots' earnings as the net revenue, i.e., the amount left over at the end of each month "from the amounts paid as pilotage dues", after deducting the expenditures prescribed in subsec. 10(2).

This explains why the pilots feel that expenditures made by, and for, the Pilotage Authority are in reality paid by them, and why they consider the Secretary and his staff (and the crew of the pilot boat when it was a District responsibility) their employees.

(a) *Definition of Individual Pilot's Earnings*

As in other Districts, the definition of an individual pilot's earnings is a matter of semantics and varies with the point of view (vide pp. 132 and ff.).

The full share of a licensed pilot's earnings as shown on Income Tax Form T-4 for the past sixteen years has been:

1952	$ 7,985.00	1960	$14,752.35
1953	9,642.00	1961	14,690.13
1954	10,584.00	1962	12,894.67
1955	9,506.00	1963	14,431.18
1956	7,641.00	1964	15,134.50
1957	10,654.00	1965	14,007.82
1958	9,364.00	1966	11,163.04
1959	7,755.00	1967	14,310.78

SOURCE OF INFORMATION: Ex. 152(1961–1967).

In 1960 and 1961, all seven pilots on strength received a full share but, in 1962, one pilot retired November 30, and thus received only $11,893, and, in 1963, there was one probationary pilot effective January 1 who received 75% of a share, i.e., $10,823.36. In 1964-65-66, there were no probationaries or retirements and all seven pilots received full shares. In 1967, one pilot retired Sept. 16; his share was $12,240.11.

The sharp rise shown for 1960 was due to a marked increase in the number and tonnage of vessels piloted, plus a marked decrease in District expenditures as a result of the Government assuming all costs of the pilot vessel service, which alone brought an increase of over $2,600 to each pilot.

The increase in 1967 is due to a miscalculation in the readjustment of the ton price unit when gross tonnage replaced the net ton in the computation of basic dues. In 1966 and 1967, the number of vessels was almost the same and the total assignments were exactly the same.

Earnings in 1958 and 1959 would have been higher but for strikes by longshoremen and woodworkers. During the two months of the strikes in 1959, the pilots' remuneration fell to $150 a month because vessels were prevented from loading lumber products at Fraser River berths.

In the New Westminster District, as in the other Districts where the pilots have the status of *de facto* employees and are paid through a pool system, what constitutes a pilot's remuneration is always a point of contention and, furthermore, an exact amount is always very difficult to establish (p. 132).

On July 4, 1961, the Department of Transport, in reply to a query from the Vancouver Chamber of Shipping, quoted the net income per effective pilot on the basis of the fiscal year from 1957-58 to 1960-61 as follows:

Year	Number of Effective Pilots	Net Income per Effective Pilot
1957/58	5.58	$12,909.95
1958/59	6.64	9,295.06
1959/60	7	10,202.25
1960/61	7	17,462.89

SOURCE OF INFORMATION: Ex. 155.

The following table indicates the share of District earnings accruing to each pilot for the year 1966. That year was selected as a simple example, because the number of pilots on strength (7) remained constant throughout the year and all were equally effective.

		District Amount	Share per pilot
Total District earnings*		$128,787.98	$18,398.28
Pilot boat charges and radiotelephone fees		10,275.50	
Earnings after deduction of the above		118,512.48	16,930.35
District and service operating expenses		18,685.16	
Net revenue payable to or on behalf of pilots		99,827.32	14,261.05
Pilots' travelling expenses†		10,275.12	
		89,552.20	12,793.17
Pilots' contribution to superannuation		8,305.22	
		81,246.98	11,606.71
Pilots' group expenses paid from the pool‡:			
Canada Pension Plan	554.40		
Health Insurance	525.00		
Travel Insurance	560.00		
Workmen's Compensation	955.59		
Convention and Delegations	210.65		
Pilot vessel-food for pilots	300.00	3,105.64	
Net revenues of the pool divided among the pilots		$78,141.34	11,163.05

SOURCE OF INFORMATION: Ex. 149(1966)

*If the indirect subsidies received from the Government in the form of the operational deficit of the pilot vessel service, and furnishing radiotelephone equipment (not counting either capital costs or depreciation) were to be taken into account, more than $6,000 would have to be added to the pilot's share.

†Each pilot may also derive some revenue from his travelling expenses.

‡There are pilots' group expenses contained in the District operating expense item "Miscellaneous".

(b) *Relation between Pilots' Remuneration and Tariff*

As in the B.C. District, the pilots' income is derived entirely from pilotage dues as established by the tariff. Hence, they are vitally interested in each individual tariff item. The four amendments to the General By-law deal exclusively with the tariff: movage charge (1964); cancellation (1965); the radiotelephone charge added in April, 1966, as a result of the Department of Transport assuming the responsibility and the cost of furnishing the pilots with the required portable radiotelephone equipment; basic charge, east of Pitt River charge and detention (December 1966).

In 1961 and 1967 (Appendix E), District and service operating expenses (pilots' travel expenses excluded) accounted for 19.5% and 21.6% respectively of pilotage earnings (excluding pilot vessel and radiotelephone charges). It is for this sole reason that for many years the New Westminster pilots have urged that the direction of their District be taken over by the Minister as Pilotage Authority. As will be seen later (p. 357), when their pilot vessel was reclassified, the pilots considered that the ensuing financial burden was excessive and sought to have the problem solved by demanding that the Minister become their Pilotage Authority. When this failed, they went on strike (p. 357) until they were assured that the pilot vessel service would be taken over by the Department of Transport. This was the first time that direct financial assistance was given to this District since 1904 when the pilot's remuneration was paid by the City of New Westminster (p. 255). Since then, the Department of Transport has also relieved the District of the cost of supplying portable radiotelephone equipment. This is now the reason why the pilots have again urged that the District be taken over by the Minister of Transport, not because they are dissatisfied with their actual Pilotage Authority but merely for the financial advantages they would obtain.

The individual pilot's remuneration is also affected by the number of pilots on strength. The smaller the number, the greater the workload but also the greater the remuneration. However, in the New Westminster District, an increase or decrease of one in the number of pilots is much more significant than in the B.C. District; proportionally, a change of one in the New Westminster District corresponds to about ten in the B.C. District.

(2) Tariff

At the time of the Commission's hearings in 1963, the basic rates then in force had not been changed since they were established in 1953 (P.C. 1953-641, dated April 23, 1953).

Since the creation of the District the evolution of the tariff has been as follows:

A. The tariff that applied when the District was created in 1904 was the 1894 Yale and New Westminster District tariff. The only provision regarding pilotage dues was a voyage charge for either inward or outward, based on draught only: "From the lighthouse on Fraser Sand Heads to New Westminster:

	Per foot
For vessels under sail	$4.00
For vessels in tow of a steamer	2.00
For vessels under steam	1.50"

B. The only change to the tariff in the 1906 By-law was the addition of net registered tonnage to draught as components for voyage rates which became:

	Per foot	*Per NRT*
"For vessels under sail	$2.00	.01
For vessels in tow of a steamer	1.00	.01
For vessels under steam	1.00	.01"

C. In 1930, the basic voyage rates were not changed but new items were introduced:

(a) a minimum voyage charge	$25.00
(b) an additional charge for proceeding east of Pitt River	$ .50 per foot draught
and	.005 per NRT
(c) movage charges, up to the Railway Bridge	$10.00
up to Pitt River	$15.00
above Pitt River	$10.00 additional charge
(d) a detention charge if the pilot is retained on board by special request of the Master and not on account of an accident for which he is responsible or of stress of weather.	$5.00 per day

D. Between 1930 and 1960, the following changes were made:

(a) in 1948, in order "to meet the increased cost of maintaining the pilotage service"

(i) a $5.00 pilot boat charge was introduced;

(ii) the movage charges were raised by $5.00;

(b) in 1952, a 30% general surcharge was made;

(c) in 1953, the voyage rate was made uniform for all types of vessels; in fact, this amounted to a substantial raise of from one dollar to two dollars per foot draught (the tonnage rate remained unchanged).

E. The 1960 amendment brought the following changes:

(a) The voyage rates for vessels under sail and vessels in tow of a steamer were deleted.

(b) The basic voyage rate was raised to $2.60 per foot draught and 1.3¢ per NRT; the minimum charge and the additional charge east of Pitt River were also raised.

(c) The following items were added: railway bridge transit, dead ship, cancellation and pilot boat charges.

(d) In addition to general increases in the movage charge, a different rate was provided for a daylight movage and a night movage.

(e) The 30% surcharge was abrogated.

F. The next main change was on December 22, 1966, when the gross ton replaced the net ton as a component of the voyage charge, together with draught.

The table on p. 349 shows the various components of the tariff and the yield of each in the years 1960-61, 1961, 1966 and 1967. The figures for the year 1966 have been included in order to show the impact of the modification in the basic rate which occurred December 22, 1966, but whose effects were felt only some time later in 1967. The importance of each item is shown as a percentage of the total earnings derived from the tariff. For complete financial statement for the years 1961 and 1967, vide Appendix E.

(3) Pilotage Dues

(A) *Pilotage Voyage Charges*

Pilotage voyage charges account for 95% of the District pilotage revenues (excluding pilot vessel and radiotelephone charges) (vide table p. 349).

Under the New Westminster District pilotage structure, there are three types of charges that may enter into the computation of dues for pilotage performed during a voyage: basic rate with its minimum charge, additional charges for certain portions of the voyage and special rate if the ship is navigated as a dead ship. In addition, travelling expenses are occasionally added.

	1960/61*		1961		1966		1967	
	$	%	$	%	$	%	$	%
(A) VOYAGES	135,253.02	95.0	131,991.71	95.5	113,609.13	95.8	135,274.67	95.7
Basic Rates	127,657.92	89.6	125,872.86	91.1	110,648.63	93.3	131,958.37	93.4
Tonnage NRT	66,251.12	46.5	65,091.36	47.1	59,545.63	50.2	3,452.64	2.5
Tonnage Gross T.	—		—		—		76,782.63	54.3
Draught	61,406.80	43.1	60,781.50	44.0	51.013.00	43.1	51,723.10	36.6
Minimum Charges	1,560.00	1.1	1,950.00	1.4	942.50	0.8	617.50	0.4
Additional Charges	6,035.10	4.3	4,168.85	3.0	2,018.00	1.7	2,698.80	1.9
Bridge charge	5,687.00	4.0	3,720.75	2.7	1,149.50	1.0	1,815.00	1.3
Pitt River	—		—		—		—	
Dead ships	—		—		—		—	
Travel expenses	348.10	0.3	448.10	0.3	868.50	0.7	883.80	0.6
(B) OTHER SERVICES	6,183.10	4.3	5,190.90	3.8	2,624.00	2.2	3,272.00	2.3
Movages	6,183.10	4.3	5,190.90	3.8	2,624.00	2.2	3,272.00	2.3
Movages to or from East of Pitt River	—		—		—		—	
(C) INDEMNITY CHARGES	992.20	0.7	968.00	0.7	2,401.85	2.0	2,801.50	2.0
Detention	937.75	0.7	895.40	0.6	2,184.05	1.8	2,728.90	1.9
Cancellation	54.45	0.0	72.60	0.1	217.80	0.2	72.60	0.1
(D) SURCHARGE	n/a‡		n/a		n/a		n/a	
TOTAL DUES BELONGING TO PILOTS	142,428.32	100	138,150.61	100	118,634.98†	100	141,348.17	100
Accessory Services	11,610.00		11,320.00		10,068.00†		10,962.00	
Pilot boat	11,610.00		11,320.00		9,550.00		9,240.00	
Radiotelephone					518.00		1,722.00	
GRAND TOTAL	154,038.32		149,470.61		128,702.98†		152,310.17	

*Details not available for the calendar year.

