Chapter C

# EVIDENCE

## PREAMBLE

Semantics have been the most important single cause of misunderstanding between all parties concerned with pilotage in the District of Quebec. For historical reasons, Quebec has inherited a highly complicated administrative procedure which is totally different from that followed in the Districts previously studied in Part II and Part III of the Report. A great deal of confusion is created because certain terms have an altogether different connotation in the Quebec District, and also because the same term is used with different meanings in the District depending on the point of view. Hence, in order to facilitate comprehension of the Quebec system it is considered necessary to define the key terms whose meaning differs in the Quebec District and, for the purpose of this Report, to give a special name for each of the different meanings of the same term.

### *Trips and Turns*

While in other Districts the term *trip* generally means a pilotage voyage as distinct from other types of pilotage assignments, e.g., movages, and the term *turn* refers only to a pilot's place on the tour de rôle, these terms have acquired a number of different meanings in the Quebec District due to the complex system of despatching based on the equalization principle, and the incomplete pooling unofficially operated by the pilots.

(1) *Trip* has the following meanings:

(a) As a general term, it is synonymous with *pilotage voyage* irrespective of its length (hence, excludes movages) Part I, p. 135. For instance, Les Escoumins to Rivière du Loup, some 30 miles, and Québec to Chicoutimi, some 165 miles, are both counted as one trip.

Unless the contrary is stated, the term *trip* in this Report means a ship's voyage for which pilotage dues must be paid, either because a pilot was employed or on account of the compulsory

payment system. It does not include other maritime traffic, i.e., exempt vessels which do not employ a pilot.

Trip in the sense of pilotage voyage varies in meaning according to whether it is considered from the point of view of vessels paying dues or pilots being assigned. The distinction is not always clearly made, thus causing apparently contradictory statistics. A pilot is not necessarily assigned for every trip because some non-exempt ships proceed without a pilot but pay dues, and also from December 1 to April 8 two pilots are assigned for a trip. Hence, to avoid confusion in this Report, the following expressions are used:

(i) *trip*: a ship's voyage for which pilotage dues must be paid;

(ii) *trip (vessel)* or *vessel trip*: a trip in terms of vessels affected, including non-exempt ships which did not employ a pilot. The necessary qualificatives are used when it is necessary to differentiate, such as "trip (vessel) without pilot" and "trip (vessel) with pilot";

(iii) *trip (assignment)* or *assignment trip:* the number of times pilots were employed during trips (vessel); hence, excluding vessel trips without a pilot but including double winter assignments.

(b) The term *trip* (referred to in this Report as *tariff trip*) is also used to mean a unit for tariff purposes. The tariff (Schedule A of the District General By-law) provides rates for three distinct tariff trips: (i) between Quebec and Father Point, (ii) between Chicoutimi or Port Alfred and Father Point and (iii) between Chicoutimi or Port Alfred and Quebec, and vice versa. The first two tariff trips call for the same rate while the third calls for a slightly higher rate because it is longer. For the purpose of computing dues for shorter voyages, each tariff trip is divided into zones, the dividing lines on the St. Lawrence River being (i) between St. Roch Point and Cape St. Joseph and (ii) between Red Islet and Prince Shoal; on the Saguenay River, Cape Trinity.

Hence, the first two tariff trips are divided into three tariff zones and an assignment entirely performed in one or two of those zones calls for a charge amounting to one-third or two-thirds of the applicable rate for these traffic trips. The third traffic trip is divided into four tariff zones.

(c) *Trip* is also used loosely to mean workload, e.g., subsec. 4(1) of the General By-law (p. 21) as the criterion for determining the establishment of pilots, and subsec. 15(2) when referring to the equalization principle to be followed in despatching (p. 22).

In practice, the term *turn* is used instead but in this Report *trip* will not be used in this meaning unless clearly indicated.

(2) *Turn* mainly refers to the pilots' workload but in its natural meaning is also a pilot's place on an assignment list. When it has this connotation in the Report, it is clearly apparent from the context, e.g., a pilot is third on turn, or a pilot may change his turn with another pilot.

*Turn* generally means the work unit which the pilots have devised for the purpose of sharing pilotage workload and revenues. On account of their special and incomplete pooling system it applies only to *trips* (*assignment*) (not movages) and is defined in the despatching rules by reference to *tariff trips* as follows:

(a) any assignment trip for which more than half the basic tariff is charged is worth one full turn;
(b) one-third of the basic charge equals half a turn;
(c) an assignment trip between Port Alfred and Chicoutimi, which normally accounts for half a turn, is worth a full turn when a pilot has to come by land transportation from another station;
(d) the value in turns of a trial trip is left to the discretion of the Supervisor (p. 438).

When so used, the term *turn* may have six different meanings, depending upon the point of view:

(a) *Performed turns* are the work units representing assignment trips performed by a pilot.
(b) *Free turns* are turns fictitiously credited, both for despatching and pooling purposes, as performed turns. They are the form of compensation granted by the pilots to those of their colleagues who have donated some of their pilotage time to their common interests, e.g., attending meetings of the Board of Directors of their organizations, participating in delegations or performing special work for the pilots as a group (p. 281), or who for reasons beyond their control have missed a turn or turns because of an unusually long assignment.
(c) *Lost turns* mean the average number of turns performed by the pilots who were constantly available prior to the date of a pilot's appointment or during a pilot's absence from duty when not entitled to the benefit of the equalization rule, e.g., non-availability due to the suspension of his licence, or because he has elected to receive illness benefits in the form of indemnity turns.
(d) *Indemnity turns* mean turns credited for pooling purposes in partial compensation for turns missed due to illness or licence suspension or cancellation.

(e) *Despatching turns* are the number of turns to a pilot's credit on the despatching list. They comprise performed turns, free turns and lost turns, but not indemnity turns.

(f) *Sharing turns* are the units used in the operation of the pool to determine the pecuniary value of the sharing unit and each pilot's aggregate share in the pilotage money being pooled. They comprise performed turns, free turns and indemnity turns, but not lost turns or turns over the maximum average.

When the expressions *trips* and *turns* are used indiscriminately and without qualification, much confusion is liable to ensue. The following table is an example of the statistics represented by some of these different connotations.

| | Trips (Vessel) | | | Trips (Assignment) | | Sharing Turns | |
|---|---|---|---|---|---|---|---|
| Year | With Pilots | Without Pilots* | Total | Second Pilot† | Total‡ | Free Turns§ | Total** |
| 1955 | 5,647 | — | — | — | 5,647 | — | 5,602½ |
| 1956 | 6,114 | — | — | — | 6,114 | — | 6,020 |
| 1957 | 5,951 | 100 | 6,051 | — | 5,951 | — | 5,835 |
| 1958 | 6,172 | 64 | 6,236 | — | 6,172 | — | 6,080½ |
| 1959 | 7,298 | 118 | 7,416 | — | 7,298 | — | 7,256½ |
| 1960 | 7,184 | 119 | 7,303 | 293 | 7,477 | 80½ | 7,663 |
| 1961 | 7,229 | 103 | 7,332 | 284 | 7,513 | 55½ | 7,827 |
| 1962 | 7,258 | 101 | 7,359 | 319 | 7,575 | 85 | 7,990½ |
| 1963 | 7,199 | 104 | 7,303 | 460 | 7,659 | 186 | 8,061½ |
| 1964 | 8,117 | 74 | 8,191 | 490 | 8,607 | 148½ | 8,967 |
| 1965 | 8,515 | 63 | 8,578 | 529 | 9,044 | 62½ | 9,390½ |
| 1966 | 8,812 | 91 | 8,903 | 744 | 9,556 | 75 | 9,771½ |
| 1967 | 8,415 | 170 | 8,585 | 751 | 9,166 | 75 | 9,564½ |
| 1968 | 8,393 | 12 | 8,405 | 770 | 9,163 | 102 | 9,452½ |

*Sources: Exs. 534(a), 589 and 1308. Figures for 1955 and 1956 not available.

†Source: Ex. 534(a). The despatching in winter of a second pilot was officially introduced by the By-law amendment of November 25, 1960; there is no record in the annual statements of the unofficial practice in the previous years—the 1960 figure, therefore, covers only the month of December.

‡Source: Ex. 534(a).

§Source: Ex. 654. Free turns were introduced in 1960.

**Source: Ex. 597.

### *Number of Pilots*

*Number of pilots* has different meanings according to the point of view: these meanings are rendered in this Report by the following terms and expressions:

(1) *Pilot establishment* or *authorized pilots' strength* is the maximum number of pilots that may hold a licence at the same time and, hence, the total number of pilots the Pilotage Authority may

license. This number must be defined by regulation (Part I, pp. 255 and ff.). It may be changed by an appropriate amendment to the regulations increasing or decreasing establishment. Therefore, the expression by itself means the authorized number on a given date, and it must be qualified when it is intended to refer to the average authorized number of pilots over a period of time, i.e., to provide an average figure on a daily basis during that period. Hence, the expression might take the form of *month establishment* or *year establishment.*

(2) *Pilots on strength* is the actual number of pilots who hold a licence at a given time. A *minus* discrepancy of one or more pilots between the establishment and actual strength connotes one or more vacancies. A *plus* discrepancy is legally not possible since the licence of any pilot appointed in excess of the establishment would be void.

(3) A *year pilot* is a pilot who held his licence for the whole of the navigation season. For instance, if the normal navigation season is from April 1 to December 31, a pilot who retired June 30 or one who was licensed October 1 would be counted in each case as a 1/3 year pilot.

(4) Availability for duty is the governing factor in the statistical concept of an *effective pilot.* Hence, according to the natural meaning of the term, a pilot who is not available at a given moment for any reason except being already on duty or taking a required rest period between assignments should be counted as ineffective, whether the cause of non-availability is a regular holiday, sickness or suspension of his licence. Here again, the expression can be made to refer to the situation at a given moment or over a defined period of time by employing the appropriate qualificative.

The *effective pilot* concept was used by the Department of Transport for statistical purposes but, due to restrictive and frequently amended definitions, the information it was hoped to convey was not comparable from year to year or between Districts. The Department of Transport's main restriction on its meaning was counting annual leave and regular holidays as time available. Statistics compiled on this basis have no comparative value between the District of Quebec and most of the other Districts because the rules governing the availability of pilots differ. In the Quebec District, there is no regulatory leave with pay nor is the workload shared on the basis of actual availability but through the system of equalization of turns (Part I, p. 147). Nor are the statistical figures thus obtained comparable from year to year because the method of computation has been changed a number of times. For instance, in the District of Quebec the 1960 financial statement shows an effective pilot figure calculated on the number of turns credited to

each pilot each month. In 1961, different methods of calculation were used for the first and the second half of the year: for the first half the former method (monthly basis) was used but in the second half a daily basis was used. However, the figures quoted since 1962 for the District of Quebec conform to the natural meaning of the term since all absences are deducted. Still, those figures do not compare with those of the previous years, nor with those of other Districts.

Accurate effective pilot statistics would have helped to give an accurate picture of the availability of pilots but the Commission could not rely on statistics compiled by the Department of Transport on this basis and reliable data were not available to enable the Commission to compile its own effective pilot statistics. Instead, the Commission resorted to statistics that were sufficiently accurate and more easily obtainable, i.e., based on *year pilots*. These figures also have the advantages of a common denominator with other Districts and consistency from year to year.

Since to date there has been comparatively little traffic in January, February and March in the District of Quebec, neither workload nor remuneration have been greatly affected by the variation in strength during that period. For this reason, the *year pilot* figure for the District of Quebec has been calculated on the normal navigation season. Hence, a pilot who held his licence from April to December inclusive is counted as 1 year pilot without considering whether he was unavailable at any time for suspension of his licence, illness or absence with or without leave. These factors do not vary greatly from year to year and have no great significance, especially in the District of Quebec where the equalization rule applies.

The following table shows the number of pilots according to the various methods of calculation used for the period 1955-1968.

| Year | Establishment as of December 31 | Pilots Holding a Licence during Any Part of the Year | Year Pilots | D.O.T. Effective Pilots |
|---|---|---|---|---|
| 1955 | 65 | 67 | 64.6 | — |
| 1956 | 73 | 76 | 70.1 | — |
| 1957 | 73 | 72 | 68.6 | — |
| 1958 | 73 | 72 | 68.5 | 63 |
| 1959 | 76 | 78 | 73.3 | 64 |
| 1960 | 77 | 82 | 75.4 | 72.3 |
| 1961 | 77 | 78 | 76.8 | 71.3 |
| 1962 | 77 | 79 | 77.0 | 69.55 |
| 1963 | 77 | 79 | 76.8 | 69.12 |
| 1964 | 82 | 85 | 79.2 | 76.12 |
| 1965 | 86 | 87 | 85.7 | 84.04 |
| 1966 | 86 | 88 | 85.2 | 82.1 |
| 1967 | 86 | 89 | 86.0 | 74.5 |
| 1968 | 88 | 90 | 87.5 | — |

## 1. GENERAL DESCRIPTION

### (1) District Limits

The Quebec Pilotage District comprises the first section of confined waters along the waterways which run for some 2,300 miles through the Gulf and River St. Lawrence and the Great Lakes system to the Lakehead. In addition, it includes the navigable waters of the St. Lawrence tributaries but these, in practice, are limited to the Saguenay River as far as Chicoutimi because none of the other rivers in the District are navigable except at their mouth which normally forms part of a harbour, e.g., the St. Charles River at Quebec.

(a) *Eastern Limit Problem*

The eastern limit of the District as stated in sec. 322 of the Canada Shipping Act no longer describes the *de facto* boundary because no pilotage is performed by the licensed pilots of the District in the 37-mile stretch between Father Point and Anse aux Basques. This discrepancy arose when the boarding station was moved westward in 1960 to its present location off Anse aux Basques (for pilotage purposes the pilot station and the boarding area are referred to by the name of the nearby village Les Escoumins).

The situation now is that the pilots embark and disembark off Les Escoumins and do not perform any pilotage service in the ports situated east of that point, i.e., Forestville and Rimouski, although they are still within the District limits. Hence, the Pilotage Authority is placed in the equivocal position of not enforcing in that sector the compulsory payment of dues which it enforces in the rest of the District. On the other hand, the pilots complained that, if they were despatched to perform pilotage duties in those ports, they would have to obey the order but would be at a financial disadvantage because they would have to bear personally the cost of the land transportation involved. Such assignments have not been given, however, because the Pilotage Authority condones the illegal pilotage being performed in this sector by unlicensed pilots with the full knowledge of the licensed pilots.

The reason why the description of the eastern limits was not corrected is because, in the opinion of the Department of Transport, it would be necessary to amend sec. 322 C.S.A. It seems that in practice it is next to impossible to effect a change when the required process involves an amendment to the Canada Shipping Act. It took almost 30 years to have the description of the District modified to conform with the situation that existed after the pilot station was moved from Bic to Father Point in 1905. The 1960 move from Father Point to Les Escoumins has not as yet been given official recognition by correcting sec. 322 C.S.A.

The Pilotage Districts of Quebec and Montreal are now the only two Districts whose limits are still fixed by legislation, and the opinion has been expressed that the Governor in Council has no authority to alter these limits (p. 9).

Before the station was moved in 1960, the Department had proposed to solve the problem in an indirect way by removing from sec. 324 C.S.A. the restriction on the Governor in Council's power concerning the Districts of Quebec and Montreal. This was one of the objects of Bill S-3 which was particularly objected to by the pilots' representatives. The Bill passed the Senate with many amendments but violent objections against certain parts of the Bill were again raised in the House during second reading, especially against the sections dealing with the proposed system for the Great Lakes and also against anything that would deprive the St. Lawrence pilots of their former privileges. The Bill was not withdrawn, it simply had not been passed when the House adjourned and since that time it has neither been revived nor reintroduced.

The pilots were ready to agree that the Governor in Council should have power to alter the limits of the Quebec and Montreal Districts because they realized that conditions were no longer the same, and they themselves had asked for some modifications to the limits.

They objected, however, to the way it was proposed to achieve this, i.e., through the deletion of the limitations on the Governor in Council's powers contained in sec. 324 C.S.A. which provided greater powers than were sought. The proposed legislation would have empowered the Governor in Council not only to amend the District limits but to rescind these Districts. The pilots argued that this would endanger their "acquired rights" which were guaranteed to them at that time by specific sections and restrictions in the Act, e.g., the existence of these Districts, having the Minister as Pilotage Authority and, it was believed, the compulsory payment system.

When Bill S-3 was discussed, the problem had existed for some years in the Montreal District which had, in fact, already been divided into two sectors at Three Rivers. During the debates before the Senate Committee, the then Deputy Minister, Mr. J. R. Baldwin, pointed out that there was as yet no problem with regard to the Quebec District limits but he believed that a problem would soon arise because there were discussions under way with the pilots regarding the eastern boundary.