†With an $85.00 miscellaneous revenue, this total agrees with the total in the table on p. 345, despite the fact that there is a difference of $207.50 in the accessory services revenue which is compensated by a similar difference in the earnings from other pilotage dues. The sources of the table on p. 345 are the District's official financial statements (Exs. 152 and 149) which do not provide the foregoing breakdown. The source of this table is the calculations made by the Secretary Treasurer of the Pilotage Authority (Ex. 161). For the purpose of this table the relatively slight discrepancy was disregarded.

‡n/a—not applicable.

(a) *Basic rate*

The basic rate is made up of two components: draught and tonnage. Mileage is not used and need not be (vide Part I, p. 159).

Since draught over a certain depth adds to the difficulty of navigation on the Fraser River, it could be indicated as a component in fixing the dues, provided it bore a direct relation to the added difficulty resulting from maximum or near maximum draught. However, this is not the method adopted. As in British Columbia, a charge for draught is made merely as a means to share the cost of pilotage among the using vessels. In both the District of New Westminster and the District of British Columbia, draught is a holdover from the pre-1906 era when pilotage dues were based solely on this component. It is considered that to apply draught in this way is unreasonable and should be discontinued. (Vide Part I, pp. 161 and ff.).

In areas where greater draught causes obvious navigation problems, consideration could be given to adding a surcharge proportionate to the difficulties. However, it should first be established whether such problems occur only occasionally (in which case an appropriate surcharge is indicated), or are a common event (in which case there should be no surcharge). In other words, no such additional charge should be made if it is found that most ships during either their inward or outward voyage are close to the maximum permissible draught.

It should be borne in mind that since the limiting depth of the channel bars larger ships from the District, most of those entering will make use of all the available depth of water either during the inward or outward part of their voyage. From the information at the Commission's disposal, this is the present situation and it will probably be even more the case in the future. Therefore, it is considered the draught factor should not be used.

Since a ship's tonnage is the most equitable basis for sharing the cost of pilotage among the users, it should be the main component in assessing pilotage charges. At the time of the Commission's hearings, the pilots complained that net tonnage, which was then used, was no longer adequate because many modern vessels, e.g., those with open shelter decks, have a "hypocritical net tonnage". They considered that, instead, not only gross tonnage but maximum gross tonnage should be used (Pilots' brief, sec. 40). The Commission has come to the same conclusion in its study of the question (vide Part I, C.6, pp. 165 and ff.).

The pilots admitted that if the basis of the tariff was changed from net tonnage to gross tonnage, a lower rate would have to be established because the replacement of the net ton by the gross ton without any rate readjustment would result in an increase of revenue of about $4,000 a year per pilot. They stated that an increase of this magnitude was not contemplated by them.

Since the Commission's hearings, the situation has been partly corrected, the gross ton has replaced the net ton effective December 22, 1966 (P.C. 1966-2409) and, at the same time, the ton rate has been lowered to one cent per gross ton.

Before arriving at the rate of one cent per gross ton, the Pilotage Authority had extensive calculations made to find out the correct rate so that the charge would result neither in a loss nor in a substantial gain in revenue for the pilots. Exhibit 1525(j) is a table prepared by the Pilotage Authority's Secretary showing the aggregate revenue the proposed rate would have yielded in preceding years, and the expected revenue it would yield in 1967.

Despite the decrease to one cent per gross ton, the change has accounted for most of the 28.2 per cent ($3,147.74) increase in the pilots' earnings in 1967 over 1966, since, for those two years, the number of total assignments was exactly the same and the number of vessels was approximately the same. This is further established by the fact that, prior to the change, the earnings yielded by computing charges on tonnage before the change were only slightly more than those yielded by using draught. In 1967, following the change, this pattern also changed as earnings from the tonnage factor were markedly greater than from draught (vide table p. 349).

(b) *Minimum charge*

Since 1930, when the first minimum charge was introduced in the tariff at $25, the amount has been changed only once, i.e., in 1960, when it was raised to the present rate of $32.50. Most of the revenue accruing from this source is now paid by the two small vessels that dispense with pilots: M.V. *Indian* and M.V. *F. E. Lovejoy* (p. 316).

It is considered that such a minimum charge is necessary when the rate is based on a small unit so that the pilots' time is not wasted on vessels that have no real need for their services. If they are employed, a fair price should be paid.

However, the minimum charge should not apply to any vessel affected by compulsory pilotage in any form because, in that event, the minimum charge would amount to discrimination against smaller vessels.

(c) *Additional charges*

Most pilotage trips end below the Westminster railway bridge but some vessels proceed beyond, generally to Fraser Mills and the Gypsum Plant. For such vessels, the tariff provides specific charges additional to the basic voyage charge. For tariff purposes the navigable area east of the bridge is divided in two zones, the mouth of the Pitt River being the dividing point. Transiting the railway bridge calls for a flat $30.25 charge and a further charge is added if a vessel is piloted further east past the mouth of the Pitt River.

The table on page 349 shows the relatively small number of times the bridge charge has been applied since 1960. Ocean-going vessels no longer proceed east of Pitt River and in the last decade at least there has been no occasion when a charge was made for a vessel entering or leaving the District east of Pitt River.

At first sight, it would appear that the rate for a bridge transit is too low in that it bears little relation to the value of the pilotage service rendered. The reason why the amount charged is so small appears to be its recent origin. Up to 1960, transiting the bridge was part of a normal pilotage voyage which did not call for any extra remuneration. When the tariff was reconstructed in 1930 and most of the new items were introduced, no mention was made of such a charge probably because the bridge was not a difficult obstruction for the type and size of vessels then entering the District and also because ocean-going ships proceeded to Fraser Mills more frequently. However, the situation had changed by 1960, ships were larger and bridge transits less frequent, but they required great skill and local knowledge on the part of the pilots, for which a special charge was arranged. This would also explain the relatively small charge which is difficult to understand when considered by itself. It is not of sufficient incentive for the pilots to undertake this more difficult task or improve their qualifications in order to navigate large, new types of ships through the railway bridge except under the most favourable conditions. In view of the direct connection between the tariff and their remuneration, this lack of incentive may explain the negative and passive attitude of the pilots regarding the extra task when maritime traffic to New Westminster showed few signs of decreasing.

As for the charge for vessels east of Pitt River, the current rate has been in effect since 1960, i.e., 65¢ per foot draught plus 0.65¢ per net registered ton. In 1960, when the change was made from net to gross tonnage as the basis for computing dues, the net ton was deliberately retained in this instance as is shown by the specific amendment to subsec. 1(c) of the *Schedule* to the By-law. There seems to be no valid reason for such an exception; it is considered that gross tonnage with an appropriate price unit should be used here as well. It is also considered that draught should be discontinued as a factor for the same reason as explained in the recommendation on basic rates.

There is no authority in the tariff to charge a pilot's travelling expenses at any time. Therefore, when such a charge is made, it is illegal. It was explained that a pilot's transportation from his residence to any wharf within the District or to the pilot vessel mooring station at Steveston is not, as a rule, a charge against a ship. The pretext for making the charge is late notice of requirement which makes it impossible for a pilot to use normal means of land transportation and forces him to use a taxi whose cost is charged to the ship and repaid to the pilot when collected. It is considered that such

a charge can not be legally enforced unless the expense is incurred with the consent of the Master or agent. In fact, it amounts to a penalty imposed upon a vessel for a late notice of requirement because, as will be seen later, the pilots are paid the same travelling expenses for all assignments, in all cases as if they had travelled by taxi. The amounts so collected are not significant (vide table, p. 349). It is felt that this practice should be discontinued. (Re legality of E.T.A., vide Part I, pp. 208 and ff., 230 and ff. and General Recommendation 22, pp. 538-9).

As in most Pilotage Districts, the rate for piloting a dead ship is one and a half times the normal rate. (For comments, vide page 151). This occurs very rarely in the New Westminster District and there has not been such a charge in the last decade at least.

(B) *Other Services*

The only other services performed by the New Westminster pilots are movages.

At the time of the Commission's sittings, the tariff made a distinction between day and night movages and provided a different flat charge for each, irrespective of the size of the vessel. A bridge charge in the same amount as a day movage was added whenever the movage entailed transiting the bridge.

Since then, a variable charge in the form of a scale based on tonnage was adopted in 1964, but the flat rate charge was retained for bridge transits. The comments made earlier on this subject apply here.

(C) *Indemnity Charges*

In 1930, a detention charge was introduced into the District tariff for the first time, i.e., a daily rate of $5 when a pilot remained on board by special request of the Master, provided the cause was not an accident for which he was subsequently found responsible or stress of weather. The first change came in 1960 when the requirement for the pilot to remain on board at the special request of the Master was deleted, and the detention charge was increased substantially to $6.05 per hour with a daily maximum of $36.30. This was the situation in 1963. The pilots complained that the detention provision did not cover the times they were detained in the pilot vessel awaiting late arrivals or detained on board ship due to stress of weather. The longest recorded delay on board the pilot vessel had been 48 hours, and on one occasion a ship took five days from Sand Heads to New Westminster because of adverse weather. These must have been very exceptional cases since the average duty time including travelling time, waiting time at Steveston, in the pilot vessel and on board the ship being piloted averaged six hours per assignment, i.e., three hours piloting and three hours travelling and waiting (p. 342).

Since the Commission's hearings in 1963, the detention provisions of the tariff have been amended twice. In 1965, they were changed in two respects to meet the pilots' requests, namely, a detention charge became payable if waiting time exceeded one hour:

(a) when a pilot was detained on board a vessel for any reason including stress of weather and the pilot's own fault;

(b) for detention at Steveston or on board the pilot vessel when a vessel's scheduled arrival was delayed.

In 1966, the charge was increased and altered to a scale of the same amounts and application as had recently been adopted in the British Columbia District (p. 159).

It is considered that the detention provisions are unrealistic and abusive. There should never be a detention charge during a pilotage trip for time spent at anchor or at a berth on account of adverse weather conditions or any other cause beyond a vessel's control. Furthermore, time waiting at the boarding station is a normal hazard of the service (vide Comments, p. 160).

The cancellation charge was first introduced as recently as 1960 and the amount—$18.15—has not been altered since. The pilots complained that cancellation for stress of weather is neither charged for nor taken into consideration when computing their workload. During foggy weather, a pilot frequently reports on board when the tide is suitable but the ship is unable to proceed because of the fog. He must then return home and advise the Master when conditions appear suitable to proceed. With regard to Sand Heads, when he is informed that an expected vessel will not arrive, he is advised to return home and receives no payment for his time and effort because, the pilots claim, the phrase "report for duty" in the By-law is interpreted by the Authority to mean actually boarding a ship.

In 1965, the governing provision was further amended to qualify "stress of weather" by adding "unexpected".

It is considered that the same rule should apply in this case as for detention. Under no circumstances should this penalty clause be imposed when the blame for cancellation can not be imputed to the Master or agent. Furthermore, it should not be imposed unless the order has already been acted upon, i.e., the pilot has proceeded and was available for duty at the required place and time. (For further comments vide p. 164).

(D) *Surcharge*

No surcharge has been imposed since 1960 when the 1952 surcharge of 30% was abolished.

(E) *Accessory Services*

These are pilot vessel services (pp. 338-339) and the provision of radio-telephone equipment (p. 361) (vide Comments, p. 164).