When the transfer from Father Point to Les Escoumins was completed, the Department decided to dispose of this particular aspect of the problem at the first opportunity by a pertinent amendment to the description of the limits in sec. 322 C.S.A. On October 3, 1960, the Director of Marine

Regulations wrote to the president of the Pilots' Committee to that effect and suggested that sec. 322 be amended to read as follows (Ex. 1318):

> "322. The Pilotage District of Quebec comprises that part of the River St. Lawrence from the western limit of the harbour of Quebec to an imaginary line drawn from the harbour of Les Escoumins on the north shore to the harbour of Trois Pistoles on the south shore of the River St. Lawrence, together with those parts of all rivers, waters, harbours, creeks, bays and coves within the said limits where tide ebbs and flows, and includes the Saguenay River."

On November 9, 1960, the president of the Pilots' Corporation reported the agreement of the Quebec Pilots' Committee.

However, the proposal was not implemented. There is no record in the Department of Transport files to show why the amendment was not submitted to Parliament and no one can recall why the matter was not pursued. The opinion was expressed that the 1960 amendments to the Canada Shipping Act dealt with Great Lakes Pilotage only and that it was essential for these amendments to be made without delay so that joint operations with the United States authorities could commence. After the experience with Bill S-3 it was decided not to submit any other amendments which might be controversial and might cause delays in the passage of the Great Lakes pilotage amendments (Ex. 1456(w)).

At the Commission's hearings, the Department of Transport counsel remarked that whether a provision is to go into a Bill that will be introduced in Parliament is a matter of Government policy which is decided by the Cabinet.

(b) *Western Limit*

There is no difficulty about the western limit of the District except the process of determining its exact position: sec. 322 C.S.A. merely states that it coincides with the "western limit of the harbour of Quebec". The Commission received no complaints or recommendations in this regard.

The adjacent Pilotage District, the District of Montreal, overlaps the Quebec District to include the harbour of Quebec. However, the harbour of Quebec forms part of the Montreal District in a limited way only, i.e., it serves only as a boarding area for the Montreal pilots. On a downbound trip the Montreal pilots disembark either at a wharf in the harbour, or, if the ship is in transit, in mid-river in front of Quebec at the time of the change-over of pilots, and vice versa for the upbound trip. But only the Quebec pilots perform a movage in the harbour of Quebec, unless it concerns the completion of a downbound trip from upriver after a vessel has anchored within the harbour to await favourable tidal and weather conditions to proceed to her wharf. The compulsory dues payable by a non-exempt ship which completed a movage without a pilot are collected by the Quebec Pilotage Authority and credited to the Quebec Pension Fund (Ex. 1461(r), pp. 8-10, and Part I, pp. 480 and 481).

## (2) Physical Features

(a) *General Description of Quebec District*

The St. Lawrence River and all its navigable tributaries are included in the pilotage waters of various Pilotage Districts, with the exception of the area beyond the *de facto* eastern limit of the Quebec Pilotage District, i.e., a zone approximately 252 miles long between this limit extending seaward to the official boundary between the River and the Gulf—a line joining Cap des Rosiers and West Point, Anticosti Island, and thence to the north shore of the River St. Lawrence along the meridian of longitude 63° west, i.e., east of Havre St-Pierre (subsec. 2(41) C.S.A.).

The width of the River at its official eastern boundary is about 80 miles. The north shore runs due west 88 nautical miles from the boundary to Sept-Îles and then curves for 70 miles southwestward to Pointe des Monts where the River is 24 miles wide. Between Pointe des Monts and the pilot station at Les Escoumins, a distance of 94 miles, the River narrows progressively to a width of 12 miles of navigable water. Navigation is unobstructed (except by ice during the winter and spring) until the first shallows are met at Red Islet Bank, some 12 miles west of Les Escoumins off the mouth of the Saguenay River.

Harbours along the River east of Les Escoumins do not present any particular navigational difficulties and there is no organized public pilotage service at any of the ports situated in that area. However, pilotage service, if required, can be obtained locally. At wharves and ports that are privately owned and operated, local pilotage and tug services provided by the owner are generally mandatory (vide Sec. Two, *Lower St. Lawrence River Ports and Areas*).

The previous location of the boarding station off Father Point, some 37 miles to the eastward from Les Escoumins and on the south shore, was merely one of convenience when the South Channel was maintained to accommodate deep draught vessels. In 1905, the boarding station had been moved eastward from Bic Island to Father Point on account of the obstructions created by Bic Island. Father Point was also considered preferable because vessels had more sea room to embark and disembark pilots. However, the first 49 miles of pilotage were in open water and pilotage really began where it does now, i.e., off Red Islet.

The pilots claim that the pilotage trips in their District are the longest in the world if one excludes coastal pilotage such as in the British Columbia Pilotage District. The distance between Quebec and Les Escoumins is 123 sea miles using the North Channel and some two miles longer by the South Channel. From Les Escoumins to Chicoutimi the distance is 81 miles, from Quebec to Baie des Ha Ha (Ha Ha Bay) harbour (Port Alfred), 152 miles and from Quebec to Chicoutimi, 165 miles.

(b) *Main Navigational Features*

At the time of the Commission's hearings there were four features common to the whole District: tides, unreliable radio communications, small vessel traffic and ice conditions during winter and spring.

(i) Tidal effects are felt throughout the District. Spring tides both at Quebec and Chicoutimi vary between 16 1/4 and 19 1/2 feet and sometimes rise even higher in strong winds. Under the influence of tides and water flow the currents change direction and velocity up stream or down frequently reaching a velocity of 6 to 7 knots and often creating an unexpected hazard by flowing across the ship channel. The capricious behaviour of the currents and their extraordinary velocity at places like Coudres Passage and the Saguenay estuary were the subject of thorough surveys carried out by the Canadian Hydrographic Service of the Department of Mines & Technical Surveys in 1939, and a comprehensive and detailed report entitled "Tidal Current Charts St. Lawrence Estuary Orleans I. to Father Point" was published (Ex. 510).

Mr. H. L. Land, officer-in-charge of the St. Lawrence Ship Channel Division of the Department of Transport, warned that, although information about the direction and speed of the currents can be obtained from the hydrographic navigation charts, it is limited and more knowledge can be gained by frequent use of the channel.

(ii) Lack of adequate radio communications used to plague the whole District. Existing equipment and installations did not overcome the barrier created by the mountainous features on the north shore of the St. Lawrence as far as Cap Tourmente near Orleans Island and in the fiord-like Saguenay River. This has since been greatly improved (vide pp. 180 and ff.).

(iii) Small coastal vessels will always create problems but this traffic is a local necessity which must be endured. Between 1920 and 1940, the problem became so serious that a Royal Commission was convened to study the situation and determine what remedial action could be taken (p. 70).

Many schooners still ply the St. Lawrence and Saguenay Rivers. The number is gradually decreasing and wooden schooners are disappearing as they are replaced by larger steel vessels. On the Saguenay their cargoes are mostly lumber and pulpwood, the latter collected from the small village wharves on the lower part of the St. Lawrence River, mainly on the south shore. The Department of Transport reported that the situation had much improved because the river schooners are now classified as steamships and their Masters must possess a Certificate of Competency. They now gener-

ally abide by the rule of the road and the St. Lawrence River Navigation Safety Regulations made pursuant to sec. 645 C.S.A. (Ex. 1461(j)). This opinion is also shared by the pilots. The schooners' Masters now take winter courses in order to qualify for a certificate as Master, Inland Waters. There are four schools available to the local mariners in the winter months.

Secs. 7 and 8 of the "St. Lawrence River Regulations" of 1954, which then applied to the Quebec Pilotage District, read as follows:

> "7. No vessel drawing nine feet of water or less and no barge or raft shall, except in case of accident, stress of weather or force of current use the deep water channels.
>
> ...
>
> (f) in the dredged channel below Quebec known as Madame Reef-Brule Bank Channel, between Buoys 120¼B and 112B except Buoys 114¼B and 114B; or
>
> (g) at or near Buoys 109¼B, 109B and 108B" (Brûlé Bank and Longue Pointe ledge area).
>
> "8. Vessels drawing nine feet of water or less and barges and rafts shall at all times keep to the proper side of the fairway and away from the established steamer track between Quebec and Father Point except when crossing the steamer track at right angles."

Navigational problems arise because these schooners and other small craft must use established steamer tracks under certain circumstance, are slow and have little power and ply between communities on both shores of the St. Lawrence and the Saguenay. In some places, they must use the ship channel because there is not sufficient depth of water elsewhere. Since their average speed is only 4 to 7 knots, they avoid stemming strong currents and take advantage of those that are favourable. Because their operators are well acquainted with local river conditions, they criss-cross in their shallow draught vessels from one channel to the other over banks and ledges making the best use of currents and taking the shortest route to their destination.

On practically every trip, vessels in the lower St. Lawrence meet or overtake small craft crossing the regular shipping channels from different directions. Their apparently erratic behaviour is a source of constant danger for large fast vessels and there have been several near misses and occasional accidents. In conditions of poor visibility, the situation is aggravated because wooden schooners make poor radar targets. It was suggested to the Schooner Association that these schooners be equipped with radar reflectors.

The danger is compounded when, in addition, they disregard the rule of the road and the St. Lawrence River Regulations. For instance, one pilot reported that while upbound on July 18, 1963, he almost had a collision with a small laker near Cape Dogs when

visibility was impaired by fog. The small vessel was located by radar sailing on the wrong side of the channel. Attempts to reach her by radiotelephone were in vain.

Another pilot reported that on August 29, 1963, he had a dangerous meeting with a schooner which proceeded across the channel without giving any signal or answering the radiotelephone, and it was only by a last minute manoeuvre that a collision was avoided. In this case, the schooner was crossing the channel from St. Joseph wharf to Ile aux Coudres wharf.

There is no organized system or patrol to enforce the Regulations but the pilots have been requested to report any violations with the necessary particulars, and the Department of Transport has undertaken to prosecute the offenders.

The Shipping Federation of Canada reported that a number of accidents occurred with schooners whose Masters claimed that sec. 8 of the Regulations quoted above did not apply to them because their draught was a few inches more than 9 feet. Apparently this nine-foot limit was originally chosen because it was their maximum draught at the time the Regulations were drawn up, but this is no longer the case. Pilot Michel Dussault stated that these small vessels are a navigational hazard to large ships and have created several dangerous situations. He agreed with the Shipping Federation's suggestion that there is sufficient depth for them outside the steamer track almost everywhere in the District, and that the Regulations could be improved by raising the draught requirement to 10 or even 12 feet and by making it applicable to all vessels of less than 150 feet in length.

These regulations were superseded by the "St. Lawrence River Navigation Safety Regulations" (P.C. 1967-700 dated April 13, 1967, Ex. 1461(j)). The restrictions were not increased as suggested and the former sec. 8 was not reproduced. That part of the former sec. 7 pertaining to the Pilotage District of Quebec became subsecs. 4(1)(c) and (d) which read as follows:

> "4. (1) No vessel drawing nine feet of water or less and no barge or raft shall, except in case of accident or stress of weather or when engaged in survey work authorized by a department or agency of the federal government or of a provincial government, use the St. Lawrence River deep water channel
>
> ...
>
> (c) in the dredged channel between Madame Reef near Pointe St. Jean and the downstream end of the North Traverse opposite Seminaire Spit; or
>
> (d) in the dredged cut through Longue Pointe ledge."

(iv) Ice in the Gulf of St. Lawrence takes three forms: berg ice which enters the Gulf through Belle Isle Strait, flat or pan ice formed in the Gulf itself and river ice from the St. Lawrence and its estuary.

The River begins to freeze in late November or early December and there is heavy ice at the mouth by the end of the month. Except for specially constructed vessels and ferries, navigation in the River is normally closed from the end of November to mid or late April, but of recent years an increasing number of reinforced vessels have succeeded in reaching Montreal and Quebec City during the winter months (pp. 197 and ff.).

(c) *North and South Channels of the St. Lawrence*

The navigable waters of the St. Lawrence east of Quebec City contain two channels: the North Channel, which is used by most vessels and by all large ships, and the South Channel, which is now used only occasionally by vessels of light draught. The North Channel begins south of Orleans Island off St. Jean, runs through the North Traverse, passes Cap Brûlé, continues along the north side of the River through Coudres Passage, thence passes either north or south of Red Islet and merges into open water down to Les Escoumins. The South Channel, which also begins south of Orleans Island, continues along the south side of the River south of a series of islands, reefs, and banks including Madame Island, Ruaux Island (in 1637, this island was granted to the Jesuit Fathers under the name *Ruaux*; the spelling altered to *Reaux* but on June 4, 1959, was officially confirmed as Ruaux), Grosse Ile, Crane Island and Goose Island, thence through St. Roch Traverse, south of Hare Island and Red Islet and merges into open water down to Les Escoumins.

The North Channel is kept fully maintained to accommodate large ships and is used by the bulk of the traffic. The nine-mile North Traverse was dredged to connect the deep water of the North Channel, four miles east of Orleans Island, with the Main Channel between St. Jean, Orleans Island, and Madame Reef, two miles northeast of that point. The 22-mile arm of the River north of Orleans Island, named the Orleans Channel, is shallow, lined with flat mud banks and is not maintained.

Prior to 1934, most vessels used the South Channel which, up to that time, was maintained at a minimum depth of 30 feet at low water and at widths varying between 700 and 4,000 feet. It curves through reefs and other obstacles and, in certain areas, currents up to eight knots are encountered.

As vessels increased in number and size, the channel needed to be straightened, deepened and widened, and new, more modern aids to navigation had to be adopted. After all factors had been considered, it was decided to abandon maintenance of the South Channel in favour of improving the North Channel, although this meant dredging the nine-mile North Traverse to the southeast of Orleans Island.

Many factors militated in favour of this choice. With the exception of a small area off Cap Gribane and Cap Brûlé (2½ miles apart) where silting occurs, the North Channel was deeper, straighter and wider and had fewer obstacles, in sharp contrast to the South Channel where extensive dredging was necessary to maintain a thirty-foot depth. The ice factor in winter and spring was also in favour of the North Channel because the prevailing northwesterly winds keep it moderately clear of ice, except for one area in the Coudres Channel where flood tides cause congestion. The natural outflow of St. Lawrence River ice is along the south shore where the shallows and narrow passages cause numerous accumulations. This is why the former boarding station at Father Point closed early in the fall and opened late in the spring, with the result that the pilots had to travel long distances to embark or disembark at Gulf or coast ports such as Baie Comeau, Sept-Îles, Sydney or Halifax and, in some cases, had to continue overseas because they were unable to disembark in Canada. On the other hand, the generally ice-free condition of the north shore allows Les Escoumins to operate throughout the year.

In 1964, the South Channel had retained all its original disadvantages and, in addition, had deteriorated over the years because dredging and maintenance were abandoned, e.g., in Beaujeu Pass silting reduced the channel depth to 17 feet at low water, and the exact depth was not known in many places between 1949 and 1964 because soundings had not been made in spite of many requests by the pilots. On October 7, 1960, Mr. H. L. Land, Chief Engineer of the River St. Lawrence Ship Channel Division, Department of Transport, wrote in reply to such a request that the soundings available then dated back to 1949, and that soundings had been discontinued because it was "not the policy of the Department to maintain the south channel" (Ex. 667). Hence, depth indications on charts of the area could not be relied upon but, nevertheless, no notice of *caution* appeared and no Notices to Mariners were issued. At long last, after insistent requests by the pilots, some soundings were taken in 1964. Because of "more pressing commitments" a full survey was not made, but Beaujeu Channel was sounded in November 1964, by C.C.G.S. *Beauport*. Considerable silting was evident in the vicinity of buoys 69B and 70B (Ex. 1464(h)). The shallowest areas indicated by the survey provided only 10½ feet of water.

In addition to the discontinuance of maintenance dredging, some aids to navigation were degraded, e.g., the lights on Bellechasse Island and Grande Ile and at Kamouraska were changed from watched to unwatched lights.

However, the South Channel still remained a regular, navigable route but, because of its limited depth, it was not used as often as the North Channel. The pilots also tended not to use it at night because unwatched lights were less reliable but some pilots thought it safe and took it frequently and, on occasion, considered it preferable, e.g., for a slow assignment involv-

ing a tug and tow which could be a hindrance in the North Channel, especially in a strong current. In 1962, pilot M. Dussault went by the South Channel on about 12 of the 104 trips he made that year: one was a large "laker" in ballast, one or two were low-powered colliers and the remainder were smaller vessels.

(d) *Quebec District Described in Three Sections*

The Quebec Pilotage District readily divides into three sections each with its own peculiarities: (i) from Les Escoumins to Goose Cape, where the channel is relatively wide but the currents are rather treacherous and fog is frequent; (ii) from Goose Cape to Quebec, where the channel is narrower and, hence, there is greater danger when vessels meet; (iii) the winding, fiord-like Saguenay River.

(i) *St. Lawrence River—Les Escoumins to Goose Cape*

When upbound vessels take a pilot, they stop or slow down at the Les Escoumins pilot boarding station. They must keep a good lookout for the ferry that plies between Les Escoumins and Trois Pistoles on a regular daily schedule during the navigation season, and also for the vessels that congregate in the boarding area. However, this area is open water and there is little danger except when visibility is poor.

Above Les Escoumins, the first navigational problem is met off the mouth of the Saguenay River. Vessels not bound for a Saguenay port used to proceed up the St. Lawrence either north or south of Red Islet. The southern course is normally selected for vessels taking the South Channel but Masters proceeding by the North Channel make their decision according to circumstances and prevailing conditions.

In clear weather, there is no danger in taking the northern course where the channel is at least two miles wide, provided the Master or pilot is fully aware of local conditions. A deciding factor is the state of the tide, since time may be gained using the southern course due to the difference in the direction of the currents north and south of Red Islet.

There are other navigational hazards at the mouth of the Saguenay. The river's discharge meets the tidal flows in the St. Lawrence and the resultant currents move strongly in various directions, following a clockwise pattern and varying in intensity according to the stages of the tide. Heavy traversing traffic is also encountered: ocean-going ships sailing up and down both the St. Lawrence and the Saguenay, as well as numerous coastal vessels, including low-powered river schooners, which must be closely watched because they are greatly affected by strong cross-currents and also because their light draught permits them to cross over the bank and "cut the corner". Hence, there may be several of them approaching from different directions at the same time. Fog, which is frequent in this area, compounds these dangers. At such times, there is a tendency for small vessels to use the safer north course,

especially now that the south route lacks the fog signal formerly emitted by the Red Islet lightship (now replaced by a buoy). The net result is increased traffic in the most difficult part of the channel when visibility is most often impaired. (For serious casualties in this area, vide pp. 367 and ff.)

When the boarding station was at Father Point the pilots normally went south of Red Islet. After the move to Les Escoumins, although the north route was generally taken, some pilots continued to follow the south course out of habit, or occasionally did so to meet the request of a Master.

The Security Committee of the Pilots' Corporation recommended that in adverse weather and in poor visibility the pilots pass south of Red Islet when downbound and north when upbound in order to facilitate traffic (Corporation Bulletin, May 1, 1963, Ex. 688), and suggested that it would be a safety precaution if all ships were obliged to comply with this rule.

The Department of Transport has since adopted the pilots' suggestion and has gone even further by making the two lanes mandatory at all times, irrespective of weather conditions. However, the subject is covered in only one place and in a very indirect and oblique manner, i.e., in the Notice to Mariners dealing with the Marine Traffic Control System (No. 243 dated March 7, 1969, and other publications reproducing this Notice to Mariners such as the *St. Lawrence River Pilot, 1st. ed., 1966, Supplement* No. 2, p. 3, amendment to *p. xxvii,* and the pamphlet describing the Marine Traffic Control System). Moreover, despite the imperative language used, the instruction is concealed in a parenthetical remark on Red Islet in the section dealing with Mandatory Reporting Points. It is not contained in the St. Lawrence River Safety Regulations—as it should be if the intention is to make it mandatory (Ex.1538(j)). The reference in Notice to Mariners No. 243 reads as follows:

> "*Reporting by Ships*
> *Mandatory Reporting Points*
> Upbound and downbound, transitting vessels are to report to the Control Centre when passing the following reporting points:—
> . . .
> 7. Red Islet..... Westbound ships shall pass north of Red Islet. Eastbound ships shall pass south, but may pass north when entering the Saguenay River."

For five miles past the entrance to the Saguenay there is open water. There the River is about seven miles wide as far as Hare Island North Reef where the North Channel narrows to four miles. In this area, vessels sometimes criss-cross, e.g., they may pass north of Red Islet and then proceed to the South Channel which runs south of Hare Island North Reef, or vice versa.

In the 44-mile stretch of the North Channel from Red Islet to Goose Cape there is little navigational difficulty. At its narrowest, the channel is over three miles wide and compass courses are used for long distances.

However, the navigator must be alert and keep his ship in position along the right hand side of the channel. Care must be taken off St. Siméon, especially during fog, to watch for the ferry that plies between that point and Rivière du Loup. The north shore is bold and mountainous in that area with very deep water close up to the shoreline.

Morin Shoal lies ten miles from Goose Cape and four miles off Murray Bay where the North and South Channels merge. The channels are wide, extending about four miles on either side of the shoal, but the movement of traffic must be carefully watched. During periods of poor visibility, pilots pass south of Morin Shoal when downbound, and north when upbound.

In this region and toward the middle area of the river outside the channels, lie banks and shallow areas that make good anchorages. There are also sheltered areas close to the North Shore at Murray Bay and off St. Irénée. Upbound deep-draught vessels frequently use these anchorages to await favourable tidal conditions before negotiating Coudres Passage some ten miles to the westward.

In the same stretch of the South Channel, however, the situation is quite different. At its narrowest point between Barrett Ledges and Middle Shoals, opposite Rivière du Loup, the channel is less than a mile wide and is lined with extensive mud banks on both sides, those off the pier at Pointe de la Rivière du Loup extending seaward over a mile and a half. The St. Siméon-Rivière du Loup ferry is an additional hazard. Nevertheless, the South Channel is fairly straight here and can be negotiated by three long compass courses.

Between the western end of Hare Island Bank and Goose Cape, both South and North Channels merge into an area, 15 miles long and some five miles wide at its narrowest, which is unobstructed except for Morin Shoal mentioned above.

(ii) *St. Lawrence River—Goose Cape to Quebec City*

In the second section of the river, a stretch of some 60 miles from Goose Cape to Quebec, the channel narrows considerably. Fog is less frequent here than off the mouth of the Saguenay, but when visibility is greatly reduced it is a normal precaution to anchor until conditions improve because the channel is more restricted.

The river is still wide in the five-mile stretch from Goose Cape to Cap à la Baleine. Here again, vessels may be expected from several directions: some bound downriver, some crossing from the North to the South Channel en route to Rivière du Loup, schooners transiting the Middle Channel and other ships leaving or approaching the St. Roch Traverse.

It was in this area that, on September 5, 1964, a collision occurred between S.S. *Leecliffe Hall* and M.V. *Apollonia* (p. 370), resulting in the subsequent sinking of the *Leecliffe Hall*. Both vessels were using the North

Channel but proceeding in opposite directions. The collision occurred at the south side of the North Channel approximately two miles northeast of Pointe à la Baleine and 1.2 miles south of Cape Martin. The *Apollonia* was downbound and had passed through Coudres Passage, while the *Leecliffe Hall* was upbound and heading towards Coudres Passage. In so doing, the latter ship apparently failed to keep close to the north shore, i.e., to the starboard side of the channel. The collision occurred during fog and while the *Leecliffe Hall* was crossing the channel to enter Coudres Passage, thereby presenting her port side to the *Apollonia's* bow (Ex. 1457).

Reefs, banks and islands divide the river into three main channels upriver from Cap à la Baleine:

(A) Coudres Passage, north of Ile-aux-Coudres, which forms part of the North Channel;

(B) Middle Channel in mid River; and

(C) St. Roch Traverse, on the south side of the River, which forms part of the South Channel.

Middle Channel lies between shoals and islands and flows through narrow, intricate and difficult passages to join the South Channel. Because of this and its shallow entrance, it is not maintained as a regular channel and is not used by large ships. "Although by placing buoys where requisite, it would be possible to take large vessels up to Québec by Middle Channel were it actually necessary to do so, yet it is too intricate and difficult for general navigation." (*St. Lawrence River Pilot, First Edition 1966, p. 125.*)

The St. Roch Traverse could accommodate much deeper vessels but, since it forms the entrance to that part of the South Channel that extends to its western limit off Madame Island, access is limited by shallows, especially at Beaujeu Passage. In 1964, it could safely accommodate vessels drawing less than 16 or 17 feet, and even vessels of deeper draught with the help of the tide, but, in this case, traffic would be slowed down because these large vessels would be forced to wait for high tide to allow them to transit the shallow areas.

The channel through St. Roch Traverse and Beaujeu Passage is very narrow with currents up to seven knots during spring tides and of nearly this velocity during ordinary flood tides. The approach to the Traverse is marked by a lighted bell-buoy at its eastern entrance, then by three light-buoys (one a bell-buoy) placed zigzag to mark both sides and two light-buoys (one a bell-buoy) at the western end. These buoys have occasionally been carried away by the current.

This channel may be compared to a funnel through which a large body of water rushes. Beaujeu Passage is a dredged channel but, since it had not been maintained for several years, it has silted to a depth of some 17 feet at low water, and to a width of about 700 feet. The Passage is marked by buoys and a set of range lights. Throughout the area, attention must be paid to the

ferries that cross the river between Crane Island and Montmagny and between Berthier and Grosse Ile. Despite its limitations, it must be noted that the South Channel would prove very useful if a vessel sank in the narrowest part of the North Channel, i.e., the North Traverse, which is only 1,000 feet wide and might be completely blocked by such an accident.

The route taken by most ships is through Coudres Passage because it is deeper and wider. However, the speed and direction of the currents make navigation difficult.

Coudres Passage is wide enough for safe navigation (one mile at its narrowest part) but criss-cross currents running up to seven knots make it the most dangerous section of the North Channel. In addition, the Passage forms a continuous curve which bends sharply south at the western end where it is narrowest. A careful lookout must be maintained for the Cape St. Joseph-Ile aux Coudres ferry which presents another hazard.

When Coudres Passage is negotiated, exceptional precautions must be taken to keep to the right side of the channel, especially by small low-powered vessels which may have to allow as much as 15 or 20 degrees of leeway to offset the strong cross-currents. At night, they may confuse a navigator unacquainted with local conditions because their side lights may not indicate their true direction (re attempts to install a directional ail, vide pp. 160-162).

From the western end of Coudres Passage to Longue Pointe off Cap Gribane there is a 19-mile stretch where the channel measures a mile and a half at its narrowest. This can be negotiated in two straight long courses. It was in this area that on July 20, 1963, a collision occurred between S.S. *Tritonica* and S.S. *Roonagh Head,* resulting in the sinking of the *Tritonica* (p. 368). The collision occurred during fog, in mid channel off St. François wharf, Petite Rivière, about six miles southwest of Ile aux Coudres, where the channel is two miles wide (Ex. 1353).

Maintenance dredging is required in the North Channel only in the 2½-mile section between Cap Gribane and Cap Brûlé. The channel is restricted to about 1,000 feet between buoy 108, which marks the south side of Longue Pointe Ledge, and buoy 109, which marks the northeastern extremity of Brûlé Bank. This is one of two areas where small vessels must keep outside the dredged channel. Siltation is expected here. The pilots stated that between 1960 and 1964 they had reported to the Department of Transport various occasions when ships touched or grounded (Ex. 1319 and Ex. 652). Soundings revealed a 25-foot patch at low tide.

Dredging was undertaken in 1961 to maintain in this area a 35-foot channel at low water. Despite this, it was found that siltation was still in rapid progress, and there was no alternative but to retain in effect Notice to Mariners No. 15 of 1957, warning that the limiting depth in the area was 30 feet at lowest normal tides and that such limitation would continue until the Ship Channel Division could carry out a model study of the siltation problem

and more corrective measures could be devised. This situation still prevails (for a progress report as of May 1969, vide pp. 159-160). Because it is the shallowest area, it is the control point for vessels bound to or from the harbour of Quebec using the North Channel.

At Cape Tourmente two miles east of Cap Brûlé the rolling, low, mountainous terrain that forms the north shore of the river as far eastward as the mouth of the Saguenay River ceases and from Cape Tourmente westward to Quebec the shore line no longer ends abruptly but is composed of wide sloping mud banks. The navigable North Channel ends five miles west of Cap Gribane and becomes the North Traverse which crosses the river to funnel traffic into the wide, deep waters southeast of Orleans Island and merges with the South Channel to form the main channel to Quebec. Orleans Passage on the northwest side of the Island is not dredged, is very shallow and can accommodate schooners and small craft only.

The straight nine-mile North Traverse, lined with buoys and range lights in both directions, together with the 2½-mile area between Cap Brûlé and Cap Gribane comprises the total 11½-miles of maintenance dredging along the 123-mile route of the otherwise deep waters of the North Channel. To navigate through these dredged channels of limited depth in tidal waters requires careful planning and attention to detail. If a vessel draws more than 30 feet, the time of transit must be calculated to coincide with the state of the tide to allow sufficient water under keel. Otherwise, manœuvering would be most difficult.

Past the North Traverse where the South and Main Channels merge there is deep water as far as the Quebec Bridge. The wide Main Channel curves around the south side of Orleans Island and continues to Quebec harbour.

From the western end of Orleans Island the channel flows in a long curve, with swift cross-currents as it passes Lauzon. No set courses are followed here. Four buoys mark the ends of the banks off each shore and the navigator must determine his course according to the state of the tide, currents, weather conditions and traffic in order to keep on the right side of the channel at all times.

When negotiating the bend off the Lauzon Shipyards a strong ebb tide will force a downbound ship toward the west point of Orleans Island, although its direction is almost parallel to the channel, and a little further on it will draw her more into it. To negotiate the Lauzon bend and keep to her starboard side of the channel the downbound ship must initiate her course early, i.e., when abeam of the breakwater off the entrance to the St. Charles River. When an upbound ship is off the west end of Orleans Island a spring flood tide has a tendency to force her toward the north bank. The all important matter is that vessels either upbound or downbound must keep to their starboard side of the channel.

Small low-powered vessels stemming tides or currents in this area do not hesitate to cross the main channel and proceed on the wrong side if they can profit from a favourable current—otherwise they may have to anchor until the tide changes. In addition, these small vessels (and occasionally larger ships) have a tendency to "cut the corner" when bound upriver.

There have been many accidents in this area and bend of the river. On July 19, 1963, a triple collision occurred off Point Lévis between the vessels *Bariloche, Canadoc and Calgadoc* (p. 380). The primary cause of this accident was that during fog the upbound *Canadoc* moved to the wrong side of the channel while "cutting the corner" and thus crossed the path of the downbound *Bariloche* (Ex. 1466(1)). Some years earlier, on July 12, 1950, the Cunard liner *Franconia* suffered a spectacular grounding when she struck the west end of Orleans Island shortly after her departure from Quebec. It was stated that the current might have been a factor but the pilot should have known the situation and plotted his course accordingly. The pilot should know that the vessel's speed over the ground is increased when downbound with an ebb tide and he should make the necessary alteration of course when approaching the bend. The wind would also have to be considered.

At nightime, extreme caution must be exercised by upbound vessels since the navigation lights of a downbound ship can be completely lost in the background light of downtown Quebec and Beauport and the ship may be seen only at the last minute if she is met in the bend. This danger is compounded by the oncoming ship showing first her green light and then her red, as she conforms to the bend of the channel. This, however, should be expected.

The main difficulties to be met in the harbour are: harbour traffic, vessels at anchor, tides and their changes, and counter currents.

The ship channel winds through the harbour past the city of Quebec in a long double curve decreasing in width from three quarters of a mile to half a mile opposite the pilot station, four and a quarter cables off Sillery, at Pointe à Puiseaux, and two and a half cables at the Quebec Bridge.

The main hazard when proceeding through the harbour is traffic approaching from all quarters. In addition to vessels in transit, there is cross-traffic from the shipyards at Lauzon on the south shore, from the St. Charles River Basin, from the Princess Louise Basin and from berths at various locations in the harbour. All must be carefully watched.

Most of the docks, wharves, piers and harbour facilities are located on the Quebec side where they extend for four miles from the St. Charles River estuary to Sillery pier. The harbour facilities are now being extended eastward from the St. Charles River over Beauport Bank. The jetty extending seaward on the east side of the St. Charles River estuary when completed

should provide some protection against flood currents on piers situated inside the estuary. There are also many locations on the south side where traffic flows, i.e., the two dry docks, marine railways and several wharves at Lauzon, as well as a small shipyard and a Government deep-water wharf opposite Quebec. Oil wharves are expected to be erected by private concerns on the south shore at St. Romuald.

Traffic may be encountered all along the north shore but most concentrations of shipping are at the extremities of the harbour: in the east, off the hidden St. Charles River Basin and Princess Louise Basin and, in the west, off Wolfe's Cove Terminal and Sillery pier. In between are the Department of Transport wharves and other privately-owned wharves and piers, e.g., those used by the Lévis ferries, by Canada Steamship Lines and by tugs.

The Lévis ferries cross the river every 20 minutes in the navigation season, except for a few hours after midnight when they cross at longer intervals. However, the pilots acknowledged that their Masters are most co-operative and can always be relied upon to give the right of way: "They can not be requested to do any better, it would be impossible."

Ships in transit change pilots in the straight stretch after the Lauzon bend where the River narrows between the cities of Quebec and Lévis. It was remarked that vessels performing that operation should keep to the starboard side of the channel; otherwise, they would be inviting an accident in bad weather. Downbound vessels should not come near the Quebec side of the River to embark or disembark a pilot unless the weather is clear and there is no upbound traffic.