(4) Complaints About Tariff and Pilots' Remuneration, and the Pilots' Strike in 1959

(a) *Shipowners' Complaints*

The shipowners complained that the Fraser River ports were discriminated against in that their pilotage costs were excessive and higher than those in Vancouver by 60 to 70 per cent and that it was almost twice as expensive for a trip from Vancouver to New Westminster compared to a trip from Vancouver to Nanaimo. They maintained that these heavy pilotage costs were a burden which would react against the development of trade and commerce within the port of New Westminster. They added that the inducement to trade in any area is affected by the total cost of trading in that area.

COMMENT

The shipowners' complaints are mostly justified but the fault lies not in the New Westminster tariff, but in the B.C. Pilotage District tariff which provides for a pilotage charge for a vessel changing pilots at Sand Heads boarding station on the same basis as entering or leaving a port (which is not the case, see p. 148) and thus discriminates against New Westminster. This would be corrected if Recommendation 5 for the B.C. District is implemented.

A pilotage voyage from Brotchie Ledge boarding station to Vancouver costs about the same as a pilotage voyage from Sand Heads boarding station to New Westminster. For the vessel *Pacific Northwest,* with a gross tonnage of 9,442, net 5,529, draught 20 feet (Ex. 188) her pilotage charge from Brotchie Ledge to Vancouver, including pilot boat charge, was $142.81 in 1963 ($176.27 in 1967) while the charge from Sand Heads to New Westminster was $133.88 in 1963 ($146.42 in 1967). However, the B.C. pilotage charge from Vancouver to Sand Heads would have been $150.82 in 1963, to which must be added the New Westminster pilotage charge from Sand Heads to New Westminster of $133.88, making the total pilotage charges from Vancouver to New Westminster $284.70. (for other voyage charges and their computation, see Appendix F). This large difference in charges arises because the New Westminster Pilotage District is separated from open water by other pilotage waters, i.e., vessels arriving from seaward must first transit either B.C. District waters or, if using Rosario Strait, American pilotage waters, where, in each case, their pilotage charge is additional to the New Westminster charge. Another example is the trip by the same vessel *Pacific Northwest* from Brotchie Ledge to New Westminster *via* Haro Strait. Under the 1963 tariff, the B.C. pilotage charge was $125.59 and the New Westminster charge $133.88, i.e., a total of $259.47, almost double the B.C. pilotage charge from Brotchie Ledge to Vancouver.

This problem is common to all Districts that do not have direct access to the open sea except through other District waters. In such Districts, vessels benefit from the services of different District pilots who should be remunerated separately. Under the present legislation, the tariff should be fixed in such a way that the total cost of operating the District is borne by the vessels using the services of its pilots. If the Commission's General Recommendation 21 (Part I, p. 524) is implemented, corrective action could be taken by the Central Authority if, in its judgment, the aggregate pilotage charges to reach the port of New Westminster are too high and have an adverse effect on both the port and public interest. Corrective measures would then take the form of subsidies from the proposed Equalization Trust Fund.

(b) *Pilots' Complaints*

The pilots complained that their remuneration was not high enough. They stated that from 1939 to 1962 inclusive the increase in their remuneration was less than 100 per cent since it rose from $525 per month to $1,000 per month. They, like the B.C. pilots, compared their remuneration with a group of salaried mariners, namely, tugboat Masters, Class 1, whose remuneration had increased during the same period from $295 to $591 per month, with the added benefit of an additional $45 for fixed overtime, making an effective increase up to 200 per cent, plus room and board and, in some instances, with uniforms and clothing also supplied. Furthermore, the operating costs of the tugboat companies had also increased due to the requirement to employ two complete crews, and to pay 50 per cent of the premiums for health, sickness, accident and life insurance. The pilots noted that to obtain the same benefits they have to pay the full premiums themselves out of their earnings, i.e., out of the District revenue (Pilots' brief, secs. 41 to 45 incl.). They also remarked that they were at the mercy of changing economic conditions, labour troubles and the volume of traffic requiring their services.

The pilots stated:

(i) They would be willing to become Crown employees and receive an annual salary, provided the salary was adequate and accompanied by suitable working conditions.

(ii) In order to maintain their status as professional mariners and specialists, their earnings should be at least equal to the remuneration of the highest paid Masters who use their services (Pilots' brief, sec. 46). They had been informed that some Masters of non-Canadian ships are paid $1,500 per month.

The pilots agreed that shipowners bear heavy burdens of expense for various services: longshoremen, linesmen, tugs, and many others. However, they stated that "pilotage dues are the most negligible cost for the finest of

all duties performed" and that the charges for their professional services are considerably lower than those for semi-professional and unskilled labour (Pilots' brief, sec. 39).

As an alternative means of correcting the alleged imbalance of their remuneration, they suggested:

(i) an adequate increase in the tariff;

(ii) that the Minister of Transport become the Pilotage Authority so that all pilotage earnings would be reserved for the pilots and that District expenses be paid out of public funds as in other Districts where the Minister is the Pilotage Authority.

COMMENTS

The pilots' complaints actually emanate from their status as private contractors which they enjoyed prior to 1930. The drawbacks of their ambiguous status as *de facto* employees can not be effectively cured unless they assume the complete status of Crown employees.

The suggestion that, in order to maintain their status as professional mariners and specialists, their earnings should be at least equal to the remuneration of the highest paid Masters who use their services is based on false premises because the two occupations are not comparable. It is true that a pilot is a qualified mariner and an expert in local navigation in his District who should be able to handle the largest ship that enters it, but there the comparison ends. The navigation of a ship is only one of the numerous responsibilities of a Master (for the recommended criteria for fixing the pilots' salary or target income, reference is made to Part I, pp. 144-147).

For many years, the New Westminster pilots have urged that the Minister of Transport become their Pilotage Authority, their main reason being the financial advantages they would personally derive. Up to 1949, the policy of the Government was not to grant any direct or indirect financial assistance to any Pilotage Districts except those for which the Minister was the Pilotage Authority. The conflict that led to the pilots' strike in 1959 resulted in a partial relaxation of this policy and the pilots are still making the same request in order to receive the same treatment and financial assistance that are given, *inter alia,* to their colleagues in the B.C. District.

(c) *1959 Pilots' Strike*

On May 4 and May 28, 1956 (Ex. 1169) the pilots wrote to their Pilotage Authority pointing out that the cost of maintaining and operating the pilotage vessel service should no longer be a responsibility of the District "in view of the fact that in all other ports on the West Coast of Canada this maintenance is carried by the Department of Transport". Since such assistance could not be given a District administered by a local Board, they

requested that the function of Pilotage Authority be vested in the Minister of Transport. The New Westminster Pilotage Authority studied their request, made inquiries about the pilots' remuneration and workload in the other Districts and came to the conclusion that, in the interest of the port of New Westminster and of the pilots themselves, the District should remain under the control of a local Authority. At a joint meeting held on October 10, 1956, they informed the pilots of their decision.

The debate was revived shortly thereafter when the Department of Transport decided that the pilot vessel would be subject to Steamship Inspection Regulations, thus entailing a substantial increase in the cost of maintaining and operating the pilot vessel with a consequent decrease in the pilots' net earnings. On December 14, 1956, the Chairman of the Pilots' Committee wrote directly to the Department of Transport formally requesting that the Minister of Transport take over the District, despite the attitude taken by their Pilotage Authority. He frankly admitted that the reason for his request was finance, i.e., the already high cost of operating the pilot vessel which would be further increased as the result of the D.O.T. ruling to bring it under the Steamship Inspection Regulations.

In order to assist in easing the pilots' financial difficulties, the members of the Pilotage Authority discontinued, effective January 1, 1957, the monthly allowance (totalling $1,300 in 1956-57) they had granted themselves out of pilotage revenues through "the courtesy" of the pilots to cover their expenses in connection with their Pilotage Authority duties.

On September 18, 1957, the pilots made a new request to the Pilotage Authority regarding pilotage rates, working conditions, monthly leave and transportation. The Pilotage Authority studied these requests and gathered data covering a number of months of the hours worked by each pilot, his travelling time and assignments. On May 15, 1958, it presented a brief to the Department of Transport which showed the financial problem with which it was faced for the years 1958 and 1959 as compared with 1957 giving figures with regard to revenue and expenses and pilots' remuneration and leave. It concluded that, to remedy the situation, first, the Department of Transport should take over the pilot vessel service and, second, the pilotage rates should be increased considerably (Ex. 1427(y)).

On account of the increased cost of operating the pilot vessel, the District expenses in 1957 rose to more than 50 per cent of the gross earnings and it was feared that the pilots would be placed in a deplorable position if there were any decrease in traffic. In fact, there was a decrease in the summer of 1958 on account of the longshoremen's strike and in 1959 because of the woodworkers' strike.

In this predicament the New Westminster pilots received the support of the B.C. pilots and the Canadian Merchant Service Guild.

The Government first decided to alter its financial policy with regard to Districts where the Minister was not the Pilotage Authority and on November 19, 1958, the pilots were informed by the Director of Marine Regulations that the Department of Transport was in the process of arranging to take over the pilot vessel service as of April 1, 1959, but that no decision had been taken whether the Minister would become Pilotage Authority (Ex. 1427(z)(1)). But in a further letter dated February 25, 1959, the Director of Marine Regulations stated that his Department proposed to request the Governor in Council to appoint the Minister of Transport as Pilotage Authority, effective April 1, 1959, and went on to enumerate the procedure that would be necessary to effect the proposed changeover (Ex. 1427(z)(2)).

However, on April 1 and in the months that followed no action was taken on either count. It appears that the Department of Transport had reviewed their policy and decided against the Minister becoming the Pilotage Authority, but that the Department would take over the pilot vessel service as soon as possible and extend this policy to other Commission Districts as well. Since this step would establish a precedent, the Department anticipated difficulty in obtaining the necessary approval.

However, events were precipitated when the B.C. woodworkers went on strike July 7, 1959. The Pilotage Authority wrote again to the Department of Transport urging the Department to assume the operation of the pilot vessel service without delay. Local public officials gave their support to the pilots with the result that the proposal received special consideration and was quickly approved. On August 27, 1959, by P.C. 1959-19/1093 (Ex. 52), the Department of Transport was authorized, effective April 1, 1959, to take over the pilot vessel and the pilot station.

Thereafter, the procedure was initiated for the changeover of the pilot vessel service and the Director of Marine Regulations met with the Pilotage Authority members to arrange the terms and conditions. In a letter dated October 23, 1959 (Ex. 1169), the Pilotage Authority was informed that the Department was to take over the ownership of the pilot vessel and the real property of Steveston "upon the terms discussed in detail with Mr. Alan Cumyn, Director, Marine Regulations, on his recent visit". The letter added "our Law Branch requires a statement signed by each of the pilots waiving any claims they have or may have against these assets". He concluded by saying that it had been decided that, for the time being, the Minister of Transport would not become the Pilotage Authority. This, however, was not to be construed as a refusal, any more than taking over the pilot vessel should be considered a preliminary to replacing the local Commission by the Minister as Pilotage Authority.

At the beginning of November no further progress had been made. On November 12, 1959, the Secretary recorded in the minutes of the meeting

of the Pilotage Authority that, due to lack of shipping and heavy expenses connected with pilot vessel operations, the pilots had received only $130 each for the month of October and had averaged only $340 for the preceding three months, and that they were becoming increasingly disturbed at the long delays by the Department of Transport. The Authority wired Ottawa informing them of the situation and urging that immediate action be taken.

However, the pilot vessel was only one of a number of issues all relating to finance and pilots' remuneration. *Inter alia*, the question of pilotage rates was being debated between the pilots, the Pilotage Authority and the Vancouver Chamber of Shipping. In paragraph 46 of their brief, the pilots referred to the drastic action they had to take in order to obtain an increase in dues. Their financial situation was desperate, they had been negotiating with the Department of Transport since 1956 about taking over the pilot vessel, the longshoremen's strike and the woodworkers' strike had also adversely affected their income. Despite renewed assurances from the Department of Transport, no action was taken.

Because of these factors the morale of the pilots sank to a low ebb and they decided to take strike action in the form of a general meeting on November 23, 1959. This meeting, which lasted 48 hours, took place in the premises of the Canadian Merchant Service Guild in Vancouver and was attended by all seven pilots. The Secretary of the Pilotage Authority was informed of their whereabouts but when they were assigned to ships by telephone or by telegram they refused to go. Two or three ships were waiting to depart and one ship was due to arrive that evening but in reply to individual assignments the pilots sent word that their meeting was not completed.

On November 24, the Pilotage Authority met with the pilots in an effort to resolve the problems. The Chairman of the Pilotage Authority informed the pilots that he had received a telephone call from the Director of Marine Regulations, later confirmed by telegram, advising that the Department of Transport was prepared to take over the pilot vessel as of that date provided a boarding and disembarking fee of $10 was charged all vessels immediately. The Government would also assume the Authority's bank loan as of that date. They also discussed the rates and an agreement was reached whereby the pilots' request for parity with Vancouver for movages and other small items would be granted. A further meeting was scheduled for the next day.

At the meeting on November 25, the pilots notified the Pilotage Authority that if they were given assurance that the Pilotage Authority would recommend these agreements and endeavour to have implemented, they would return to work immediately. A telegram outlining the pilots' requests and recommending that they be made effective immediately was despatched to the Director of Marine Regulations by the Pilotage Authority, namely:

(i) that the basic pilotage rate structure remain unchanged;

(ii) that the operation of the pilot vessel, together with its assets and liabilities, be assumed by the Department of Transport;

(iii) that the charges for movages, bridge passage, detention and cancellation, be brought to parity with Vancouver Harbour charges.

The pilots also felt that, in view of the promises made to them by D.O.T. officials, they should be reimbursed for the cost of operating the pilot vessel from April 1, 1959. This request was not granted but the others were eventually agreed to and the Department of Transport assumed responsibility for the pilot vessel service effective November 25, 1959.

7. FINANCIAL ADMINISTRATION

(1) New Westminster Pilotage Fund

Until 1959, the New Westminster Pilotage District operated on the principle that the District must be financially self-supporting. That year, the Federal Government departed from that principle for the first time, when it assumed responsibility for the pilot vessel service at public expense (p. 322) and again in 1966, when the Department of Transport undertook to supply portable radiotelephone sets for the pilots.

However, all other expenses are met out of pilotage revenues and each pilot's remuneration consists of an equal share of the subsequent net earnings (generally referred to as the pool) which are distributed monthly.

Only one Fund is maintained and administered by the District Pilotage Authority, i.e., the Pilotage Fund, which is the bank deposit account of all monies received by the Pilotage Authority. Contrary to the practice in the B.C. District, the District financial statement covers all Pilotage Fund receipts and expenditures, whatever their nature and purpose.

There is no Reserve Fund because the sharing of the pilots' net earnings is based on money actually received and not, as in B.C., on the basis of dues earned, whether collected or not (pp. 185 and ff.). Because of the small number of pilots, a Reserve Fund is not as important as it is for B.C.. However, problems do arise and cause unnecessary contention whenever a pilot retires, or a new pilot is appointed, or a pilot is absent without pay thus affecting his right to participate in the pool. To avoid these situations the B.C. procedure should be followed in the New Westminster District.

The Pension Fund was abolished in 1958 when it was paid out to an insurance company in return for guaranteed pension benefits (p. 369).

The Secretary is responsible for the financial administration of the District, i.e., custody of the Pilotage Fund, billing and collecting of dues, bookkeeping, payments for expenses, earnings and the minutes of the Commissioners' meetings.

As in all other Pilotage Districts, dues are calculated and invoiced in accordance with the information contained on source forms which give the particulars of the ship concerned and of the services rendered. The pilot completes and signs the form which is then countersigned by the Master. The Pilotage Authority uses a special form designed to provide complete information for all services performed from which the Secretary computes the dues and keeps statistics.

The Secretary testified that he had no difficulty collecting dues and that they are normally paid within 30 days. The Authority has never been obliged to take court action to collect dues and its only bad debt was incurred in March, 1959, by the now bankrupt Alaska Freight Lines of Seattle. However, the pilots have on occasion protested to the Pilotage Authority about delays in payments which, in some instances, have extended to 90 days. For example, on November 5, 1963, the pilots registered a protest against the accounts receivable on October 31, 1963: three were outstanding for August and seven for September. The Secretary was then instructed by the Authority to take appropriate action to collect any account outstanding for 60 days.

The Secretary's books are audited yearly by an independent firm of auditors and the audited statement is sent to the Department of Transport. In addition, the annual report on the standard Department of Transport form is also furnished as required by sec. 332 C.S.A. (Exs. 149 and 152). The auditors make spot checks every two or three months during the year to confirm that pilotage dues are assessed correctly.

In 1961, for accounting purposes, the auditors changed from the fiscal year to the calendar year.

Appendix E is a comparative table for the years 1961 and 1967 rearranged in the order of the following analysis.

As in B.C., the financial statement does not contain the items "accounts receivable" and "accounts payable", because it is designed to show only actual receipts and expenditures. Accounts payable for auxiliary services, i.e., the pilot vessel and portable radiotelephones which are provided by the Department of Transport, are treated separately. In this regard the Department is considered a third party to whom the Pilotage Authority is immediately indebted. Hence, the charges for these services as rendered are paid each month to the Department whether or not they have been collected. The pilots have occasionally protested against this procedure, but it is strictly in accordance with the legal situation since the auxiliary services charges are owed to the Government by the pilots and not by the ships (Part I, p. 109).

A former practice was to maintain a credit balance or reserve to meet future liabilities which, however, was divided into equal shares whenever a pilot retired or a new pilot was appointed. In April, 1955, it amounted to $2,300.00 but was discontinued on March 31, 1957, at the pilots' request. Unpaid pilotage dues are not reflected in the statements, but, nevertheless, bills are paid when received, except when the Pilotage Authority decides to

pay large amounts by instalments. The last time this occurred was in 1958 for refitting the pilot vessel (p. 322). However, this is not permissible, either under the statute or the By-law (Part I, p. 106).

(A) *Assets and Items of Revenue*

The Pilotage Authority still owns certain assets necessary to carry out its function. Since the Department of Transport took over the pilot vessel service, its only material assets have been office equipment which does not appear on the financial statement but the aggregate value is mentioned each year by the chartered accountants in the preamble to their audited report. For instance, for the year 1957/58, when the Authority owned the pilot vessel and the Steveston property, their aggregate value was entered as $45,621.61 (with the bank loan $24,013.39 as capital liability). The 1967 statement indicates that the Authority's assets consist solely of "furniture, fixtures and equipment with a cost value of $1,843.49 (Ex. 152).

The Pilotage Fund comprises the following items:

(a) *Pilotage dues*, i.e., all items listed and defined in the tariff which were studied earlier pp. 348-354. They comprise dues for the pilots' services, indemnity charges and also the cost of auxiliary services furnished by D.O.T., i.e., pilot vessel service and portable radiotelephones. These items account for practically all District earnings. In 1961 and 1967, analysed in Appendix E, there were no other sources of revenue.

(b) *Miscellaneous revenue*, i.e., indemnities for overcarriage and quarantine, examination and licence fees and fines. Indemnities are also paid under Workmen's Compensation legislation and under the pilots' accident insurance policy. However, for many years, there have been no entries under any of these headings except licence fees. In view of the location of the boarding station, the overcarriage of a pilot is a most unlikely occurrence. As seen earlier, as far as can be ascertained no disciplinary action has ever been taken against a New Westminster pilot. Because of the small number of pilots, a vacancy seldom occurs and, therefore, revenue from examination and licence fees is minimal. Furthermore, it would appear that the By-law provision (subsec. 14(2)) calling for an examination fee of five dollars payable by each applicant is not implemented. As seen earlier (p. 326), when the latest examination was held at the end of 1962, the advertisement attracted 37 applicants of whom 12 met the requirements, but there is no entry either in the 1962 or the 1963 financial statement regarding any receipts from that source. The 1963 and 1964 statements, however, show for each year under "miscellaneous" receipts of $10 which

were obviously the fees for the probationary licence of Pilot Patterson (By-law subsec. 15(1)) issued January 1, 1963, and for his permanent licence (By-law subsec. 15(3)) issued to him the following year. The examination fee is illegal and licences in a system of controlled pilotage should be free of charge (Part 1, p. 260). The last receipts under Workmen's Compensation and pilot's group insurance were in 1954 (Ex. 1427 (o)).

(B) *Liabilities and Items of Expenditure*

The Pilotage Authority has very few occasions, if any, to receive money belonging to a third party, except pilotage dues for the accessory services provided by the Department of Transport. Therefore, expenditures may be divided into:

(a) District and service operating expenses;

(b) Monies paid to or on behalf of the pilots.

(a) *District and Service Operating Expenses*

(i) *Auxiliary services*

District expenditures for auxiliary services are limited to the pilotage dues collected for pilot boat and radiotelephone charges. For the year 1967, the cost of these auxiliary services to the Pilotage Authority was $1,093.75. For details of the gross and net cost of pilot vessel service and the yearly deficit assumed by the Government, vide table, page 339.

These auxiliary service expenditures from pilotage dues amounted in 1961 and 1967 respectively to 7.5 per cent and 7.2 per cent of the total District gross earnings.

(ii) *District general expenses*

These comprise expenses for staff, office and pilots' travelling. In 1961, they accounted for 16.2 per cent and in 1967, 19.8 per cent of the total. If the District came under the Minister as Pilotage Authority, office expenses and staff salaries would be assumed by the Government; in 1961 and 1967, these amounted to 10.5 per cent and 12.9 per cent respectively.

Office staff expenses comprise the remuneration of office personnel and fringe benefits, i.e., salaries as well as premiums for Employment Insurance, Workmen's Compensation, health insurance and pension plan. Health benefits are in the form of insurance carried by the C.U. & C. Health Services Society. The premiums of the Secretary and his assistant are paid partly by them and partly by the Pilotage Authority. The Secretary carries a Mutual Life Insurance Company of Canada policy providing him with $10,000 life insurance coverage plus a pension of $100 a month at the age of 65

to be paid upon retirement. It is based on a contribution of $25.80 per month by the Secretary and a similar amount by the Pilotage Authority. If he retires earlier, his contributions will be returned to him.

Normal office expenses are for rent, light, laundry, janitor, telephone and telegraph, postage, printing, stationery and office supplies but, in addition, there are other operating expenses such as advertising, legal and audit costs, bank charges, and a number of other small items lumped together under the heading "miscellaneous expenses". Under "miscellaneous" are entered, *inter alia*, some pilots' group expenses which properly belong to the other category. One of these is the item "bonuses and presents" (p. 367). They can not be segregated because no details are avilable.

Pilots' travelling expenses account for one of the largest single items of expenditure (aside from pilots' remuneration) in the District, 5.7 per cent in 1961 and 6.9 per cent in 1967. Because pilotage is controlled and the pilots have the status of *de facto* employees, this item is included in District expenses in order that the pilots' remuneration reaches a net amount in the same way as a salary.