There are no finger piers, and the movement of vessels along the various wharves can be easily detected, except for the enclosed Princess Louise Basin and the St. Charles River Basin where outgoing traffic creates a serious problem.

The entrance to the Princess Louise Basin is through a 66-foot opening reduced to 63 feet by the fenders on the wharves which face the River. Vessels proceeding out present a special hazard because they are completely concealed from the traffic on the River and can not see passing vessels. In order to clear the narrow opening, they must maintain good speed to maintain steerageway, especially if a cross-current is met at the exit. They have some headway when entering the River and can not be stopped immediately.

Similarly, a vessel coming out of the St. Charles River Basin is hidden from a vessel downbound on the River. Although the entrance is 1,000 feet wide, sufficient speed has to be maintained to counteract the effects of the cross-currents and the wind at the entrance. Vessels in the ship channel, especially those upbound, must reduce speed when they approach this area on a flood tide and must always be on the alert for signals and signs of ships leaving the Basins.

In the western part of the harbour the River widens from half a mile to about a mile off Wolfe's Cove. In the south side of this sector lies the anchorage area for the harbour of Quebec, the upstream limit being a line across the River just past Wolfe's Cove. At times, the anchorage is crowded with large "lakers" awaiting their turn to unload at the grain elevators. These long ships need wide swinging room and sometimes lie crosswise in the River under the influence of tide and wind. Stern anchors are never used there. Although they are anchored to the eastward of the centre line of the channel and in the south part of the River, they may present a problem, especially at night and during poor visibility. The anchorage area is more congested during the fall when large lakers and foreign vessels are awaiting berths.

The anchorage is exposed to easterly winds and on occasion the pilots board anchored vessels to keep a safety watch. It is known that in this area many vessels have dragged their anchors over a long distance.

Vessels may also be anchored just outside the eastern limit of the harbour off La Martinière at the explosive anchorage, or a vessel going to dry dock might anchor in the south part of the channel, just off the Champlain Dry Dock, i.e., off buoy 87½ B. A ship could anchor almost anywhere in case of emergency, but there would be considerable risk of damaging the submarine cables which lie across the River downstream from the anchorage area limits.

The tide in itself presents no serious problem, except for the inner Princess Louise Basin which is tidal. Elsewhere, there is deep water at the wharves to accommodate vessels at any stage of the tide. The currents created by the tide present the most serious problem and, under certain conditions, render manœuvring and berthing very difficult if not impossible.

Soundings are taken every spring in areas where obstacles to navigation are most likely to be found and the results are made available to all concerned. Some sedimentation occurs at the Anse au Foulon terminal and some silting at the entrance to the St. Charles River. These areas are dredged to a depth of 37 or 38 feet at low water and capital dredging and improvements are being carried out in the St. Charles River Basin so that vessels will have more water and more room to manœuvre.

Counter currents caused by the contour of the land and the position of various wharves are often experienced in the harbour near the shore. In addition, some tidal currents do not coincide with the rise and fall of the tide, e.g., in some areas ebb tide begins up to an hour and a half before high water.

The areas most affected are the northeast end of the harbour, i.e., the deep water wharves in Princess Louise Basin and the St. Charles River estuary, and the Irving Oil wharf situated at Sillery, in the northwest part of the harbour.

Wolfe's Cove Terminal does not present any unusual difficulties regarding berthing. It is situated in a rather sheltered area which does not bear the brunt of the tidal currents, either flood or ebb, and there is also ample sea room to manœuvre.

The Irving Oil wharf at Sillery is a special case by itself. Its limitations are caused by a combination of exposure to currents and River traffic, and lack of normal berthing facilities adequate for its requirements. The berth is situated at Pointe à Puiseaux (Sillery), which extends into the stream and, therefore, is exposed to the strong tidal currents. When manoeuvring, there is always a certain amount of danger involved because it lies about one mile below the Quebec Bridge in the narrowest part of the harbour at the edge of the channel. Careful choice must be made of time, wind and tide. The situation is further complicated by the fact that the berth is limited to the bare essentials required by the large tankers that have to be accommodated. Strictly speaking it is not a wharf, since it is only a floating raft attached to an old rebuilt jetty to which vessels are secured with the assistance of tow trucks from the shore, small boats and tugs. The floating wharf is about 80 x 30 feet—a very small area in relation to the large vessels that have to be berthed there, i.e., tankers of the *Irvingglen* type which are over 10,000 tons. The opinion was expressed that the facilities provided are inadequate for this type of vessel.

Furthermore, the berth is at the edge of the embankment, which is strewn with stones and boulders from the ruins of previous wharves on which the Irving wharf is built. The best time to berth is the last hour of the flood when there is enough water under keel to avoid the stones and boulders which obstruct the space needed for manoeuvring at low tide. At night, the difficulty is compounded by lack of visibility since the area is not lighted and the moving lights of the trucks used to haul the lines impair night vision. Berthing takes longer then and is more dangerous. However, the pilots have berthed ships at all states of the tide as well as at night, but they have recommended that berthing be restricted to daylight hours only and at the height of the flood tide.

The situation at the northeast end of the harbour is much more serious because that is where most of the deep water berths are situated and these, together with Wolfe's Cove Terminal, accommodate most of the ships that call at Quebec. The grain elevators are also located in that part of the harbour where the River narrows and begins to curve off Lauzon. Berths 18, 25 and 26, facing the River, bear the brunt of the flood tide but are sheltered to a certain extent from the effects of the ebb tide. For the same reason, the flood tide makes it more difficult to enter the St. Charles River estuary and Princess Louise Basin.

Navigational difficulties increase when the flood tide is accompanied by a northeasterly wind—the prevailing wind in the Quebec area which often reaches gale force. Berths 18, 25 and 26 and the entrance to both Basins are subjected to the combined effect of such winds and tides, and the piers on the west side of the St. Charles River Basin are fully exposed to the north east wind.

There is little argument about when ships should enter the Princess Louise Basin because there is general agreement that large ships can not possibly go in at certain times. The entrance is narrow and there is limited space inside. Hence, on a flood tide a vessel can not proceed fast enough to counteract the current at the entrance and still lose way without colliding with the piers at the far end of the Basin. For this reason, movements into the Basin are restricted to slack tide when there is little or no current and vessels may proceed at slow speed.

There is a difference of opinion about manoeuvring to berths 25 and 26 which face the River and berths 28 and 29 inside St. Charles Basin. If there is full flood tide and a gale force northeasterly wind, berthing is almost impossible and no pilot would dare attempt it, but when conditions are less severe the attitude of the pilots varies with the individual. This has become a bone of contention that will be studied later (pp. 322 and ff.).

Ships proceeding to the Lauzon dry docks must wait for the right tide and wind conditions to suit their type, draught, etc. Generally, these vessels are in a damaged condition and may be more difficult to manoeuvre.

(iii) *Saguenay River*

The Saguenay River from its estuary to the harbour of Chicoutimi at the head of navigation is 70 miles long. It has deep water up to the head of Ha Ha Bay, where the Bagotville and Port Alfred wharves are situated, and as far as St. Fulgence from where a nine-mile long channel dredged through the shoals leads to Chicoutimi.

It much resembles the inlets and passages of the B.C. Coast. It is flanked by mountains rising more or less abruptly from the water which form precipitous headlands sometimes over 1,000 feet in height. In the first 50 miles, the water is almost as deep as the mountains are high. The depth reaches 100 fathoms on either side of the river, often within a few feet of the shore except for that small sector situated between the shoals at the entrance to the river where there is a bar over which there are eight to ten fathoms of water.

The main hazards at the entrance are fog and currents. Fog is quite frequent there, more so than elsewhere in the District, and may last for several days. A ship without efficient radar should not attempt to proceed under these conditions. The wise course is to proceed to a safe anchorage at the entrance to the river and wait for better weather.

The magnetic compass is not reliable in the Saguenay River because of the local magnetic disturbance as indicated by a warning on C.H.S. charts 1202 and 1203.

Another difficulty is caused by the currents at the entrance to the river, especially at the turn of the tide when they are in the making. The eddies make it difficult, even for an experienced pilot, to know what course to set. Much depends on prevailing winds in the preceding days and there are other factors such as the ship's speed, manoeuvrability and draught. The pilots reported that the information on the charts as to the direction and strength of the tidal currents at the various stages of the tide is quite accurate. While the currents are not dangerous, they are uncertain at the change of the tides and must be watched. When a ship enters the Saguenay, course must be adjusted by 10 to 15 degrees to counteract the set, and by even more when approaching Pointe Noire.

The channel is at its narrowest—about half a mile—between Pointe aux Vaches Reef and Lark Islet. Once this area has been passed, there is deep water and the current is more in the general direction of the river and parallel with the shore. It varies with the wind, the tide and the freshet but there is little variation in its direction. On a flood tide the current reaches five or six knots at the entrance to the Saguenay, diminishes throughout the course of the river and is quite weak in the upper reaches, but on the ebb tide the outward flow is strong throughout.

Vessels must at all times proceed on the starboard side of the mid-channel line in the Saguenay River, even when negotiating pronounced bends with or against a strong current. It was stated that it is a dangerous practice to cross over to the port side (as is done by many small vessels, particularly coasters) and this has been the cause of "close shaves". Because of the steep shoreline and the bends of the river it is difficult to see an approaching vessel and, if she is not on the proper side of the channel, a collision may result. An example of a dangerous area where course must be altered about 55 degrees is Pointe aux Crêpes. Pilot Dussault emphasized that there is very little room to manoeuvre in a narrow channel and that vessels must keep to their own side.

On the Saguenay there are several sharp, large alterations of course which must be made gradually because otherwise the strong current would take charge of the bow or the stern of the ship and turn her around. Some ships lack power to recover in this situation.

At night, the heavy shadows cast by the mountains limit visibility and the line of demarcation between land and water can not be distinguished. When it is very dark, ships must be almost completely blacked out so that landmarks and aids to navigation can be recognized. This procedure creates a hazard for other ships and should, therefore, be adopted for brief periods only.

As in British Columbia waters before the invention of radar, navigation by whistle echo was a common practice on the Saguenay during poor visibility. Since anchorage areas are both inadequate and widely separated, ships often have no choice but to proceed, and vessels without radar still use this method of navigating occasionally. They reduce speed, steer a course parallel to the shore and by timing the return of the whistle echo determine their position in the channel. The steep rocky shores of the Saguenay produce very good echoes.

When navigating at night it was also general practice to trail one anchor with about three shackles of cable, both as an extra precaution against grounding and as an indication of closing the shore.

Anchorage areas are few and scattered and are used only in cases of emergency. They are unsatisfactory on account of the depth of the water and the lack of sea room to manoeuvre.

The channel varies in width from six cables to two miles. In the upper reaches between St. Fulgence and Chicoutimi it extends for eight nautical miles as a dredged, curving, man-made channel 250 feet wide increasing to 350 feet on the curves, 20 feet deep at low water and lying between shoals and mud banks. There are seven different courses in the channel, all adequately marked by directional ranges and buoys.

Navigation in this stretch demands caution. Because there is so little room, passing another ship always requires special care and extreme caution must be used when passing a vessel moored at the buoys off one of the three oil installations at the edge of the channel. If a tanker is discharging, the moving vessel must go slow, thus reducing manoeuvrability and running the risk of losing control in the varied currents which are often swift and across the stream.

The charted depth in 1963 was only 16 feet but there is 27 feet in the Chicoutimi harbour basin,16 feet at the Chicoutimi Oil Terminal, 15 feet at the Imperial Oil Marine Terminal, and 20 to 26 feet at the Irving Oil Terminal (all depths at low water). The St. Fulgence channel has since been deepened to 20 feet at lowest normal tide. Most tankers arrive drawing between 19 and 22 feet. They can proceed only at high tide (when sufficient depth of water is available) and generally when the tide begins to ebb so that there is a current against the bow of the ship to help her make fast to the mooring buoys. However, if the current is too strong the manoeuvre becomes too difficult and dangerous. Such assignments must be planned carefully before venturing into the channel.

It takes about 45 minutes from St. Fulgence to Chicoutimi at a speed of 8 to 11 knots. Once an average size ship enters the narrow channel she must keep going because there is no place to turn around and to anchor would be dangerous. In any event, there is usually insufficient water at low tide.

### (3) Principal Harbours

From the pilotage point of view, the principal harbours of the Pilotage District of Quebec are Quebec, Ha Ha Bay and Chicoutimi.

(a) *Quebec Harbour*

In general terms it extends from Cap Rouge, just above the Quebec Bridge, to the western end of Île d'Orléans and includes 11½ miles of channel with maximum depths varying from 120 to 190 feet.

As seen earlier, the main installations in the harbour are located on the north shore, mostly in the city of Quebec. There are 25 deep water berths with approximately 35 feet of water at low tide. The north waterfront can be divided into three sectors: western, i.e., the Sillery wharves and Wolfe's Cove Terminal (Anse au Foulon); eastern, i.e., the Princess Louise Basin and the St. Charles River estuary; central, i.e., the wharves, mostly privately-owned, in between.

The harbour is under the control of the National Harbours Board. The extent of the Board's powers is stated in the National Harbours Board Act (1952 R.S.C. 187) which, *inter alia,* provides that the Board has no jurisdiction over, or control of, private property in the harbour, but has full control over the use of the Board's own property. On the other hand, the Board may make regulations regarding all matters that pertain to navigation in the harbour, the mooring, berthing and anchoring of vessels.

In fact, in addition to managing its waterfront properties and allocating berths at its wharves, the Board now exercises a form of traffic control in the harbour. Ships merely in transit may proceed without interference and without having to seek permission but must comply with certain regulations. The rule of the road was not altered but vessels are required to proceed at a speed not exceeding nine knots, to pass no closer than two cables from shore installations and special regulations have been issued to cover tows. Every ship wishing to use the facilities of the harbour must communicate with the Harbour Master's office in advance for instructions. There is no longer direct radio contact between ships and the Harbour Master's office. A system of this kind that had recently been set up when the Commission held its hearings in 1963 has since been discontinued with the establishment of the Marine Traffic Control System (p. 180). The system is now used to relay such requests and instructions for vessels with V.H.F. radiotelephone facilities. Other vessels must seek instructions by RT through the coast radio stations (Ex. 1461(i)).

Similarly, other movements and manoeuvring inside the harbour (except merely transiting) must have permission from the Harbour Master, obtained at the latest 15 minutes prior to the movement. If the contemplated move is delayed for any reason, permission must be obtained again. The completion of the move must be reported to the Harbour Master. This applies to all movements whether or not their point of origin or their destination is a

privately-owned wharf. The anchorage ground has been divided into ten anchorage positions which are allocated by the Harbour Master when he gives a vessel permission to anchor. In case of congestion in the anchorage area vessels are ordered to anchor before entering the harbour limits as near as possible to the south shore: downbound vessels anchor either off Ilets Dombourg, some eight miles upstream, or in the St. Nicolas cut, about one mile upstream, and upbound vessels anchor either at La Martinière or at St. Jean, Île d'Orléans (Ex.1461(i)). Vessels proceeding to or from areas where visibility is impeded, i.e., Princess Louise Basin and the St. Charles River estuary, are requested to give the prescribed signal, two prolonged blasts. Special provisions also deal with vessels carrying explosives. In addition, the harbour authorities control shore-based aids to navigation.

As a complement, in order to enable the National Harbours Board to discharge its duties, it is authorized to use reasonable force to assure that the by-laws are observed, especially those affecting safe navigation. For instance, the Board could take over any vessel if the Master refused to comply with the Harbour Master's orders and if it was thought that he would endanger shipping. The Harbour Master might then hire a pilot to take charge of the navigation of the vessel and also might obtain the assistance of the necessary tugs, all at the expense of the vessel concerned.

The pilots complained that they had had very little cooperation from the harbour authorities prior to 1960. The main point of contention was the installation of a proper communications system to indicate the movements of vessels in or out of Princess Louise Basin or the St. Charles River estuary. The pilots contended that the whistle signal which vessels are required to give is not sufficient because, for various reasons, it might pass unnoticed. For this reason, the pilots of upbound vessels have adopted the habit of giving a security warning by V.H.F. radiotelephone in addition to reducing speed and listening for the whistle. This is only partly effective since all vessels are not as yet fitted with V.H.F. equipment.

The pilots had repeatedly requested the installation at Pointe à Carcy of a visual signal that would indicate that such a movement was in progress. A signal of this kind was finally installed, but it turned out that at night the light signal was lost against the background city lights and the pilots recommended that it should be replaced by something that would attract attention, e.g., a quick flashing light. When the port authorities refused this request the pilots wrote to them in 1953 stating that they did not want to shoulder the responsibility for future accidents (Ex. 659).