According to subsec. 10(2)(c) of the By-law, each pilot is to be reimbursed for expenses he has actually incurred in the course of his duties and is supposed to furnish an itemized statement of his expenses in order to comply with this provision. However, the letter of the law is not observed. For a long time the expense allowance system has existed instead. Prior to November 9, 1957, the pilots received a monthly expense allowance of $25. At the Pilotage Authority's meeting held on that date this allowance was cancelled at the pilots' request and pilots were authorized to use taxis for transportation in the situations described in the minutes and the fare was charged directly to the Authority. This was later changed to an expense allowance per trip or movage which at the Authority's meeting of June 25, 1962 (Ex. 1427(s)) was raised to $9 per trip and $6 per movage, without the pilots being required to prove that these sums had actually been expended.

At the Commission's hearing in 1963 the Secretary of the Pilotage Authority stated that in his opinion these allowances were a fair average since most of the pilots' work is at night and they must travel by taxi. A pilot then receives the same amount whether or not he is obliged to travel at short notice as a result of a vessel not complying with the E.T.A. requirement although when this occurs the ship concerned is debited with a special charge (pp. 352 and 353).

In September, 1966, the allowances were increased to $10.50 per trip and $7.00 per movage. In December, 1966, the trip allowance was reduced to $10.00 due to the removal of the toll charge of $0.50 on Lulu Island bridge (Ex. 1525(i)).

The average travelling expenses paid per establishment pilot were $1,381.63 in 1961 and $1,477.06 in 1967.

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COMMENTS

This expense allowance system is illegal because it is contrary to the governing By-law provision but it is considered that the system has its merits and should be retained through an appropriate amendment to the By-law. Care should be taken, however, that the amount is realistic; otherwise, it becomes a way of concealing actual earnings. It would appear that the best method would be a combination of both, i.e., a minimum expense allowance for which no receipts are required and larger expenditures to be claimed for with accompanying receipts.

(b) *Expenditures Paid to or on behalf of the Pilots*

These are composed mainly of four items or groups of items: fringe benefits, expenditures paid out of the pool for the pilots as a group, pension contributions and pilots' remuneration. In 1961 and 1967, their total accounted for 76.2 per cent and 73.0 per cent of the total gross earnings of the District.

(i) *Cost of fringe benefits*

These are premiums or contributions to health insurance, travel insurance carried by the pilots as a group, Workmen's Compensation and, since 1967, the Canada Pension Plan. These amounted to $1,449.40 in 1961 and to $2,839.90 in 1967.

With regard to Workmen's Compensation coverage, the New Westminster pilots are considered employees of the Authority. In accordance with the British Columbia Act, the whole contribution is paid by the Authority as the employer. On February 26, 1959, the Workmen's Compensation Board of British Columbia wrote to the New Westminster District Pilotage Authority (Ex. 176), indicating that part of the pilots' work which is covered under the Act:

> "Where the pilot proceeds from his home to Steveston by what ever transportation is available his coverage would only commence when he reached the wharf at Steveston in preparation to board the motor launch. Coverage would remain in effect on the said pilot until the time the ship has been berthed at New Westminster but coverage would not be extended after leaving the ship or the office of the Pilotage Authority."

Therefore, on account of this ruling the pilots were not covered while travelling between home and Steveston and home and the pilots' office or the various berths. At the time, they considered the possibility of abandoning Workmen's Compensation coverage as the B.C. pilots had done but, instead, decided that it would be best to retain it since it was reliable and less expensive, and offered the best protection. However, in order to protect themselves against travel accidents not covered by the Workmen's Compensation Act, they, as a group, took out an accident policy which provided a benefit of $150 per week plus death benefit, at the cost of an annual group premium of $560.

In addition, the pilots also carry group health insurance with the C.U. & C. Health Service Society, the cost of which is paid out of District revenues.

(ii) *Expenses paid for the pilots as a group*

These mainly comprise convention expenses, food for pilots in the pilot vessel, bonuses and presents.

The convention item appeared for the first time in 1961. For the years 1961 and 1962 the amount was $100 per year and it was raised to $500 in 1963. In his letter dated January 14, 1965 (Ex. 1427(o)), the Secretary explains this item as follows:

> "The item for convention expense is to defray or help defray the cost of sending a delegate to the National Pilots' Convention. Most years the delegate from the B.C. district acts for the New Westminster pilots and they pay $100.00 towards his expense. In 1963 the New Westminster pilots sent their own delegate, hence the added expense in that year. It is considered that the exchange of ideas and information is of mutual benefit to both the pilots and the district and is therefore a district expense."

In 1964 and 1965, it was $100, in 1966, $210.65. For 1967, it is not entered as a separate item but is included in the item "Miscellaneous" —$150.

In 1963, a new item was added: "pilot boat grub", $185.56. As stated earlier (p. 338), up to that time the pilots paid for this food out of their own pockets at the rate of $5 to $7 per month per pilot. In the same letter (Ex. 1427 (o)), the Secretary explains this new item as follows:

> "Concerning the "Pilot Boat Grub" item; up until 1960 the pilot boat was operated by the district and grub for the boatmen and pilots was charged as supplies to the pilot boat operation. When the boat was taken over by the D.O.T. the boatmen were given a grub allowance and the grub was discontinued. The pilots then contributed personally to a pot to supply the needed supplies; however, everyone, including the boatmen and the B.C. pilots were using the supplies and very few were contributing. Therefore, during 1963 it was agreed to again provide the grub for the pilots use as an expense against the district. The amount was set at $25.00 per month and is being maintained at that at the present."

Among these miscellaneous expenses is the item "bonuses and presents" which belongs to this group. It appears from the minutes of their meetings that these are voted by the pilots and paid by the Secretary out of the Pilotage Fund and, therefore, indirectly on behalf of the pilots. In fact, they are paid by the pilots out of their own money. However, the amount is not disclosed and it is not possible to segregate this item from the others included in the item "Miscellaneous". The Secretary, in his letter dated January 14, 1965 (Ex. 1427(o)) explains as follows:

> "With regards "bonuses and presents"; it has been the custom for many years to give presents at Christmas time of liquor, cigars, chocolates, gift certificates, etc, to various people who have been of service and have given excellent cooperation during the year. These would include such people as linemen, dock gatemen, marine radio operators, boatmen, etc. Also there are sometimes small cash presents to the secretary and assistant. These presents are paid out of the pilotage fund and are included in miscellaneous expense."

(iii) *Pension contributions*

Formerly, in addition to the compulsory contributions to the Pilot Fund, the pension fund was also credited with fines, examination fees, licence fees, dues collected from ships not taking pilots and the other items of revenue not derived from pilotage dues, such as the revenue from rental of the Steveston property. This last source of revenue no longer exists since the transfer of the property to the Department of Transport.

On October 1, 1958, when the nature of the Pilot Fund was changed (p. 369), this practice was discontinued because it was felt that the involved accounting process which would be necessary to allocate these revenues in prorated credits to individual pilots was not justified in view of the small amount involved. With the approval of the Department of Transport, the governing provision in the By-law (sec. 52, 1930 By-law) was deleted. Therefore, since the small revenues derived from these items are not attributed to any special purpose, they become part of the net earnings and thus are shared among the pilots. (Exs. 1427 (g) and (n)).

Therefore, the sole source of revenue for the pension scheme is derived from the compulsory contributions which are currently set at 7 per cent of the gross District revenues after deduction of the auxiliary service charges.

(iv) *Pilots' remuneration*

What remains after the foregoing expenditures have been effected is the net revenue which belongs to the pilots who were on strength during that month. It is divided among them in equal shares pro rata for the time they were available. A probationary pilot receives 75 per cent of a permanent pilot's share.

The share thus computed is considered a pilot's salary for income tax purposes (pp. 344-345). From it, the Authority deducts, as if it were the employer, the pilot's income tax and the pilot's contribution to the Canada Pension Plan.

8. PENSION FUND

The New Westminster District pension fund was created by the 1930 General By-law. Up to 1958, it provided for fixed benefits per year of service in return for variable contributions in the form of a percentage of the District pilotage earnings. Seven per cent of the District gross revenue was deposited annually in the bank for the superannuation fund and, when sufficient money had accumulated, the Pilotage Authority invested it in Dominion Government bonds.

In 1958, the only four pilots on strength were dissatisfied with their pension plan because of the small benefits derived from their comparatively large annual contributions, nor could such a small group hope to receive greater benefits and keep the fund actuarially sound. Therefore, they negotiated with various insurance companies for a more suitable plan and accept-

ed from the North American Life Assurance Company an offer of a money-purchase scheme in the form of an employer-employee group retirement policy.

Effective October 1, 1958, the Authority, with the approval of the Department of Transport and the Department of Finance and at the request of the pilots (four active and two retired), contracted out the existing pension scheme and transferred the accumulated pension fund to the Assurance Company. The District statement of "receipts and payments" for the fiscal year ending March 31, 1959, shows a payment to the North American Life Assurance Company of $99,205.58, thus reducing the superannuation fund to nil.

The Department of Transport stated that a pension plan for this District did not require its approval and the action it took was simply an effort to be helpful. The Pilotage Authority had not elected to have the pension fund administered by the Federal Government in accordance with the option purportedly contained in sec. 366, 1934 C.S.A. However, on behalf of the New Westminster Pilotage Authority, the Department of Transport consulted the actuaries in the Department of Insurance and forwarded their advice both to the Authority, and the pilots. The Department also reminded the pilots of the apparent incompatibility of the proposed plan on account of their legal status (p. 332).

The group retirement policy now in force is based on an individual contribution of $900 per annum, and any amount paid in excess increases the individual pilot's pension. A pilot joining at the age of 35 and retiring at the age of 65 now receives a basic pension of $340 per month instead of $150 under the former plan (Ex. 175).

The policy provides the individual pilot with several options. For example, if he terminates his "employment" before reaching retirement age he may elect either (a) to surrender his membership in the plan and receive a single cash payment equal to the value of all the contributions made on his behalf, or (b) to receive a paid up deferred annuity which commences at his normal retirement date. If he dies before reaching retirement age, his beneficiaries receive the equivalent of all the contributions made on his behalf. However, once he joins the plan he can not withdraw his contributions unless he leaves "the service of his employer" (Ex. 151).

The plan had a retroactive clause which provided increased pensions for the two retired pilots. The Assurance Company took over their share in the original fund and bought each of them a share in the new pension plan (Ex. 175).

The District By-law was redrafted to cover the new situation (P.C. 1960/1035, dated July 28, 1960). The former sections dealing with pension benefits, together with those attributing to the pension fund the revenues from fines, examination and licence fees, and dues collected from ships not

using pilots (p. 254), were deleted, but the provisions for compulsory deductions at source of pension contributions and for determining the annual amount to be set aside for pension purposes were retained. The Pilotage Authority continues to deduct annually 7 per cent of the gross revenue of the District as a first charge against the pilotage fund and pays this amount to the North American Life Assurance Company. So far, the 7 per cent deduction has been more than sufficient to meet the basic contractual requirement of $900 per active pilot. For comments, vide Part I, page 452.

ADDENDUM

(vide pp. 280 and 335)

The first shipping casualty at the railway bridge since 1934 with a pilot aboard occurred July 2, 1968. It involved the S.S. *Harry Lundeberg,* a conventional ship with bridge amidships, 524'10" in length, a regular trader making eight or ten visits annually to New Westminster with a cargo of bulk gypsum which is unloaded at the Domtar berth, approximately one mile above the railway bridge. After discharging her cargo the ship left the Domtar berth at 20.30 and proceeded downstream. When negotiating the south draw of the railway bridge, first her bow and then her stern collided with the open swing span causing considerable damage to it and necessitating closure of the bridge to railway traffic. The ship also suffered substantial damages which, however, did not prevent her from proceeding.

From the information available, it would appear that the blame for the accident can be laid on neither the pilot nor the Master but on the navigational hazard caused by the freshet. The rule adopted by the pilots is not to take a ship down river through the railway bridge when the water level gauge at Mission City reaches twenty feet or more. On this occasion the gauge read 19.03 feet, thereby indicating that the river was considerably above normal. The current at the bridge was running at approximately five or six knots. The ship was proceeding downstream at half speed (estimated to be six or seven knots through the water) but when approximately one half mile above the bridge the engines were put at full speed with the intention of securing the maximum steering control. (Ex. 1525(k)).

Chapter D

RECOMMENDATIONS

SPECIFIC RECOMMENDATIONS AFFECTING THE NEW WESTMINSTER PILOTAGE DISTRICT

RECOMMENDATION NO. 1

The New Westminster District to Remain a Separate Pilotage District with the Harbour of Vancouver and the Proposed Roberts Bank Port and Connecting Waters as Joint Territory for the Sole Purpose of Allowing the New Westminster Pilots to Commence or Terminate Fraser River Trips

According to the criteria enunciated in the Commission's General Recommendation 8 (Part I, pp. 476 and ff.), the navigable waters of the Fraser River should remain a separate Pilotage District. Because of the physical features of its channels, the effects of the tides and the changeable water conditions, the New Westminster pilots require a high degree of local knowledge and experience, constantly maintained. In view of the small number of vessels employing pilots, this requirement can not be met unless a small group of pilots is constantly and exclusively engaged in the navigation of these waters.

This opinion, which has long been generally recognized, was also the conclusion of two previous Royal Commissions: the Robb Commission in 1918 (p. 255) and the Morrison Commission in 1928 (p. 255).

A separate pilotage service normally should have its own Pilotage Authority. A Pilotage Authority fully conversant with the needs of its service and available to exercise constant surveillance and act promptly when emergencies arise is an essential condition if the service is to be efficient. (General Recommendation 8)

The extent of these demanding responsibilities in the New Westminster District precludes their assumption by any other Pilotage Authority. The only other available and sufficiently close to assume the task is the present B.C. District Pilotage Authority (or the Pilotage Authority of the proposed Gulf of Georgia District) but its own responsibilities are so great that it would be unable to give the New Westminster pilotage service the time and constant attention its administration and direction require.

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All those concerned with the District agree that the local Pilotage Authority deserves great credit for its administration. The record shows that the members of the Authority have administered pilotage in a very efficient and business-like manner. All matters within its jurisdiction have been attended to quickly and adequately, in sharp contrast with the British Columbia District and other Districts where the function of Pilotage Authority is centralized in the Minister of Transport. Administration centred in Ottawa has caused bitter complaints by both the pilots and the shipping interests.

The sole objection to the present system at New Westminster is economic. The overly high aggregate pilotage costs a vessel has to pay to reach New Westminster (pp. 355 and 356) adversely affect shipping, the port and the pilots. The shipowners' suggestion of a merger with the B.C. District and the pilots' recommendation that the Minister become their Pilotage Authority are only attempts to correct this economic drawback.

If the provision of an efficient, reliable pilotage service is required in the public interest, as this Commission considers it to be (vide next Recommendation), the question of finance should not be allowed to become an obstacle. For this reason alone, no attempts should be made to change an organization that has proved most necessary and highly efficient.

There are, however, other ways of dealing with the economic situation without disturbing the present basic organization.

The best solution to the pilots' problem is for them to become employees of the Authority (p. 357). Thus they would receive an adequate fixed salary for given working conditions with additional remuneration for overtime work in peak periods, plus fringe benefits. Otherwise, the pilots' financial plight will grow more serious as the District gradually deteriorates.

However, this solution would not reduce the cost of pilotage to shipping. A partial answer would be to reduce aggregate pilotage costs as much as possible by correcting the present discrimination against the New Westminster District contained in the present B.C. tariff (as already stated, p. 355). In addition, as recommended by Pacific Coast Terminals Limited (p. 263), the New Westminster pilots should be allowed to commence or terminate their pilotage trips in the ports adjacent to their seaward District limit, i.e., the Harbour of Vancouver and the proposed Roberts Bank port. The Sand Heads area should also be a joint boarding station (B.C. Recommendation No. 2, p. 200).

The evidence indicates that about 30 per cent of the New Westminster pilotage traffic is bound either from or to Vancouver. It would not be difficult for the New Westminster pilots to acquire the required local knowledge and skill to pilot from Sand Heads to Vancouver Harbour and to berth or unberth there. Such extended trips would call for higher pilotage charges but these would be substantially lower than the present combined New Westminster and B.C. charges (p. 355). Furthermore, this procedure would have the

definite advantage of saving pilots' time, since assignments would be performed by one pilot instead of two, as at present. It would not unduly increase the overall New Westminster pilots' workload, and would free the existing B.C. District, or the proposed Gulf of Georgia District, of a substantial number of small assignments. It would also partly solve the pilots' complaint regarding prolonged detention on board the pilot vessel (p. 339).

The remaining aspects of the economic problem will have to be met through financial assistance from an outside source. This could be the Central Authority's proposed Equalization Trust Fund if the Commission's General Recommendation 21 is implemented.

RECOMMENDATION NO. 2

Pilotage Waters in the District of New Westminster to be Classified as a Public Service for the Time Being

From the view point of safety of navigation, an adequate, efficient pilotage service for the Fraser River is unquestionably necessary. Unless a vessel is of shallow draught, navigation on the river requires a high degree of local knowledge and experience and, because the channel is so narrow, a major casualty may well block access to New Westminster for a considerable period of time. Furthermore, there is no doubt that without an adequate pilotage service New Westminster would be, to all intents and purposes, inaccessible to modern ocean-going traffic.

However, the importance of pilotage on the river must be assessed, first, in terms of the national economy and second, of the surrounding area. It must be ascertained whether New Westminster is not gradually growing obsolescent as an ocean seaport and, if so, whether this is contrary to the public interest.

At first sight, it would appear that New Westminster is maintained as a seaport because of an inheritance from the past which has continued through the years although the circumstances and conditions that warranted its original creation have changed considerably. At the time of the mainland colony, the Fraser River was the main route to the interior of southern British Columbia. New Westminster was as far inland as most ocean-going vessels could proceed and no other port afforded such direct access to the Fraser valley. The situation is now totally different because the easily accessible deep-sea harbour of Vancouver has long since been created and, with the advent of modern transportation facilities, Vancouver is now as close to the interior of the province and the rest of Canada as New Westminster. Modern road transportation also seriously affects imports and exports by water to and from New Westminster and its immediate vicinity. Because of the limitations placed on ocean-going traffic by the natural and physical

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features of the Fraser River, local industry often finds it more economical to ship products to Vancouver by truck or by scow than to have a ship call for a partial cargo.

The next question is: to what extent should public funds be expended to maintain New Westminster as a seaport? Should only maintenance work be carried out to enable the port to flourish as a coastal port while allowing it to decline gradually as an ocean seaport, or should capital works be undertaken to keep it accessible to ever larger ocean-going vessels? Such a policy would involve large capital expenditures for dredging the channel to a suitable depth, enlarging the channel at the bends to accommodate longer vessels and removing and relocating the railway bridge if the northern area of the harbour is also to be made more accessible. It would also require substantially increased recurrent expenditures for the maintenance of the improved channel.

The course of action that should be taken is a question of Government policy which is beyond the mandate of this Commission. When appraising the importance to the public of the pilotage service on the Fraser River the Commission must base its conclusions on present facts. Statistics clearly establish that New Westminster has become of secondary importance as a seaport (pp. 314-316) and that, on the other hand, the Government appears to be satisfied with the present situation because so far it has not seen fit to take remedial action. This factual situation would justify the conclusion that it is present Government policy to consider New Westminster mainly as a port for coastal and local traders and that the considerable expenditure of public funds which would be required to render it competitive as a seaport with Vancouver is not justified in the public interest. Furthermore, a major shipping casualty that might close the harbour to sea-going vessels, even for a considerable period of time, would not seriously affect the economy of the area because of the availability of adequate alternative transportation. In these circumstances, pilotage on the Fraser River can not be classified as an essential public service (re classification criteria, vide General Recommendation 17, Part I, pp. 507 and 509).

On the other hand, the Commission considers that the service still remains in the public interest and should be classified, for the time being, as a public service until subsequent developments make it necessary to reassess its importance to the public.

Chapter E

APPENDICES

APPENDIX A

Map—New Westminster Pilotage District.

APPENDIX B

(1) Graph—1958–1967 Per Cent Increase (or Decrease) in Earnings and Workload of Pilots.

(2) Table—1958–1967 Figures and Percentages on which the above Graph is based, giving the Number of Ships Piloted, Assignments, Net Tonnage Piloted, District Gross Earnings, Distribution to Pilots, Establishment of Pilots, Average "Take Home Pay", and Sources of Information.

APPENDIX C

Table—1956–1967 Shipping Casualties, Accidents and Incidents Involving Pilots.

APPENDIX D

(1) Graph—1961–1962 and 1966–1967: Total Assignments per Year; Total Assignments and Movages per Month Emphasizing Peaks and Lows as compared to Annual Monthly Average.

(2) Table—1961–1962 and 1966–1967 Figures on which the above Graph is based, giving the Total Assignments per Month, per Year; Average Assignments per Year; Total Movages per Month, Total Movages per Year, Average Movages per Year, and their Source of Information.

APPENDIX E

(1) Table—1961 and 1967 Comparative Analysis of Annual Financial Statements of the New Westminster District Pilotage Authority.

(2) Table—1961 and 1967 Details of Expenditures (as shown on *Appendix E (1)*)—(a) District and Service Operating Expenses.

(3) Table—1961 and 1967 Details of Expenditures continued—(b) Paid to or on Behalf of Pilots.

APPENDIX F

(1) Table—Comparison of Charges according to the Tariff Prevailing in 1963 for the S.S. *Pacific Northwest*.

(2) Table—1963 Computation of Dues for the S.S. *Pacific Northwest*.