Improved traffic control in the harbour since the Commission's hearings has reduced the danger because no vessel is permitted to proceed from her berth unless clearance has been obtained and this is granted only when it is safe to depart. Other vessels in the vicinity are also warned by the Quebec control centre.

Since 1960, however, communications and co-operation between pilots and harbour authorities have improved. The Harbour Master informed the Commission that he was trying to achieve even greater collaboration by holding joint meetings of pilots and harbour authorities to study the problems of navigation and movements in the harbour. He has also arranged for the apprentice pilots to spend a period in his office to get acquainted with the functioning of the harbour.

During the summer of 1962, representatives of the Quebec and Montreal Pilots' Corporations together with the Quebec Supervisor of Pilots met with the Director of the harbour of Quebec and the Harbour Master to discuss various harbour problems with the aim of making improvements. One problem was the numbering of the berths so that a pilot or a Master would know exactly where to go. Previously, as a result of inexact information a ship could be berthed some 25 or 30 feet away from where she was assigned causing unnecessary delay to correct the situation. Now, the berths are numbered and there is no danger of confusion. There was also the situation created when large tankers were lightened at the Quebec anchorage in the midst of both river and harbour traffic. It was suggested that this was a dangerous procedure that should be conducted outside the harbour limits where the population is not so dense and that, in any event, tankers and ships with explosives should never anchor within the harbour limits. The pilots recommended that upper lakers which were not ready to berth for 36 hours should be similarly dealt with in order not to congest the harbour anchorage area. They also asked that the Pointe à Carcy wharf be left completely unoccupied when large vessels have to manœuvre to enter the basin, and that the anchorage areas be enlarged and numbered. Both these requests have since been implemented (Ex. 1461(i)).

Their main recommendation was that the traffic in the harbour of Quebec be effectively controlled by the Harbour Master through a radiotelephone system (Ex. 688, Ex. 580). This important recommendation was implemented later. In May 1963, the Harbour Master was provided with a radiotelephone working on a V.H.F. band with a range of about 10 miles, and the Harbour By-laws were amended to require all vessels entering or transiting the harbour limits with or without a pilot to report to the Harbour Master for his instructions, whether they wish to anchor, to berth or merely to transit. The harbour authorities had hoped to solve the problems which arise in the more dangerous areas of the harbour, e.g., the entrance to Princess Louise Basin and the St. Charles River, with a traffic control of this kind, and also to facilitate movements to and from these places and other berths and anchorages without vessels being impeded by other traffic. Through his traffic control the Harbour Master, being conversant with the movements of other vessels in the harbour, could give the necessary information and orders. The ship-to-harbour radio communication was also to help pilots and Mas-

ters by providing them advance information whether a berth was available, and, if so, which one so that they could proceed without delay to their assigned berth, or go to anchor, and by enabling them to obtain as much information as possible about the situation in the harbour so that they could plan their course of action, such as deciding whether tugs would be necessary, and, if so, to make arrangements for their availability upon arrival.

On November 18, 1965, the Harbour Master reported that up to that time the system had worked satisfactorily, despite a few violations attributed mainly to Masters who were still not used to the new procedure and also because many vessels still do not possess a V.H.F. radiotelephone. He added that the pilots, especially the senior ones, took rather a long time to adapt themselves to the routine but he believed that now they all acknowledged the necessity for such a control. He admitted, however, that the equipment he had at his disposal did not permit overall control but, with the experience gained, he hoped it could be achieved.

In view of the short range of the equipment and the inter-relation between harbour and river navigation problems, the Harbour Master had hoped for the integration of all the various services of shipping information, radio communication and traffic control, thus making it possible to centralize data to co-ordinate, improve and standardize the service and, at the same time, contribute to the safety of navigation (Ex. 1461(i)).

As seen earlier, the Harbour Master's suggestion has now become a reality. Vessels with V.H.F. radiotelephone may now communicate with the Harbour Master throughout the Marine Traffic Control System, i.e., from Sept-Iles to Montreal. The Harbour Master exercises through the system the same control as before, except for ships merely in transit that no longer require his instructions. Pilots may now obtain from the Control Centre up-to-the-minute information on weather and traffic conditions in the harbour and through the system are allowed to make the necessary arrangements for berthing (pp. 180 and ff.).

In harmony with the programme of greater co-operation with the pilots, the Harbour Master has employed two apprentice pilots as relief Harbour Masters since 1963, and it is planned that all future pilots should have the benefit of a period with the Harbour Master before they are licensed, so that they may become thoroughly conversant with the problems and procedures of the harbour (Ex. 1461(i)). On March 31, 1969, he reported that 29 pilot apprentices have so served with him, of whom 16 now hold a pilot's licence (Ex. 1461(i)).

(b) *Ha Ha Bay Harbour*

This harbour is a public harbour administered by the Department of Transport and under the direction of a Harbour Master. It is situated at the head of the deep water of the Saguenay River, about 70 miles from its

entrance, and includes the Bagotville and Grande Baie wharves and the Port Alfred Terminal (Exs. 511 and 1464(i)).

At Grande Baie, there is a Department of Transport wharf which can accommodate light draught vessels only and, therefore, is not used by ocean-going vessels. At Bagotville, the Department maintains another public wharf with deep water facilities but it is very seldom used by ocean-going ships except when they need repairs. This wharf, however, is regularly used by coastal traders, *inter alia*, Canada Steamship Lines vessels.

The Port Alfred Terminal is that section of the Ha Ha Bay harbour where the facilities of Saguenay Terminals Ltd. are located, i.e., two finger piers, Powell Wharf and Duncan Wharf, which provide seven berths (Ex. 604) and accommodate most of the ocean-going traffic plying the Saguenay River.

These have private berthing signals that are used to direct ships. They are published in a pamphlet. The system is working well and it has been improved upon from time to time following suggestions received, *inter alia,* from pilots. Saguenay Terminals Ltd. do not maintain any floating aids because the great depth of water throughout the Bay makes them unnecessary.

Tugs are available. In 1963, two very powerful tugs belonging to Saguenay Terminals Ltd. were in use and the pilots reported that they were very suitable for large ships. These tugs are equipped with radiotelephones, which are regularly used, but signals are also used, mouth whistle for the forward tug and ship's whistle for the after tug.

The only ships that come to these berths without pilots are small coastal vessels and lakers up to about 300 feet in length. Saguenay Terminals Ltd. have never requested these ships to employ pilots because their Masters are quite used to berthing their own vessels. There was an attempt to make the use of tugs compulsory, but the requirement was withdrawn after a few weeks. The charge was $150 per tug. Two tugs were required if the vessel was more than 315 feet in length. In 1963, the price being charged for tug service was $175 per tug. A ship 10,000 tons and over normally requires two. If one of the berths is occupied or if there are adverse weather conditions, whether or not tugs are used, the practice is to trail anchor while berthing, but when the adjacent berths are empty and there are no special adverse conditions the vessel may be berthed without using the anchor. Berthing is difficult when there is a northeasterly wind.

Port Alfred is a Port of Entry provided with the necessary services. Saguenay Terminals Ltd. statistics for 1962 show that 450 vessels used their facilities, that there was a steady decrease over the four preceding years and that the peak was reached in 1955 when they accommodated over 750 ships. They handle a considerable number of lake vessels but, on the other hand, seagoing vessels are much larger and 10,000-ton Liberty ships are now disappearing and being replaced by new, modern ships up to 18,000 tons.

The number of ships has decreased but the aggregate tonnage has remained unchanged. The term *ship* in these statistics means a movement of cargo; therefore, a vessel coming in loaded with bauxite and leaving with another cargo is shown as two ships. Since they take into account only vessels with cargoes destined to Saguenay Terminals Ltd., the complete shipping figures for Port Alfred would be greater because a large number of vessels carry pulpwood, etc. for Consolidated Bathurst Paper Co.

(c) *Chicoutimi Harbour*

Chicoutimi is the only harbour in the Quebec Pilotage District, except Quebec itself, that is controlled and managed by the National Harbours Board. Before it was taken over by the National Harbours Board in 1936 it was administered by a Commission under a separate Federal Act.

The seaward limit of the harbour is situated in deep water about 25 miles downstream from Chicoutimi, four and a half sea miles below the entrance to the dredged channel, i.e., a line drawn from the tip of Cape West on the southwest side of the river to Anse à Pelletier on the northeast side, but excluding Ha Ha Bay. It extends upstream to high tide mark about four miles beyond the Chicoutimi swing bridge. For practical purposes, however, the harbour ends at the bridge since the channel upstream is very narrow and crooked and is not maintained.

The entrance to the harbour proper is the winding St. Fulgence channel which is dredged throughout its eight nautical miles. At three places on the west side, in enlargements specially dug in the mud bank for that purpose, there are three tanker berthing installations consisting of mooring buoys to which tankers make fast to discharge petroleum products by pipe line. These buoys are located in the middle of straight stretches so that passing vessels do not have to manoeuvre when they meet tankers berthed just at the edge of the channel. The first of these installations is Chicoutimi Oil Terminal owned by National Harbours Board and situated about midway along the channel. The Imperial Oil Marine Terminal and the Irving Oil Terminal are closer to the city and about half a mile apart. In Chicoutimi harbour proper, there is a 2600-foot wharf with 27 feet of water at low tide, which can accommodate five ships of about 500 feet in length. All the installations in the harbour, except the Imperial Oil Marine Terminal and Irving Oil Terminal, belong to the National Harbours Board. There is a 750-foot wide turning basin alongside the main wharf.

There is no Harbour Master. Control is exercised by the Port Manager who, *inter alia,* directs ship movements within the harbour, assigns berths (except at the two privately-owned installations) and supervises aids to navigation.

Ships in the harbour generally do not need tugs but, if assistance is desired, tugs are available from Port Alfred. Ship movements are occasional-

ly delayed by the tide since the availability of water governs the entry of deep-draught vessels into the approach channel.

The Commission was informed that there had been very little damage to the harbour installations for six years. From 1957 to 1960, three accidents, one in 1958 and two in 1960, caused damages amounting to $2,149.26 in all. Their cause was a particular manoeuvre that has to be made when leaving the wharf. The pilots use the current to turn around while the ship is still made fast by stern lines. The lines must be released at the very last moment and the engines take over. There is no time to waste and, if a line is not let go, a man has to be on the spot ready to cut it.

The speed limit as prescribed by the National Harbours Board by-laws is seven knots within two miles of Board property. The harbour authorities have no police to control speed. Infractions are reported by residents along the river. When complaints are received the only action taken by the harbour authorities has been to bring the matter to the attention of the Master and the pilot concerned.

Silting and sedimentation occur in the channel but very little in the turning basin. The channel is the responsibility of the St. Lawrence Ship Channel Branch of the Department of Transport.

The size of vessels calling at Chicoutimi is governed by the features of the approach channel, especially its limited depth and its width at sharp bends. The maximum permissible draught was 25 feet spring tides when the depth at low water was 16 feet; vessels with a 29-foot draught may now be accommodated at spring tides since the channel depth was brought to 20 feet. Consideration has to be given to under keel clearance and to the change in water level caused by the tide while the channel is being transited. The space available to negotiate the sharp bends determines the maximum length of any vessel which can proceed through the Saguenay, e.g., in October 1961, the pilots informed the Pilotage Authority that *Canuk Trader*, a 440-foot Park ship, could not be brought up to Chicoutimi safely to take on a cargo of some 3,000 tons of scrap metal. In their reply to the Authority the Board of Directors of the Pilots' Corporation stated that, since the channel was only 250 feet in width and 350 feet at the bends, it was impossible to pilot such a ship in complete safety. This incident is studied later (p. 321).

Oil tankers account for 80 to 90 per cent of the Chicoutimi traffic. Little cargo is shipped from Chicoutimi except small quantities of scrap metal once every two years, such as the incident of the *Canuk Trader* referred to previously.

Tankers arrive loaded and depart light. When they are too deeply laden they have to anchor outside the channel and discharge into a lighter that shuttles between the tanker and the oil terminal concerned. It was on such an occasion in 1962 that pilot V. Lafleur stayed on board the lighter *Irvingwood*

4½ days from the time he boarded the vessel and disembarked at Les Escoumins. He brought the small tanker to Chicoutimi and then performed three round trips between the Irving Oil Terminal and the large tanker *Irvingdale*, which was anchored off St. Fulgence (Ex. 735) (vide analysis of pilot J. F. A. Vézina's workload, month of Sept. 1962, Appendix D).

Although most of the ships that call at Chicoutimi harbour are tankers, they are not necessarily regular traders. Some, however, make fairly frequent visits. Pilot Dussault stated that their Masters could become proficient pilots if they put their minds to it, remained on the bridge and paid proper attention. He has found that they are very co-operative but also that none of them has really tried to learn the channels. When they have a pilot aboard they are neither concerned nor worried about leading marks and navigation in the channel.

(d) *Other Harbours*

The harbours of Rimouski, Rivière du Loup and Forestville are of some importance but much less than those discussed above. The traffic to and from Rivière du Loup consists mostly of Irving Oil tankers, one of which employs a pilot regularly. At the outer end of the wharf there is only 14 feet at low water and, therefore, a ship with greater draught has to anchor at low tide. Another problem is that the wharf is exposed to the prevailing winds.

Pilots may be occasionally required to call at small intermediate ports like St. Siméon, Cape Dogs, Cape Salmon, Cap à l'Aigle and St. Jean, Ile d'Orléans. This is particularly true of small tankers or small foreign vessels which call at these ports to load live eels, and of tugs towing barges and scows. On the North Shore there are also many wharves where small vessels may stop.

### (4) Maritime and Pilotage Traffic

Maritime traffic in Quebec District waters consists mainly of:

(a) ocean-going vessels proceeding to or from Quebec, or in transit to or from Montreal and Great Lakes ports *via* the Seaway;

(b) lake vessels proceeding to or from Quebec, or in transit to or from North shore ports such as Port Cartier, Sept-Iles and Baie Comeau, and Lower Gulf ports;

(c) smaller coastal vessels and wooden schooners, the latter progressively being replaced by larger steel-hulled vessels;

(d) a small number of barges and scows used in dredging operations.

Very large ocean-going vessels proceed up to Quebec; the controlling depth at low water in the shallowest part of the North Channel (North Traverse-Cape Gribane area) is 30 feet, but at high tide the navigable depth is at least 45 feet. These large vessels, however, can not proceed to Montreal since, with no tide above Three Rivers, the maximum permissible draught is

limited by the depth of the dredged channel, i.e., 35 feet. The maximum dimensions of the lake vessels are determined by the dimensions of the locks of the Seaway. The modern lakers which trade into the Gulf range up to 730 feet in length and over 75 feet in width.

It is difficult to obtain an accurate picture of the overall traffic since the greater part of it is composed of ships in transit, while D.B.S. statistics are computed on the basis of arrivals at ports. However, pilotage statistics provide a reasonably good picture of the significant traffic, i.e., excluding small vessels, since the relative exemptions to the compulsory payment of pilotage dues have been considerably reduced after being completely withdrawn for large vessels (pp. 20 and 21), and since very few non-exempt vessels dispense with pilots. The largest number of non-exempt ships not employing pilots occurred in 1967, with 170 vessels accounting for 2 per cent of pilotage traffic (for further statistics on non-exempt ships dispensing with pilots, vide p. 209).

The following table shows for the period 1955-1968, on an annual basis, the total number of trips effected by pilots, the average NRT per ship piloted together with their aggregate NRT, and for each figure the per cent increase or decrease over 1955.

| | Aggregate NRT of Vessels Paying Pilotage Dues | | Trips (vessel) with Pilots | | Average NRT of Vessels Piloted | |
|---|---|---|---|---|---|---|
| Year | Tonnage* | % increase or decrease since 1955 | Number† | % increase since 1955 | Tonnage | % increase or decrease since 1955 |
| 1955..... | 18,792,633 | 0.0 | 5,647 | 0.0 | 3,327.9 | 0.0 |
| 1956..... | 21,604,920 | 15.0 | 6,114 | 8.3 | 3,533.7 | 6.2 |
| 1957..... | 18,538,779 | −1.4 | 5,951 | 5.4 | 3,115.2 | −3.6 |
| 1958..... | 19,818,438 | 5.5 | 6,172 | 9.3 | 3,211.0 | −6.5 |
| 1959..... | 27,709,483 | 47.5 | 7,298 | 29.2 | 3,796.9 | 14.1 |
| 1960..... | 29,751,584 | 58.3 | 7,184 | 27.2 | 4,141.4 | 24.4 |
| 1961..... | 31,834,299 | 69.4 | 7,229 | 28.0 | 4,403.7 | 32.3 |
| 1962..... | 33,239,991 | 76.9 | 7,258 | 28.5 | 4,579.8 | 37.6 |
| 1963..... | 35,838,124 | 90.7 | 7,199 | 27.5 | 4,978.2 | 49.6 |
| 1964..... | 41,731,273 | 122.1 | 8,117 | 43.7 | 5,141.2 | 54.5 |
| 1965..... | 45,520,351 | 142.2 | 8,515 | 50.8 | 5,345.9 | 60.6 |
| 1966..... | 49,413,904 | 162.9 | 8,812 | 56.0 | 5,607.6 | 68.5 |
| 1967..... | 49,345,616 | 162.6 | 8,415 | 49.0 | 5,864.0 | 76.2 |
| 1968..... | 49,359,531 | 162.7 | 8,393 | 48.6 | 5,881.0 | 76.7 |

SOURCES: *Exs. 534(a) and 589.
†Table p. 116.

This table shows that pilotage traffic has been constantly on the increase since 1959 both in number and size of ships. The combined effect has resulted in a 162.7 per cent increase over 1955 (of which 157.2% since 1958) in the aggregate tonnage of ships paying pilotage dues.

COMPARATIVE STATISTICS FOR ARRIVALS OF VESSELS IN THE

| | 1959 | | 1960 | | 1961 | | 1962 | |
|---|---|---|---|---|---|---|---|---|
| | No. | Average N.R.T. | No. | Average N.R.T. | No. | Average N.R.T. | No. | Average N.R.T. |
| QUEBEC HARBOUR: | | | | | | | | |
| D.B.S.—Vessels of 250 N.R.T. and over | 2,215 | 2,802.9 | 2,258 | 2,800.0 | 2,169 | 2,990.2 | 1,985 | 3,134.3 |
| D.B.S.—All vessels | 2,700 | 2,325.0 | 2,731 | 2,336.9 | 2,723 | 2,415.8 | 2,523 | 2,497.9 |
| N.H.B.—All vessels | 4,315 | 1,780.3 | 4,452 | 1,740.3 | 4,361 | 1,840.1 | 4,043 | 2,015.8 |
| HA HA BAY (Port Alfred and Bagotville): | | | | | | | | |
| D.B.S.—Vessels of 250 N.R.T. and over | 779 | 2,339.5 | 752 | 2,649.3 | 682 | 2,582.0 | 660 | 2,523.3 |
| D.B.S.—All vessels | 1,134 | 1,634.8 | 1,155 | 1,756.2 | 1,144 | 1,581.5 | 1,133 | 1,511.4 |
| RIMOUSKI: | | | | | | | | |
| D.B.S.—Vessels of 250 N.R.T. and over | 334 | 727.8 | 332 | 742.4 | 279 | 837.7 | 595 | 1,868.7 |
| D.B.S.—All vessels | 774 | 413.7 | 1,163 | 346.3 | 629 | 460.8 | 784 | 1,460.4 |
| FORESTVILLE: | | | | | | | | |
| D.B.S.—Vessels of 250 N.R.T. and over | 381 | 1,548.5 | 492 | 1,318.7 | 468 | 1,429.5 | 224 | 2,136.0 |
| D.B.S.—All vessels | 616 | 1,027.7 | 694 | 1,005.1 | 599 | 1,159.2 | 278 | 1,746.4 |
| CHICOUTIMI: | | | | | | | | |
| D.B.S.—Vessels of 250 N.R.T. and over | 110 | 1,713.7 | 104 | 1,738.7 | 126 | 1,694.5 | 132 | 1,733.6 |
| D.B.S.—All vessels | 185 | 1,058.0 | 159 | 1,172.6 | 180 | 1,216.8 | 171 | 1,363.4 |
| N.H.B.—All vessels | 207 | 1,089.5 | 169 | 1,137.2 | 184 | 1,240.8 | 171 | 1,374.3 |
| RIVIÈRE-DU-LOUP: | | | | | | | | |
| D.B.S.—Vessels of 250 N.R.T. and over | 11 | 1,595.2 | 11 | 1,670.9 | 9 | 1,618.7 | 13 | 2,240.0 |
| D.B.S.—All vessels | 116 | 228.6 | 49 | 438.7 | 75 | 272.6 | 60 | 562.6 |

SOURCES: Exs. 1483, 15 (Parts II and III) and 479.

Most of the increase in the *number of ships* can be attributed to the opening of the St. Lawrence Seaway. The beginning of the traffic increase coincides with the opening of the Seaway, as further confirmed by D.B.S. and N.H.B. arrival statistics (vide table, pp. 150-151) which show from 1959 to 1967 a general decrease in the number of ships calling at the main ports in the District, especially Quebec.

The constant increase in the average size of ships is due to the general trend to larger vessels and, in the District of Quebec, to the gradual disappearance of schooners. This latter factor is especially apparent from the D.B.S. and N.H.B. statistics for Quebec and Chicoutimi (table pp. 150-151). But the most significant single factor is again the Seaway. In the years after it opened, the former small lakers were gradually replaced by larger lake vessels designed to make maximum use of the available space in its much larger locks. During the five years 1959-1963, the number of ships remains fairly stable, but their average size shows a constant, spectacular increase.

MAIN QUEBEC DISTRICT PORTS DURING THE YEARS 1959-1967

| 1963 | | 1964 | | 1965 | | 1966 | | 1967 | | % Increase or Decrease 1959–1967 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Average N.R.T. | No. | Average N.R.T. | No. | Average N.R.T. | No. | Average N.R.T. | No. | Average N.R.T. | No. | Average N.R.T. |
| 1,824 | 3,442.6 | 1,847 | 3,398.9 | 1,882 | 3,402.8 | 1,722 | 3,517.6 | 1,642 | 3,833.9 | −25.9 | 36.8 |
| 2,201 | 2,878.6 | 2,228 | 2,844.1 | 2,164 | 2,921.5 | 2,055 | 2,930.7 | 1,958 | 3,238.7 | −27.5 | 39.3 |
| 3,606 | 2,202.5 | 3,469 | 2,231.8 | 3,151 | 2,498.3 | 2,818 | 2,425.1 | 2,706 | 2,810.1 | −37.3 | 57.8 |
| 650 | 2,546 9 | 677 | 2,934.9 | 680 | 2,816.6 | 737 | 2,897.8 | 676 | 3,103.5 | −13.2 | 32.7 |
| 1,135 | 1,499.5 | 1,090 | 1,860.7 | 1,034 | 1,885.8 | 1,348 | 1,620.3 | 1,162 | 1,841.5 | 2.5 | 12.6 |
| 791 | 2,069.2 | 653 | 2,094.5 | 693 | 2,109.6 | 701 | 2,128.5 | 295 | 1,820.4 | −11.7 | 150.1 |
| 940 | 1,765.2 | 911 | 1,551.0 | 858 | 1,745.6 | 890 | 1,714.1 | 379 | 1,452.2 | −51.0 | 251.0 |
| 292 | 2,103.0 | 294 | 2,178.7 | 279 | 2,169.0 | 274 | 2,185.3 | 228 | 2,209.1 | −40.2 | 42.7 |
| 358 | 1,734.2 | 379 | 1,711.6 | 290 | 2,092.9 | 329 | 1,837.0 | 231 | 2,182.0 | −62.5 | 112.3 |
| 141 | 1,771.5 | 142 | 2,112.5 | 136 | 1,986.5 | 136 | 2,138.5 | 134 | 2,142.8 | 21.8 | 25.0 |
| 164 | 1,540.6 | 157 | 1,921.2 | 160 | 1,715.9 | 194 | 1,560.2 | 145 | 1,989.3 | −21.6 | 88.0 |
| 162 | 1,506.2 | 156 | 1,803.3 | 155 | 1,806.6 | 168 | 1,571.4 | 133 | 2,070.8 | −35.7 | 90.1 |
| 7 | 1,591.6 | 14 | 1,963.5 | 16 | 1,864.8 | 30 | 2,204.3 | 23 | 2,712.1 | 109.1 | 70.0 |
| 52 | 305.7 | 91 | 385.7 | 113 | 355.6 | 130 | 589.7 | 142 | 542.5 | 22.4 | 23.7 |

The table on pp. 150-151 is compiled from D.B.S. statistics of arrivals at the main harbours and ports in the District on a yearly basis for the period 1959-1967 inclusive. The *all vessels* figure refers to all arrivals at the ports excluding, however, such small vessels as fishing vessels, tugs and vessels of less than 15 NRT, and naval vessels. This figure is compared with the special statistics prepared by D.B.S. for this Commission referring to arrivals of vessels of 250 NRT and over, i.e., vessels more likely to take a pilot, in order to show the incidence of small vessels calling at these ports. The next figure shows the average NRT per vessel in each grouping. For the two National Harbours Board ports of Quebec and Chicoutimi, the N.H.B. statistics of arrivals of commercial vessels have been added. The main difference between the *all vessels* D.B.S. figures is that the N.H.B. counts all arrivals (except naval vessels) including fishing and small vessels under 15 NRT. This explains the greater number of arrivals and the smaller average tonnage figures.

The number of ships calling at Quebec has decreased considerably from year to year. The decrease in recent years may be accounted for in part by the discontinuance of the twice daily ferry service that was maintained during the summer months by the Canada Steamship Lines between Montreal, Quebec, Murray Bay, Tadoussac and Port Alfred. By contrast, however, the average size of vessels has substantially increased over the nine-year period. A comparison between D.B.S. and N.H.B. statistics in the table pp. 150-151, and the N.H.B. statistics in the following table clearly shows that the small schooners that formerly visited the harbour of Quebec in large numbers are progressively disappearing and are being replaced by larger vessels, while the aggregate tonnage of both ocean-going vessels and coastal and inland vessels has remained approximately the same over the nine-year period.

| | 1959 | % | 1967 | % |
|---|---|---|---|---|
| *Arrivals:* | | | | |
| Ocean-going vessels | 1,002 | 23.2 | 963 | 35.6 |
| Coastal and inland vessels | 3,313 | 76.8 | 1,743 | 64.4 |
| Total | 4,315 | 100. | 2,706 | 100. |
| *Aggregate NRT* | | | | |
| Ocean-going vessels | 5,229,538 | 68.1 | 5,260,000 | 69.2 |
| Coastal and inland vessels | 2,452,335 | 31.9 | 2,344,000 | 30.8 |
| Total | 7,681,873 | 100. | 7,604,000 | 100. |

Baie des Ha Ha (Ha Ha Bay) is the second harbour in importance in the District. The traffic and the average size of vessels have remained substantially the same throughout the years, despite the discontinuance of the C.S.L. ferry service. There has been a slight increase in the number of small vessels during recent years.

The increase in the number of larger vessels and the average size of vessels calling at Chicoutimi can no doubt be attributed to the deepening of the St. Fulgence Channel from 16 feet to 20 feet.

### *Speed Limit*

Except in the two National Harbours Board harbours, Quebec and Chicoutimi, there is no fixed speed limit throughout the District. The maximum permissible speed under prevailing conditions such as weather conditions, the nature of the channel, the extent of traffic, the particulars of the ship and state of the tide are left to the good judgment of the Master and the pilot. However, despite repeated warnings, excessive speed remains the major single threat to safety of navigation.

Rule 16 of the Regulations for Preventing Collisions at Sea requires that ships proceeding in adverse weather conditions which restrict visibility "go at a moderate speed having careful regard to the existing circumstances and conditions"; and that a ship "hearing, apparently forward of her beam, the fog signal of a vessel the position of which is not ascertained, shall, so far as circumstances of the case admit, stop her engines, and then navigate with caution until danger of collision is over".

In the four of the five major casualties involving pilots which were investigated by a Court of Formal Investigation in recent years (pp. 367 and ff.), it was found that violation of this important rule had been a main contributory factor.

The pilot having the conduct of a ship (subsec. 2(64) C.S.A.), i.e., having "the charge" of her (subsec. 368(c) C.S.A.), must observe these rules. However, since the application of rule 16 does not pertain to local knowledge but to navigation in general, good seamanship and prudence, the Master and the officer of the watch are equally responsible for its application when there is a pilot on board, and are equally to blame when it is violated.

By Notice to Mariners 234, dated April 15, 1966, the Department of Transport brought to the attention of pilots and other mariners the findings of the judgments then rendered and, furthermore, publicity was given on the matter in a Department of Transport press release issued April 20, 1966, which was carried in most newspapers (Ex. 1466(g)). The section of the Notice to Mariners dealing with speed reads as follows:

> "234. St. Lawrence River—Les Escoumins to Montreal—Excessive speed in poor visibility and in confined waters.
>
> The results of Formal Inquiries into several recent serious collisions in the St. Lawrence River show that some ships are proceeding at far more than a moderate rate of speed in poor visibility and also in dredged channels where "bank effect" may make them hard to handle.
>
> Shipmasters and Pilots navigating the St. Lawrence should take particular notice of these judgments which indicate that the rules of good seamanship are being ignored.
>
> Regulations which have the specific intention of promoting safety at sea are being violated by ships which do not slow down to a moderate speed in difficult situations. In particular, attention is drawn to the following: (here rule 16(a) is reproduced)."

Despite these warnings, there are still violations of this basic rule of prudence. In the fifth case, the grounding of S.S. *Exiria,* the court found that the pilot and the Master had violated rule 16 (although it was not a contributory factor to the grounding) in proceeding at full speed ahead from Les Escoumins up the North Channel in fog, neither sounding the fog signal nor making use of shipborne aids to navigation, except a casual use of radar.

The St. Lawrence River Navigation Safety Regulations, Notices to Mariners and Notices to Shipping provide other rules regarding speed in special cases. These are summed up as follows in the Marine Traffic Control pamphlet:

> "Transiting vessels shall regulate their speed as normal prudence would require:—
>
> (a) when approaching curves in dredged channels to lessen bank suction effect;
>
> (b) to avoid excessive "draw off" and consequent follow through wash, which may endanger life or create damage to property;
>
> (c) upon approaching vessels, barges, equipment engaged in dredging, salvage, buoywork, construction, or other circumstances when normal practice of seamen would require same;
>
> (d) to comply with any speed restrictions required by the St. Lawrence Ship Channel Division to permit formation and maintain in position batture and lake ice outside of channel, thereby reducing ice jam blockages."

Despite repeated warnings, many ships do not heed these notices and their excessive speed damages property, impedes work on the River and endangers the lives of the workers. Frequently, it is impossible to identify the offenders but they are prosecuted if this can be done.

There was a great deal of trouble of this nature when the Prince Shoal Tower was being constructed. Notices to Shipping were issued but there were frequent violations and repeated complaints were made to the Pilotage Authority. The Corporation of Pilots co-operated by sending its members four bulletins on the matter requesting them to abide by the request for reduced speed (Ex. 688). In a bulletin dated July 18, 1962, the pilots were requested to adhere more strictly to the Notice to Mariners regarding speed where repairs to wharves and other works were being effected or when meeting a tow, adding that the Pilotage Authority contemplated taking disciplinary measures against the offenders. In a further bulletin dated August 24, 1962, the pilots were informed that a diver, working at Prince Shoal Light, had nearly been killed due to the excessive speed of vessels entering the Saguenay River or passing in the St. Lawrence River and that the Pilotage Authority had reported many complaints had been received of excessive speed there and at St. Joseph de la Rive wharf. Again the pilots were requested to reduce speed to nine knots, even if they were of the opinion that their ship did not create much wash. They were further informed that the Authority had threatened to bring the matter to the attention of the "Inquiry Commission" to show the lack of personal responsibility of some pilots.

On July 17, 1963, the pilots were informed that damage was done to the Prince Shoal Tower and they were again requested to reduce their speed to nine knots in that area, although a pilot might believe his ship did not create a dangerous surge. In a further bulletin dated August 2, 1963, the same request was made with regard to the Prince Shoal pier: divers were working under water around the caisson which was not apparent to passing ships. However, the swell created by these ships had been damaging the steel

sheet piling and had endangered the life of the divers working on the bottom, despite a Notice to Mariners issued May 31, 1963, which requested passing vessels to slow down. The same request was made for the vicinity of the *Tritonica* wreck where divers were also at work.

### (5) Aids to Navigation

While the pilotage service in Canada is independent and operates under independent bodies called Pilotage Authorities, the Department of Transport retains overall responsibility for the safety of navigation and, hence, has a right to surveillance, although it can not interfere directly with pilotage matters (Part I, pp. 402 and ff.).

Charting, maintaining and improving navigable channels and supplying and erecting various aids to navigation were originally included in the responsibilities of the Pilotage Authorities, such as the Quebec Trinity House (p. 30). Soon, however, as the need for better and safer channels developed, considerable construction work had to be done and a network of aids had to be organized and maintained, the cost of which was beyond the means of Pilotage Authorities with their limited sources of revenue. Since it was in the public interest to provide safe access by water, the expenses involved were paid out of public funds and this field became a Government responsibility discharged by one of its departments, now the Department of Transport.