Appendix A

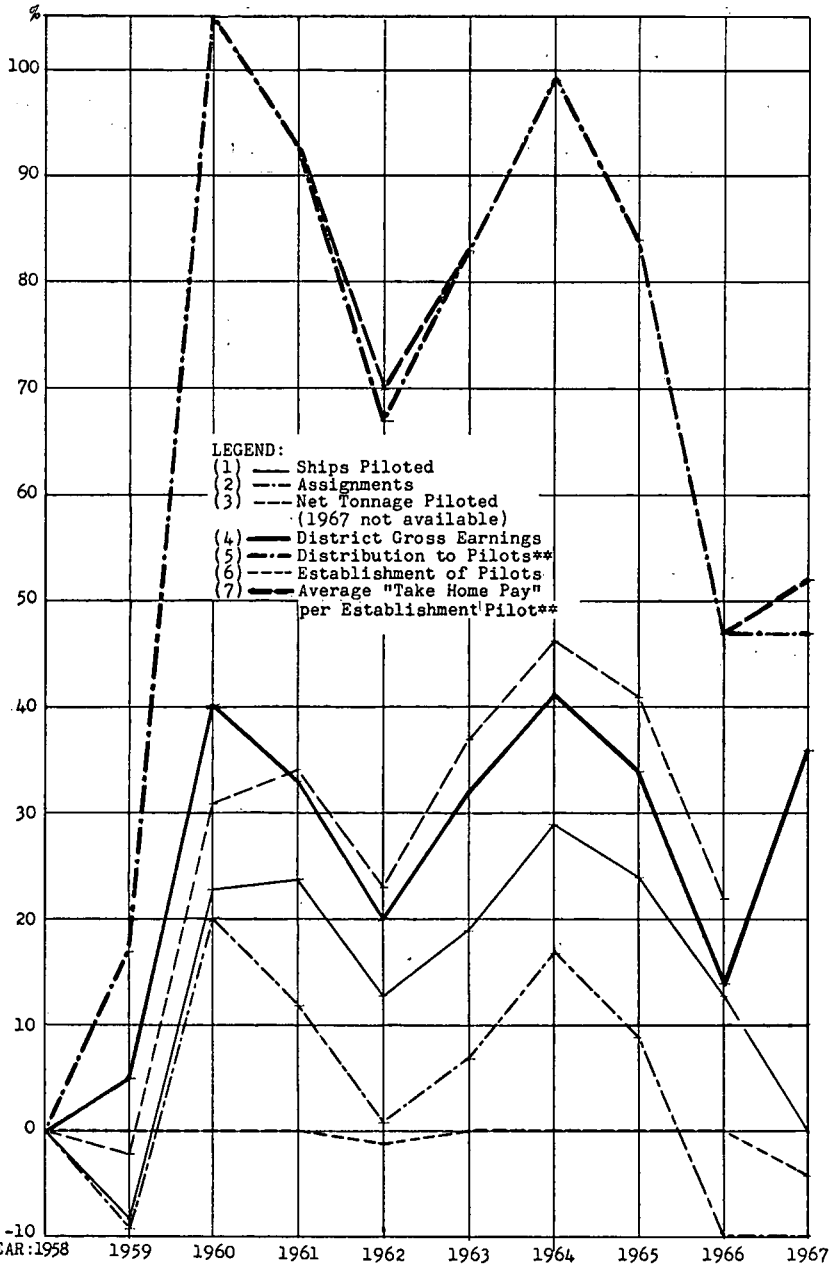
Appendix A to Part One of the Report shows the outline of all existing Pilotage Districts and pilotage areas in Canada.

When the general plan of the Report was drawn up, it was hoped to present detailed maps or charts of each District but it became apparent that they would exceed the reasonable scope of the individual Parts.

Observing that the basic material is already available, reference is invited to the catalogue published by the Canadian Hydrographic Service for detailed information.

Appendix B (1)

PER CENT INCREASE (OR DECREASE) IN EARNINGS AND WORKLOAD OF PILOTS



**As the percentage increase was almost equal for both "Distribution to Pilots" and "Average 'Take Home Pay' per Establishment" (except for the years 1962 and 1967), the line for the former was used (see "Legend" above).

Appendix B (2)

EARNINGS AND WORKLOAD OF PILOTS

Year	(1) Ships Piloted	(2) Assign-ments	(3) Net Tonnage Piloted	(4) District Gross Earnings	(5) Distribu-tion to Pilots	(6) Establish-ment of Pilots	(7) Average "Take Home Pay"
	#	#	#	$	$	#	$
1958	482	1,156	1,872,698.0	103,891.81	53,342.02	7	7,620.29
1959	444	1,048	1,844,532.0	108,658.91	62,275.48	7	8,896.50
1960	594	1,384	2,449,481	145,019.55	109,518.15	7	15,645.45
1961	598	1,299	2,513,175	138,260.61	102,830.97	7	14,690.14
1962	546	1,165	2,309.991	124,565.48	89,261.03	6.91	12,917.66
1963	574	1,235	2,570,930.5	137,108.79	97,410.44	7	13,915.78
1964	621	1,353	2,728,736.5	146,933.95	105,941.54	7	15,134.51
1965	598	1,254	2,634,144	138,767.54	98,054.78	7	14,007.83
1966	496	1,037	2,290,216.5	118,512.48	78,141.34	7	11,163.05
1967	482	1,037	not available	141,416.42	78,141.34	6.75	11,576.50
				PERCENTAGE INCREASE OR DECREASE			
1958	.0	.0	.0	.0	.0	.0	.0
1959	−7.9	−9.3	−1.5	4.6	16.7	.0	16.8
1960	23.2	19.7	30.8	39.6	105.3	.0	105.3
1961	24.1	12.4	34.2	33.1	92.8	.0	92.8
1962	13.3	.8	23.4	19.9	67.3	−1.3	69.5
1963	19.1	6.8	37.3	32.0	82.6	.0	82.6
1964	28.8	17.0	45.7	41.4	98.6	.0	98.6
1965	24.1	8.5	40.7	33.6	83.8	.0	83.8
1966	2.9	−10.3	22.3	14.1	46.5	.0	46.5
1967	.0	−10.3	not available	36.1	46.5	−3.6	51.9

SOURCES OF INFORMATION:

(1) Ex. 161 (1958–1959) and Ex. 149 (1960–1967); vide pp. 314-315.

(2) Ex. 161 (1958–1959) and Ex. 149 (1960–1967); vide *Appendix D*.

(3) Ex. 161 (1958–1959) and Ex. 149 (1960–1966); vide pp. 314-315. The 1967 figure is not available due to the change from net to gross tonnage in 1967.

(4) Ex. 152. In 1966, amount of $118,512.48 is reported incorrectly on both the Annual Report (Ex. 149) and audited financial statements (Ex. 152); the correct amount is $118,513.48.

(5) Ex. 152; excludes amounts paid to Superannuation Fund.

(6) Ex. 169 Appendix F (1958–1959) and Ex. 149 (1960–1967); the term *Establishment* means the number of pilots on a yearly basis, taking into consideration any increase (i.e., probationary pilots) and any decrease (retirements, etc.) that occurred during the year.

(7) Divide column (5) by column (6); the difference between the above "Average 'Take Home Pay'" and the average earnings per pilot on the table on p. 344 is caused by the lesser amount earned by probationary pilots during the year.

Appendix C

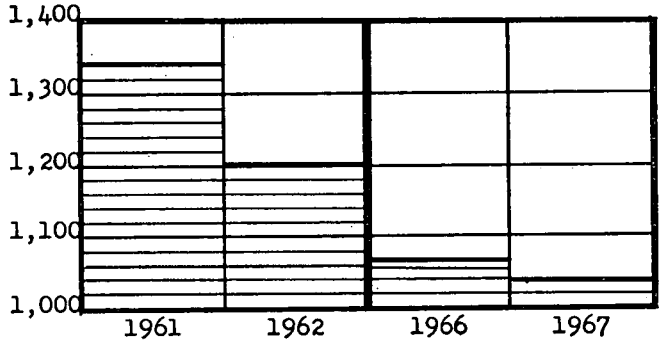
SHIPPING CASUALTIES, ACCIDENTS AND INCIDENTS INVOLVING PILOTS*

	1956	1958	1959	1961	1963	1964	1965	1966
TOTAL SHIPPING CASUALTIES, ACCIDENTS AND INCIDENTS INVOLVING PILOTS	1	1	1	3	5	10	5	5
A. Events happening in the course of navigation	0	0	1	3	2	6	1	2
I. Major casualties (with or without loss of life)	0	0	0	0	0	0	0	0
(a) Loss or abandonment of ship	0	0	0	0	0	0	0	0
(b) Major strandings	0	0	0	0	0	0	0	0
(c) Heavy damage to ship (other than above)	0	0	0	0	0	0	0	0
II. Minor casualties	0	0	1	2	0	1	1	1
(a) Minor strandings	0	0	1	1	0	1	1	0
(b) Minor damage to ship	0	0	0	1	0	0	0	1
III. Accidents (other than shipping casualties)	0	0	0	0	0	1	0	0
IV. Incidents	0	0	0	1	2	4	0	1
(a) Touching bottom in channel	0	0	0	0	2	2	0	1
(b) Others	0	0	0	1	0	2	0	0
B. Events happening while berthing, unberthing or at port anchorage	1	1	0	0	3	4	4	3
I. Major casualties (with or without loss of life)	0	0	0	0	0	0	0	0
II. Minor casualties	1	1	0	0	3	4	3	3
(a) Minor strandings	1	1	0	0	0	0	1	0
(b) Minor damage to ships	0	0	0	0	3	4	2	3
(i) Striking pier	0	0	0	0	1	3	1	3
(ii) Striking other vessels while berthing or unberthing	0	0	0	0	1	1	1	0
(iii) Striking vessels at anchorage	0	0	0	0	0	0	0	0
(iv) Others	0	0	0	0	1	0	0	0
III. Accidents (other than above)	0	0	0	0	0	0	0	0
IV. Incidents	0	0	0	0	0	0	1	0
(a) Striking pier	0	0	0	0	0	0	0	0
(b) Striking other vessels while berthing or unberthing	0	0	0	0	0	0	1	0

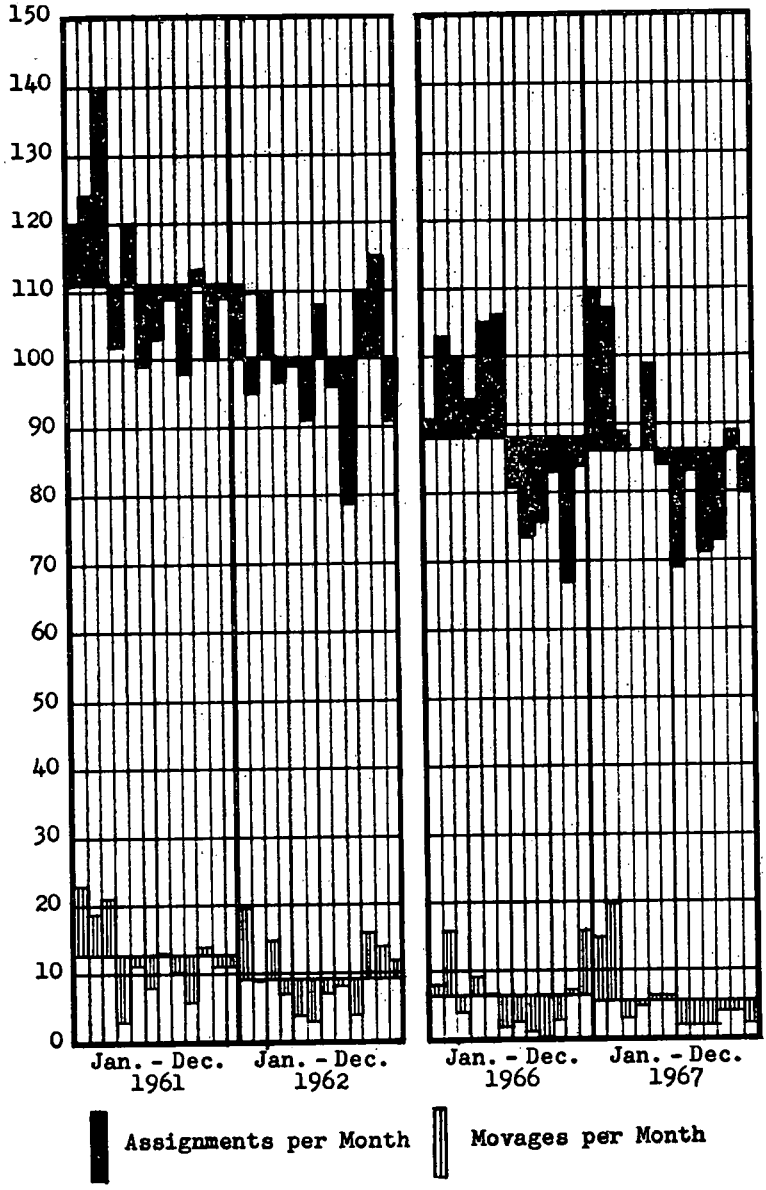
*SOURCES OF INFORMATION: Exhibits 149, 213, 866, 1172, 1427s, and 1451. As there were no casualties reported for the years 1957, 1960, 1962 and 1967, these years were not included in the above tabulation.