The Department of Transport (in addition to the direct and indirect assistance it provides the various pilotage services) discharges its responsibilities in a number of ways, *inter alia:*

(a) examines and issues Certificates of Competency for Canadian marine officers and inspects and issues Certificates of Seaworthiness for Canadian vessels;

(b) prescribes regulations for safe navigation, amending the rule of the road if necessary to meet local conditions;

(c) maintains harbours, ports and berthing facilities where they are required in the public interest, either directly through its own Harbours and Property Division or indirectly through the National Harbours Board;

(d) maintains and improves various ship channels; certain more important sections are the responsibility of divisions of the Department of Transport, such as the Canals Division and the St. Lawrence Ship Channel Division, or of a separate organization such as the St. Lawrence Seaway Authority;

(e) directs the dredging, marine construction and repairs carried out by the Department of Public Works in areas other than named ship channels;

(f) erects and maintains an elaborate system of aids to navigation, floating, fixed and electronic;

(g) maintains and operates a fleet of ice-breakers, primarily to control flooding and the movement of ice but also to assist vessels endangered by ice;

(h) issues Notices to Shipping and broadcasts information and warnings many of which are later published as Notices to Mariners;

(i) since 1968, operates on the St. Lawrence River from Sept-Iles to Montreal a traffic and weather information service and a ship-to-harbour and ship-to-Pilotage Authority communication service through a reliable V.H.F. network called *Marine Traffic Control* (p. 180);

(j) maintains an elaborate ice operation service providing up-to-the minute ice situations throughout possible routes along the Atlantic Coast, in the Gulf and River St. Lawrence as far as Montreal, and in Hudson Bay, plus ice-breaker assistance in certain circumstances (pp. 200 and ff.).

The Canadian Hydrographic Service of the Department of Energy, Mines and Resources prepares Canadian charts, publishes volumes of Sailing Directions and checks the Notices to Mariners which are issued by the Department of Transport.

In the Quebec District, ship channels are the responsibility of the Ship Channel Division of the Department of Transport. While an extensive programme of improvements is under way in the section between Quebec and Montreal, no capital improvements have been effected east of Quebec since the North Traverse was dredged in 1936 to make the North Channel the main route for shipping, and the final improvement to the channel near Madame Reef in 1947. The Department of Transport did not consider that additional modifications were justified. However, in the light of experience, particularly the series of accidents in 1963-64 and the new problems created by increasing use of the St. Lawrence during winter months, extensive studies are being carried out by the Ship Channel Division for further improvements in the North Channel.

The St. Lawrence Ship Channel Division is responsible for maintaining the charted depth in the channel in the St. Lawrence River and in the St. Fulgence Channel in the Saguenay River, and for keeping them free of obstructions. It has sweeps made at regular intervals and soundings taken, particularly at the opening of navigation but also whenever circumstances require.

The St. Lawrence Ship Channel Division dredges Wolfe's Cove at the request of the National Harbours Board and at its expense because it has the necessary equipment and personnel to make a survey, determine the amount

of material to be removed, do the required dredging and carry out a final sweep. There is considerable sedimentation in that area caused chiefly by tidal currents.

Additional dredging is done by the Department of Public Works at the request of either the port authorities or the Department of Transport in the approach channels and along Government wharves and privately owned wharves, with the proviso that the dredging costs must be paid by the owners.

The responsibility for establishing and maintaining aids to navigation (except radiotelecommunications) throughout the Pilotage District of Quebec lies with the District Marine Agent of the Department of Transport in Quebec City. His jurisdiction covers all navigable waters, including the Saguenay River, within an area extending from the western limits of the former Port of Quebec, i.e., from Portneuf Basin on the north shore and St. Croix on the south shore eastward as far as Natashquan, including Anticosti Island on the north shore, and on the south shore the New Brunswick coast, including Miscou Island as far as Shippegan.

Steady improvements are being made in the efficiency of aids to navigation, thus constantly increasing the safety of navigation on the River. These improvements become more necessary and important with the ever-changing types of vessels which differ greatly from those of ten or twenty years ago. Ships plying the River to-day are larger, speedier and in greater numbers.

Aids to navigation have increased during the course of the years both in number and in efficiency. All three lightships previously in service have disappeared and two have been replaced by fixed pillars which, in the opinion of the District Marine Agent, are more efficient than lightships.

The pilots felt that the North Channel system of aids is satisfactory, but arrangements in the South Channel should be improved. The District Marine Agent confirmed that the latter system of aids was not as elaborate as formerly because the South Channel was no longer the regular route. Some buoys had been removed and automatic lights had replaced watched lights. He believed that automatic lights are more efficient but the pilots did not share his confidence. They stated that, despite the automatic emergency back-up, range lights have occasionally failed; they also submitted that for night navigation essential buoys should be equipped with lights as they were before.

(a) *Proposals for Improving the Ship Channel*

The ship channel below Quebec City has not been improved since 1947 when the Madame Reef section was widened from 500 feet to 1,000 feet, thus providing the whole North Channel-North Traverse route with a minimum width of 1,000 feet.

Three proposals to improve the safety of navigation in the St. Lawrence River section of the District were placed before the Commission: (i) divide the channel into two separate lanes or tracks as was done in the St. Clair River between Lake Huron and Lake Erie; (ii) maintain and improve the South Channel; (iii) dredge the Middle Traverse to connect with the North Channel.

The pilots believe that proposal (i) is practicable below Goose Cape. In general, they already follow this procedure by choosing to pass south of Morin Shoal when downbound and north when upbound. They also had a gentleman's agreement that during periods of low visibility they would sail north of Red Islet upbound and south downbound. It is their opinion that it would be in the interest of safe navigation to make these lanes obligatory for all vessels and to have them included in the charts of the area. As seen earlier (p. 129), the two-lane proposal has been adopted for Red Islet but not Morin Shoal.

However, they believe that in narrow sections (like the Saguenay River, the South Channel and the western part of the North Channel) it is not feasible to have lanes because the channel is narrow and the currents are strong. Under these circumstances it would be dangerous to have parallel courses so close together.

Captain C. A. Bodensieck, then Assistant Operating Manager of Canada Steamship Lines, supported the pilots' point of view based on his personal experience in such places as the Coudres Passage.

In view of the constant and repeated efforts made by Dominion Marine Association to have separate lanes adopted, the pilots decided to give the proposal a trial. For this purpose and also in order to instruct the apprentice pilots, they traced ideal courses for upbound and downbound vessels on charts and experimented with them for a time. These efforts only convinced them further that the proposal, which theoretically appears a sound safety measure, is not practical and, in certain circumstances, may even be dangerous. The physical features of the channel, a ship's manoeuvrability and speed, the prevailing tidal conditions, currents and visibility (not to mention ice) often dictate an alternate course in the interest of safety (Ex. 1538(j)). The proposal was then abandoned.

If the South Channel were restored and maintained, the pilots do not see why it should not be used extensively since there is no difference in distance or in the influence of the currents on the length of trips. It would be an advantage—indeed a safety measure—if some traffic were diverted to it and it would be a definite advantage if both North and South Channels were made one-way routes.

Up to 1964, there had been no official request to re-open the South Channel. Mr. H. L. Land informed the Commission that it would require a

large amount of money for both capital and maintenance dredging to adapt it to modern traffic. It was estimated in 1963 that it would cost around six million dollars, at $1 per cubic yard, to dredge it back to 30 feet.

In the Middle Traverse south of Ile aux Coudres, the proposed work would consist of opening a new channel which would allow vessels using the North Channel to by-pass Ile aux Coudres to the south. Furthermore, the Middle Traverse so modified and Coudres Passage could be used as two one-way lanes. There would also be an improvement as far as ice is concerned because the section by-passed between Goose Cape and Cap Maillard is the bottleneck for ice in the North Channel.

This could prove to be a very costly proposal for capital and maintenance dredging. The Ship Channel Branch of the Department of Transport has included it in its hydraulic study of the River, the purpose of which is to make the best use of available water and improve conditions in the River, bearing in mind ice conditions during the winter months.

In his report on the circumstances of the collision between S.S. *Leecliffe Hall* and M.V. *Apollonia,* Mr. Justice Smith made the following comment (Ex. 1457):

> "The evidence presented in the course of this inquiry, and the one conducted in connection with the sinking of the *Tritonica* in 1963, as well as the advice of the Assessors, convince me that the dredging of a channel south of Île aux Coudres Passage to accommodate downbound traffic exclusively would do much to lessen, if not eliminate, presently existant hazards to navigation in this area and it is hoped that action in this directon will not be long delayed."

Pilot Dussault said that he would prefer to see the South Channel improved rather than the proposed improvements in the Middle Traverse because these would do nothing to remedy the existing situation in the narrow part of the western section, i.e., Cap Gribane to the west end of the North Traverse, while the South Channel would provide a longer lane for downbound traffic.

On May 8, 1969 (Ex. 1538(g)), the Department of Transport informed the Commission that for the time being the official stand regarding the project of reactivating the South Channel by dredging it to a normal depth was discontinued indefinitely, its limiting depth remaining at 17 feet L.N.T. For the time being, all efforts are concentrated on improving the 16-nautical mile stretch between Cap Gribane and St. Jean, Orleans Island (the western end of the North Traverse) which contains the only dredged channel along the North Channel and whose depth constitutes the controlling depth of the North Channel. Following a regular maintenance programme, 75 per cent of the Cap Gribane Reach and 30 per cent of the North Traverse Reach were deepened to 35 feet in 1968. It is expected that the remainder of the Cap Gribane Reach will be dredged to the same depth in 1969. When this maintenance work is completed, approximately nine nautical miles of the dredged portion of the North Channel will remain for the time being at a depth of 30 feet L.N.T.

A feasibility study is now being made relative to further deepening in the North Channel. An interim report is expected in 1969 which will relate to depths of at least 45 feet L.N.T. Furthermore, an extensive sounding programme is being carried out in the North Traverse with a view to obtaining more pertinent information on the silting problem.

As mentioned earlier, the St. Fulgence Channel has been dredged to a depth of 20 feet L.N.T.

(b) *Lighthouses*

Every important lighthouse has a keeper. If it is a very important light, the keeper resides in the lighthouse; otherwise, he lives in the immediate vicinity. These keepers are trained to effect minor urgent repairs. In addition to the White Island and Prince Shoal Towers (p. 164), there are four lighthouses between Portneuf and Les Escoumins where the keeper lives in the lighthouse.

The trend, however, is towards automation because the equipment now available is very reliable, much superior to what was formerly available. The automatic light is equipped with an emergency system which is automatically switched on if the light becomes defective, as made apparent by a decrease in intensity. Such an occurrence is then reported by an observer, who might be a farmer or a fisherman and for whom it is only a part-time job to note occasionally whether the light is functioning or not.

(c) *Range Lights*

Most of the channels in the Quebec Pilotage District are provided with range lights or steering lights. Only about 25 per cent of the total distance is not so covered, generally because the navigable waters in those sections are so wide that there is no channel properly speaking and the clearing marks are sufficient for safe navigation. There are no range lights in other areas because it is impossible to install them, e.g., the only indication for ships eastbound in Coudres Passage is Buoy 103. Westbound, a controversial substitute device was tried. Morin Bank is indicated by one buoy only since the River at that point is considered wide enough to enable Masters to find clearing marks on both shores.

All range lights are now painted orange which makes them readily distinguishable from any other colour and also clearly visible in winter against the white background.

During the winter season, some fixed lights are extinguished and not relit until midnight April 1, and the Department dispenses with keepers for many of the watched lights because of the difficulties entailed in providing a resident keeper with the necessary supplies. The lights are then put on an automatic system.

If they can be seen, range lights are very reliable aids to navigation because they are fixed aids. In an effort to improve their efficiency these

lights have been changed to a more modern type with the arc of visibility reduced from eight degrees to six degrees. Before deciding on the change, a trial was made of two sets and, when good results were obtained, it was decided to change all the other sets. The new lights are more easily seen in poor visibility along the line where they are used as range lights. It was not felt necessary to consult the pilots before effecting the change because their characteristics as range lights were not altered. In the Quebec Pilotage District there were no complaints about their efficiency or the quality of the light but some objections were voiced in the Montreal area. The District Marine Agent was not aware that some range lights were being used merely as landmarks. During the period when there are no floating aids the pilots use them as points of reference and they complained that this can no longer be done to the same extent as before due to the diminution of the arc of light. This has since been remedied.

The Cap de la Baie light has proved contentious (Ex. 1456(z)). The Dominion Marine Association insisted upon the installation of a set of range lights at Cap de la Baie, i.e., at the west end of Coudres Passage. The technical problem was that at that location it was impossible to install a normal set of range lights because the steep mountain immediately in the background does not allow the necessary horizontal distance between the two lights. An experiment was tried with a three-sector light which showed a white beam to a vessel in the centre of the channel. A green light meant that the vessel was off the centre line to starboard and a red light off the centre line to port.

A Notice to Shipping dated August 17, 1962, stated that this light had been installed for experimental purposes. On January 23, 1963, the pilots wrote to the Marine Agent to report on their experience and expressed their dissatisfaction. On April 5, the Dominion Marine Association strongly maintained the contrary.

The pilots voiced two complaints: (i) the light was too low over the water and in poor visibility was liable to be mistaken for the side navigation lights of an oncoming vessel; (ii) it was more a menace to navigation than an aid in the curve around Coudres Island because the centre beam of a sector light can not be as narrow as the line of sight when range lights are lined up and, therefore, vessels that use it while trying to keep to the centre of the light are either forced off their course by the violent cross-currents in the Coudres Passage or are obliged to proceed at an angle with the channel centre line, with the result that at night they show side lights that do not indicate their true course.

The pilots felt that this light would prove specially dangerous to downbound ships on an ebb tide when the current is at its strongest and crisscrosses the channel. These cross-currents have to be counteracted before they

are met—this, the pilots say, can not be done when a vessel is being steered on one light alone. With normal range lights the alignment of the two lights readily shows when a ship is drifting off course, while with a sector light it takes some appreciable time to get off the beam and by that time a ship in a narrow channel may be in a precarious situation, especially at night. There is more leeway with a directional light than with range lights. Furthermore, the strong currents which change direction in the bend of Prairie Shoal make it impossible, particularly for small vessels of low power, to remain on the directional beam with the result that they are carried into the path of oncoming traffic.

After the pilots had studied the question at their January general meeting they merely recommended that the light be removed.

On April 23, 1963, the District Marine Agent answered that the same problem had been studied by the Dominion Marine Association and that their Masters had come to opposite conclusions, i.e., that they believed the light was useful. He added that, in the circumstances, the Department intended to maintain it after making some improvements, i.e., enlarging the beam and relocating the device higher up the slope so that it could not be confused with the lights of another ship.

The original sector light was removed and replaced by a tricoloured light relocated much higher than the previous one. The pilots agreed that the danger of confusion with navigation lights of vessels has been eliminated, but they submitted that the other danger remained. Finally, the Cap de la Baie light was discontinued on a temporary basis by a Notice to Mariners issued April 1967, and permanently by a Notice to Mariners issued in January 1968.

(d) *Floating Aids to Navigation*

Throughout the District there are numerous buoys and other floating devices to mark shoals and reefs and to indicate the ship channel in restricted areas such as the North Traverse and the dredged St. Fulgence Channel. There are many kinds of buoys—some in special areas carrying lights and others at strategic points equipped with radar reflectors.

All floating aids are not available throughout the year because they are removed before the ice forms at the end of November or beginning of December, as determined each year by the Marine Agent. Since all buoys can not be removed at once, the more important ones are left in position as long as possible. Some are replaced by winter buoys specially designed to avoid damage by ice floes.

These are placed in the most strategic positions as determined by the Marine Agent after receiving the recommendations of Masters, agents, ship-

ping interests and pilots. He holds detailed meetings with the Pilots' Committee, usually at the beginning of each year, to establish which buoys are most needed and should be kept in place up to the last possible moment, as well as those that should be replaced by winter buoys. There was no such meeting in 1962 and the District Marine Agent assumes that it was because the pilots were satisfied with the system. Most of the recommendations he has received have been granted.

The determining factor for repositioning buoys in the spring is the date when the ice floes disappear. This may vary 10 to 15 days from year to year, but is usually between April 10 and April 15, and sometimes even later.

The reliability of buoys as aids to navigation is limited. A Master should not consider them an infallible guide because they are more apt than any other aid to be displaced. They are also more vulnerable. Their efficiency is impaired because they are tossed about by the waves and in the fall they may be covered with ice. Buoys are also occasionally damaged by vessels. An accident of this kind is not very frequent—not more than once or twice a year—but when it occurs it is very seldom reported and is noticed only when a buoy with the marks of impact is found.

Buoys may be displaced either because of a sudden flow of water, e.g., spring tides combined with strong east winds, or because of mechanical failure, e.g., the anchor chain breaks. It is very difficult to keep buoys in place in the vicinity of Red Islet. If one moves even a few feet, the depth is increased to such an extent that the anchor loses its hold and consequently the buoy drifts away. There are also strong currents during high spring tides in the Portneuf section above Quebec which cause buoys to drift away, especially at the beginning of the navigation season when they have just been put in position. Floating *débris* also causes buoys to drift away. Under these abnormal conditions several buoys are liable to drift loose at the same time.