Appendix D (1)

TOTAL ASSIGNMENTS PER YEAR



TOTAL ASSIGNMENTS AND MOVAGES PER MONTH EMPHASIZING PEAKS AND LOWS AS COMPARED TO ANNUAL MONTHLY AVERAGE



Appendix D (2)

TOTAL ASSIGNMENTS AND MOVAGES PER MONTH

Month	1961[1]	1962[1]	1966[2]	1967[2]
Total Assignments per Month:				
January	120	111	91	110
February	124	95	103	107
March	140	110	100	89
April	102	97	94	86
May	120	99	105	99
June	99	91	106	84
July	103	108	81	69
August	109	96	74	83
September	98	79	76	71
October	113	110	83	73
November	100	115	67	89
December	109	91	84	80
Total Assignments per Year[3]	1,337	1,202	1,064	1,040
Average Assignments per Year	111.41	100.16	88.67	86.67
Total Movages per Month:				
January	23	20	8	15
February	19	9	16	20
March	21	15	4	3
April	3	7	9	5
May	11	4	6	6
June	8	3	2	6
July	13	7	3	2
August	10	8	1	2
September	6	4	0	2
October	14	16	3	4
November	11	14	7	4
December	11	12	16	2
Total Movages per Year[3]	150	119	75	71
Average Movages per Year	12.50	9.92	6.25	5.92

[1]SOURCE OF INFORMATION: Ex. 169 (Schedule "D" of Brief 9) submitted by the pilots of the Pilotage District of New Westminster.

[2]SOURCE OF INFORMATION: Ex. 1525(c).

[3]The total number of assignments figure is the aggregate of trips and movages. The figures quoted in this table [1,2] do not quite agree with those quoted on the District Annual Report (Ex. 149); they are slightly higher.

Appendix E (1)

COMPARATIVE ANALYSIS OF ANNUAL FINANCIAL STATEMENTS OF THE NEW WESTMINSTER DISTRICT PILOTAGE AUTHORITY*

A. REVENUES	1961			1967		
	$	$	%	$	$	%
(a) PILOTAGE DUES						
Pilotage services	138,260.61		92.5	141,416.42		92.9
Auxiliary services	11,210.00		7.5	10,893.75		7.1
		149,470.61	100.0		152,310.17	100.0
(b) MISCELLANEOUS						
Overcarriage and quarantine	—		—	—		—
Examination fees	—		—	—		—
Licence fees	—		—	—		—
Fines	—		—	—		—
Workmen's compensation	—		—	—		—
Group insurance	—		—	—		—
Others	—		—	—		—
		—	—		—	—
		149,470.61	100.0		152,310.17	100.0
B. EXPENDITURES**						
(a) DISTRICT AND SERVICE OPERATING EXPENSES						
Auxiliary services		11,210.00	7.5		10,893.75	7.2
District general expenses:						
Staff expenses	12,320.44		8.2	15,108.13		9.9
Office expenses	3,418.32		2.3	4,448.56		2.9
Pilots' travel expenses	8,500.50		5.7	10,568.70		6.9
		24,239.26	16.2		30,125.39	19.7
		35,449.26	23.7		41,019.14	26.9
(b) PAID TO OR ON BEHALF OF PILOTS						
Cost of fringe benefits	1,450.22		1.0	2,839.90		1.9
Expenses paid for the pilots as a group	100.00		.1	450.00		.3
Pension contribution	9,671.41		6.4	9,896.31		6.5
Pilots' remuneration†	102,799.72		68.8	98.104.82		64.4
		114,021.35	76.2		111,291.03	73.1
		149,470.61	100.0		152,310.17	100.0

*SOURCE OF INFORMATION: Ex. 152; vide pp. 344 and 378.
**For further details of expenditures, vide Appendices E(*2*) and E(*3*).
†Actual pilot's share: 1961—$14,690.13; 1967—$14,310.78.

Appendix E (2)*

DETAILS OF EXPENDITURES (As shown on Appendix E (1))

B. EXPENDITURES	1961			1967		
	$	$	%	$	$	%
(a) DISTRICT AND SERVICE OPERATING EXPENSES						
(*i*) *Auxiliary Services*						
Pilot vessel	11,210.00		7.5	9,169.41†		6.0
Radiotelephone	—		—	1,724.34†		1.2
		11,210.00	7.5		10,893.75†	7.2
(*ii*) *District General Expenses*						
Staff Expenses						
Salaries	11,325.00		7.6	13,900.00		9.1
Unemployment insurance	48.96		.0	48.96		.0
Workmen's compensation	194.50		.1	255.00		.2
Health plan	87.00		.0	101.70		.1
Pension plan	664.98		.5	802.47		.5
	12,320.44		8.2	15,108.13		9.9
Office Expenses						
Rent	900.00		.6	1,008.00		.7
Laundry	46.95		.0	42.15		.0
Janitor services	60.00		.0	162.00		.1
Telephone/telegraph	1,025.83		.7	1,362.24		.9
Postage	55.00		.0	39.50		.0
Supplies/stationery	248.66		.2	498.92		.3
Light	18.12		.0	17.76		.0
Advertising	30.98		.0	157.72		.1
Legal and audit	380.00		.3	315.00		.2
Bank charges	21.50		.0	6.80		.0
Miscellaneous**	631.28		.4	838.47		.6
	3,418.32		2.2	4,448.56		2.9
Pilots' Travelling Expenses	8,500.50		5.7	10,568.70		6.9
		24,239.26	16.1		30,125.39	19.7
		35,449.26	23.6		41,019.14	26.9

*SOURCE OF INFORMATION: Ex. 152; vide pp. 344 and 378.

**There are pilots' group expenses contained in the District operating expenses item *Miscellaneous, inter alia,* "bonuses and presents" and "pilot boat grub"; not being segregated, they can not be listed.

†Due to a difference in accounting procedures, there is a slight discrepancy of $95.75 between the amount of $10,893.75 reported on the Pilotage Authority's audited financial statements (Ex. 152) and the amount paid to the Federal Government of $10,989.50. It was, therefore, necessary to apportion the figures for *pilot vessel* and *radiotelephone* respectively.

Appendix E (3)*

DETAILS OF EXPENDITURES

(As shown on Appendix E (1)) (*continued*)

B. EXPENDITURES (contd.)	1961			1967		
	$	$	%	$	$	%
(b) PAID TO OR ON BEHALF OF PILOTS						
(*i*) *Cost of Fringe Benefits*						
Health insurance	449.40		.3	501.50		.3
Travel insurance	560.00		.4	560.00		.4
Workmen's compensation	440.82		.3	1,224.00		.8
Canada pension plan	n/a		—	554.40		.4
	1,450.22		1.0	2,839.90		1.9
(*ii*) *Expenses Paid for the Pilots as a Group*						
Convention expenses	100.00		.1	150.00		.1
Pilot boat "grub"**	n/a		—	300.00		.2
Bonuses and presents**	—		—	—		—
	100.00		.1	450.00		.3
(*iii*) *Pension Contribution*	9,671.41		6.4	9,896.31		6.5
(*iv*) *Pilots' Remuneration*†	102,799.72		68.8	98,104.82		64.4
		114,021.35	76.2		111,291.03	73.1
		149,470.61	100.0		152,310.17	100.0

*SOURCE OF INFORMATION: Ex. 152; vide pp. 344 and 378.

**There are pilots' group expenses contained in the District operating expenses item *Miscellaneous, inter alia*, "bonuses and presents" and "pilot boat grub"; not being segregated, they can not be listed.

†Actual pilot's share: 1961—$14,690.13; 1967—$14,310.78.

Appendix F (1)

COMPARISON OF CHARGES ACCORDING TO THE TARIFF PREVAILING IN 1963* FOR THE S.S. *PACIFIC NORTHWEST***

(Gross Tons, 9442; Net Tons, 5229)
(Draught in, 20 Feet; Draught out, 24 Feet)

SEA TO NEW WESTMINSTER AND RETURN			VANCOUVER TO NEW WESTMINSTER AND RETURN		
IN:			IN:		
Sea to Sand Heads	125.59[3]		Vancouver to Sand Heads	150.82[5]	
Sand Heads to New Westminster	133.88[1]		Sand Heads to New Westminster	133.88[1]	
		259.47			284.70
OUT:			OUT:		
New Westminster to Sand Heads	144.28[2]		New Westminster to Sand Heads	144.28[2]	
Sand Heads to Sea	129.59[4]		Sand Heads to Vancouver	158.82[6]	
		273.87			303.10
ROUND TRIP:		$533.34	ROUND TRIP:		$587.80

[1]–[6]For computation of dues, vide *Appendix F (2)*.

SEA TO VANCOUVER AND RETURN			VANCOUVER TO NANAIMO AND RETURN		
IN:			IN:		
Sea to Vancouver	142.81[7]		Vancouver to Nanaimo	163.94[9]	
OUT:			OUT:		
Vancouver to Sea	146.81[8]		Nanaimo to Vancouver	171.94[10]	
ROUND TRIP:		$289.62	ROUND TRIP:		$335.88

[7]–[10]For computation of dues, vide *Appendix F (2)*.

SOURCES OF INFORMATION:
*Exhibit 1430.
**Exhibit 188.

Appendix F (2)

COMPUTATION OF DUES FOR THE S.S. *PACIFIC NORTHWEST*

(Gross Tons, 9442; Net Tons, 5229)
(Draught in, 20 feet; Draught out, 24 feet)

New Westminster Charges	Draught*	Tonnage**	Boat‡	Total
(1) Sand Heads to New Westminster	52.00	71.88	10.00	133.88
(2) New Westminster to Sand Heads	62.40	71.88	10.00	144.28

	In	Out
*Draught @ $2.60 per foot	52.00	62.40
**Tonnage @ 1.3 cents per N.R.T.	71.88	71.88
‡Sand Heads boat @ $10.00 per trip	10.00	10.00

British Columbia Charges	Port*	Mileage**	Boat‡	Total
(3) Sea to Sand Heads	67.21	48.38	10.00	125.59
(4) Sand Heads to Sea	71.21	48.38	10.00	129.59
(5) Vancouver to Sand Heads	134.42	16.40	Nil	150.82
(6) Sand Heads to Vancouver	142.42	16.40	Nil	158.82
(7) Sea to Vancouver	67.21	65.60	10.00	142.81
(8) Vancouver to Sea	71.21	65.60	10.00	146.81
(9) Vancouver to Nanaimo	134.42	29.52	Nil	163.94
(10) Nanaimo to Vancouver	142.42	29.52	Nil	171.94

		In	Out
*Port Charge:			
Draught @ $1.00 per foot		20.00	24.00
Tonnage @ 1/2 cent per G.R.T.		47.21	47.21
		67.21	71.21
		× 2	× 2
		134.42	142.42
**Mileage Charge @ 82 cents per mile:			
Sand Heads to Sea	59 miles	48.38	48.38
Vancouver to Sand Heads	20 miles	16.40	16.40
Sea to Vancouver	80 miles	65.60	65.60
Vancouver to Nanaimo	36 miles	29.52	29.52
‡Brotchie Ledge boat @ $10.00 per trip		10.00	10.00

SOURCES OF INFORMATION: Exhibits 188 and 1430.