(e) *Direction-Finding*

There are two radio-beacons at Red Islet and Bicquette Island (Ex. 1456(u)). The District Marine Agent stated that he had not received any request for the installation of radio-beacons elsewhere. The advisability of placing one in Coudres Passage was once raised but no official request was ever made. At least two serious shipping casualties could have been avoided—the grounding of S.S. *John E. F. Misener* on Lark Reef in 1959 (p. 367), and of S.S. *Exiria* in 1968 (p. 376), if the pilots had used the Red Islet radio-beacon.

The Commission is of the opinion that radio-beacons should be installed in the vicinity of Les Escoumins boarding station, thus enabling the pilots to establish accurately the position of upbound vessels (p. 417).

(f) *Decca System*[1]

The Quebec Pilotage District is not provided with a Decca network but Chain No. 9 is in operation throughout the open waters of the Gulf covering the area from Pointe des Monts to the west coast of Newfoundland and to the coast of New Brunswick. All ice-breakers are equipped with Decca equipment which is used for plotting positions and courses for winter navigation in the Gulf.

About 1957, Computing Devices of Canada set up a demonstration Decca chain in order to promote their product. The main station was at St. Raymond, upstream from Quebec City, and its three slave stations were elsewhere in the District. Although this network did not prove to be efficient in that setting, the Department of Transport was convinced that the system had possibilities. The equipment was purchased and re-established with the main station on Anticosti Island to provide coverage for the whole Gulf.

After testing the system during its trial period the pilots agreed that it did not work very well in the Quebec District, but Pilot Dussault was of the opinion that with some adjustments to the installation and with a skilled operator in charge it would be sufficiently accurate for use in channels as narrow as half a mile. He stated that during a practice run the system had proved to be even more accurate than that.

(g) *Removal of Lightships*

At one time there were three lightships in the Saguenay estuary: (i) White Island lightship marking the middle ground west of Red Islet composed of Hare Island, its reefs and banks; (ii) Red Islet lightship east of Red Islet, some distance off Red Islet Bank; and (iii) Prince Shoal lightship, off Prince Shoal, marking the western limit of the entrance channel to the Saguenay River. These special aids to navigation were necessary on account of the particular difficulties created by the strong, changing currents continually prevailing there. They were better than shore-based aids because in poor visibility it is easier to be guided by a light vessel that can be approached in deep water. At these locations, they were preferable to buoys because buoys are often missed by radar in rough weather while a lightship provides an adequate target.

The White Island and Prince Shoal lightships have been replaced by pillars erected near previous locations of the lightships, but closer to the shore in shallower water to allow their construction. The Red Islet lightship was replaced by a buoy in about the same location as the lightship.

The pilots protested against this last change by telegram and by letter. However, the Department of Transport held firm to its decision but agreed

[1] The Decca Navigator System is a medium range hyperbolic radio aid to navigation which enables ships fitted with special receiving equipment to fix their position continuously to a high degree of accuracy.

to mark the former location of the Red Islet lightship with a red gas buoy equipped with radar reflectors (Ex. 688, Pilots' Corporation Bulletin, April 24, 1961). On April 26, 1961, the Minister of Transport replied to the Corporation of Pilots explaining that the removal of this lightship had been decided when, after many years, the Department had succeeded in diverting traffic from the South Channel to the North Channel which was opened in 1934; that the North Channel had been improved in 1955 by the installation of White Island lighthouse and in 1958 by Cap Bon Désir lighthouse; that the pilot station had been moved to Les Escoumins; and that the Red Islet lightship, in the Minister's opinion, was no longer necessary, since sufficient navigational aids remained for those vessels which might wish to proceed by the South Channel. On September 10, 1963, the Corporation of Pilots wrote to the Regional Superintendent pointing out that the situation was no longer as described in the Minister's letter, that there was regular traffic south of Red Islet, especially in fog, and therefore, requested that the Red Islet lightship be returned to her station (Ex. 666). However, the Department has not reversed its stand.

Everyone seems to be pleased with the replacement of the Prince Shoal light vessel by a fixed tower. This fixed aid is more reliable than the lightship because, although the lightship was never found out of position, it swung on its anchor under the influence of tidal currents and winds. Consequently, the fog horn did not blow in a constant direction and vessels occasionally came too close to the lightship before they heard the horn. The tower also has the advantage of being available throughout the year while the lightship could not be maintained on station during the winter season. The Prince Shoal pier is a man-made island. A caisson was constructed in a dry dock and towed to its site and sunk there. Above the caisson a tower was erected supporting a light whose lantern is the most powerful in North America: in fog it is 32,000,000 candlepower and in clear weather 300,000 candlepower. In light fog the light should be visible two miles away. It is equipped with three fog horns pointing in three different directions, one southeast, i.e., in the general direction of the St. Lawrence River, one westward and the third northeast towards the Saguenay with an audibility range of four or five miles depending on the weather. A fourth horn has since been added (Ex. 1538(g)).

The pilots pointed out that fog horns are very capricious aids which are affected by weather and wind. They can not be kept in operation during winter for technical reasons because the cold prevents them from functioning normally. Sometimes they can be heard miles away, while at the same moment they can not be heard by ships close to them.

It was not planned to install a radio beacon on Prince Shoal light, although this will be done if it becomes necessary and provision has been made in the design for its installation. A radio beacon of this type would be a large beacon to enable ships to determine their position on the River. At

present, there is, as noted above, one beacon located on Red Islet. Two beacons so close together would be useless for cross-bearings because the angle would be too small to be of any help at any distance.

The light is maintained continuously by a four-man watch. The pier has a helicopter platform and the Department of Transport is planning to have a second helicopter platform erected on White Island pier to answer emergency calls.

At the time of the hearing in Ottawa on September 15, 1964, it was reported that the Prince Shoal pier was in operation and was quite effective. Some dissatisfaction was voiced, however, with the fog horns. This has since been corrected.

(h) *Aids to Navigation on the Saguenay River*

Because the Saguenay is so deep, the only buoys are a cluster in the estuary to mark the entrance to the river, one buoy marking a bank at the southern entrance to Ha Ha Bay, and a series along the St. Fulgence dredged channel into Chicoutimi. There are land-based lights and range lights, viz., the Pointe Noire leading lights at the entrance and seven ranges indicating the seven courses in the St. Fulgence Channel. The most important buoys are fitted with radar reflectors and there is a fog horn at Pointe Noire.

Since electricity transmission lines are not available all along the Saguenay, most lights must be operated by batteries or by gas with a consequent lessening of effectiveness. The Commission was informed that a lantern with an acrylic lens which provided better optical results had been developed and that it was planned to install this type in the near future. At the opening of navigation in 1963 and 1964, new lenses were installed in ten lights on the Saguenay.

All lights, except those at Pointe Noire, are unwatched but all range lights are fitted with an emergency device and there is a caretaker to oversee the lights from St. Fulgence to Chicoutimi. Because these range lights are in a dredged channel, they are considered more important to shipping than the light beacons on the main Saguenay where there are no shoals.

Defective lights are normally reported to the Department of Transport through the Port Authority at Chicoutimi.

At Pointe Noire two lightkeepers look after the range lights and the fog horn. They live in the lighthouse except during the winter when they go home across the river to Tadoussac. Between them they maintain a 24-hour watch during the whole season of navigation on the Saguenay.

The system of aids seems to be adequate since the Marine Agent has received no recent requests for improvements or for an increase in their number. Despite this, there have been improvements. Apart from replacing the lightship with the tower at Prince Shoal, the Pointe Noire lights were improved, their candle power was increased and their colour changed to

green. Masters reported they were adequate and satisfactory. In accordance with the new policy the day markers were painted orange flame colour which is more visible under any conditions.

As indicated before, the series of buoys at the entrance to the Saguenay River is more liable to be removed or displaced because the tides and currents there are so powerful. Buoy 35B, situated off the northeast ledge of Red Islet, is particularly likely to be displaced since it is directly in line with the outflow from the river.

The buoys are removed when the ice forms in the fall, or earlier if the Chicoutimi Port Manager sends word that the last ship is out. When the river is frozen in late November or mid-December it is difficult and dangerous to remove the buoys. One year they were left until later in the year but five which broke away from their mooring were lost. A displaced buoy is a hazard to navigation because it is out of position. It takes very little ice to displace a buoy and, for this reason, a careful check is kept of the water temperature. The buoys are not removed until the temperature drops to approximately 35-33 degrees but some ships can still proceed to Chicoutimi because the range lights and other land-based aids remain in service.

Apart from the buoy at the entrance to Ha Ha Bay, only wharf lights are provided. No leading lights or range lights are necessary since there is no dredged channel, the bay is quite large and the water is deep.

The Quebec Marine Agency has no responsibility for aids on private wharves, the policy being that these should be provided, maintained and operated by the owners. The Department, however, supplies technical advice about the installation and procurement of aids. Before they are installed, permission has to be obtained from the Department of Transport, which will then include them in the official list of lights and will have them shown on the charts of the area.

In the St. Fulgence dredged channel there are also mooring buoys installed at the edge of the channel for tankers. They can not be sited farther away from the channel unless a considerable amount is spent dredging a larger basin.

(i) *Efficiency of Aids to Navigation*

Throughout the Quebec Marine Agency, which extends beyond the Pilotage District to Natashquan and Shippegan, there were over a thousand different aids in 1962. That year there was an average of 14 failures reported each month, most of which concerned floating aids. Repairs took from a few hours to five or six days depending on location and priority and the availability of transportation and facilities. In the Quebec Agency some 15 Department of Transport vessels are concerned with maintaining aids to navigation, but this is not their exclusive duty.

If a failure can not be repaired quickly, ships are informed by a Notice to Shipping broadcast by various coastal stations and over the VHF network of the Marine Traffic Control System. In the event that repairs take longer than a few days, a Notice to Mariners is sent out. When there is some urgency the pilotage office is informed by telephone in order to disseminate information more quickly, e.g., a buoy is so far out of position that it could cause an accident. The radio broadcast is repeated at frequent intervals until repairs are completed or the Notice to Mariners has reached those concerned. However, if repairs can be made within a few hours, no Notice is issued.

Few complaints have been received about winter buoys. However, these buoys are often not visible because they are constructed in such a way that they submerge when an ice floe drifts over them. There are complaints when buoys are displaced during the rest of the year but these are infrequent in the Quebec District. The Department of Transport vessels have developed a system to verify the position of all buoys they pass at any time.

Complaints and requests are received throughout the year—some asking for additional aids, others for improvements to existing aids but very few for the relocation of a buoy because the siting of buoys is in most cases the result of many years' experience.

Complaints and requests are made in various ways: locally to the District Marine Agent, directly to the Department of Transport or directly to the Minister by groups such as the Organization of Owners of Small Vessels on the St. Lawrence, the Pilots' Corporation and the Dominion Marine Association. Requests for new aids or improvements are studied locally by the District Agent with his officials. All the data are gathered so as to make a sound recommendation to the Department, normally in writing but by telephone if there is any urgency. The District Marine Agent believes that it is good policy to hold periodic meetings with the pilots and shipping interests at the District level to discuss improvements and modifications to navigational aids so that the pros and cons can be fully discussed.

Captain G. E. Gaudreau, District Marine Agent, stated that, while buoys are very useful, they are less important than fixed marks such as range lights and should be used in conjunction with other aids. Ranges are absolutely necessary, buoys only relatively so. In winter when there are very few floating aids the pilots take ships through without much difficulty. He agreed that traffic is very light during the winter season and other vessels are seldom met, but felt that, if buoys are in position during the summer to help the navigator, he should be able to ascertain whether they are in position or not. In narrow channels, however, buoys have a greater degree of importance.

There has never been an occasion when the ship channel was completely blocked. When sinkings or groundings did occur the vessels involved became partial obstructions and were indicated by markers. Passing vessels were required to reduce speed and detour, e.g., the *Tritonica* wreck.

There have been only two occasions when it was necessary to halt navigation for a short period. In 1960, traffic between Cap Rouge and the Quebec Bridge was stopped for two hours until a caisson that had gone adrift was blown up. On October 10, 1961, shipping in the Quebec area was held up briefly until the harbour authorities investigated the stranding of the tanker *Vibex* and the resultant loss of a large quantity of inflammable liquid.

*COMMENTS*

Since 1965, the following improvements have been made to aids to navigation (Ex. 1538(g)):

*South Channel*

(i) Brandypot Island—new light installed with intensity increased to 10,000 candle power;
(ii) Hare Island West End—new light established;
(iii) Notre Dame du Portage—new light established;
(iv) Bellechasse Island—lights improved.

*North Channel*

(i) Brûlé Bank—completely new towers and structures erected for leading lights;
(ii) Cap aux Corbeaux—range lights fitted with additional lights to increase visibility eastward;
(iii) St. Michel de Bellechasse—leading lights for the North Traverse improved.

*Eastern Section of the District*

(i) Prince Shoal Pier—additional fog horn established;
(ii) Red Islet—light improved;
(iii) Tadoussac—operation of fog signal assumed by D.O.T.

*Saguenay River*

(i) Pointe Noire—additional light fitted to the range light to increase arc of visibility.

(j) *Centre Line*

Some charts of the River contain a dotted line marked "centre line of ship channel" which does not correspond to the middle of the channel but is the centre line of the normal traffic lane (C.H.S. Chart 1321, Ex. 442).

As far as the harbour of Quebec is concerned, this line lies well to the north side of the channel and at one or two points is as close as one or two cables to the shore; while not the actual centre of the channel it gives vessels as long a reach as possible (except in the bends where it runs in a curved line) so that they do not have to change course to follow the contour of the land. The centre line enables a ship, particularly a large ship, to maintain a straight course for as long as possible and may take her a considerable distance from the actual centre of the River.

The existence of this dotted line on charts creates a legal problem because there are no specific regulations covering either navigation in the harbour of Quebec or the centre line. Therefore, the pilots are of the opinion that the rule of the road should prevail.

The Canadian Hydrographic Service, Surveys and Mapping Branch, Department of Mines and Technical Surveys (now Department of Energy, Mines and Resources) took the responsibility for including this line in their charts. In the pilots' opinion, the centre line is justified from a safety point of view because it gives a good indication of what courses vessels should follow. Pilot Dussault pointed out that a large ship is much safer when steering a straight course, especially at night, and has less difficulty meeting and passing other vessels. Alterations of course require more manoeuvring, more space and closer attention by those conning the ship, especially when negotiating bends. In addition, an alteration of course makes it more difficult to keep to the starboard side of the channel. For all these reasons, a straight course is both easier and safer.

However, the pilots have queried the advisability of the centre line where the River curves, particularly in the bend between Lauzon and Beauport shoal. Pilot Dussault said he did not believe an upbound vessel could steer a course close to the centre line and at the same time obey the rule of the road. He felt that in this section the line creates confusion because vessels should keep as close as possible to the starboard side of the channel where the River bends, and not merely to the starboard side of the centre line since the latter course might endanger other ships. As far as he knew, the pilots had made no representations to the Pilotage Authority on this subject.

(k) *Notices to Shipping and Notices to Mariners*

District Marine Agents publish information and warnings of immediate local interest in *Notices to Shipping* after first sending out broadcasts through Department of Transport radio stations.

The Department of Transport disseminates data, information and recommendations concerning the safety of navigation in Canadian waters and waterways in *Notices to Mariners*. Usually the information in these Notices has already been broadcast or published in a Notice to Shipping, but they also contain official corrections to charts and publications.

The material is appraised and verified prior to publication to ensure that the information is valid and worth publishing. It is also checked by the Canadian Hydrographic Service for its effect on their charts and publications. About three weeks elapse between the receipt of information and its publication, provided there is no error to correct.

The mailing list for Notices to Mariners (between 4100 and 4500 addresses) is amended weekly. It comprises individuals, companies and all

those who have requested a copy. In addition, these Notices are automatically sent to pilotage offices, customhouses, shipping masters' offices, etc. The service is without charge.

*COMMENTS*

Canadian Notices to Mariners have not been especially studied to establish their efficacy as media of information on safety of navigation, but judging by those that the Commission has found it necessary to refer to and analyze it would appear that this valuable instrument could easily be improved upon.

In some cases, the Notice lacks the necessary details, e.g., No. 30, 1969 Annual Edition, bearing the general title *General Information on Pilotage Service*. This title is misleading in that the scanty information provided is incomplete, at times in conflict with Pilotage By-law requirements, concerns only Districts where the Minister is the Pilotage Authority and does not convey any of the ETA requirements in the other Districts. For further comments on its adequacy for the District of Quebec, see pp. 185 and 186 and 413 and ff.

It would appear that the Notices are not compiled with the aim of being fully informative but deal with a subject piecemeal without the cross-references or coordination which would enable the reader to obtain full information quickly. Each branch and office in the Department apparently draws up Notices on subjects in which it is interested without any attempt at internal coordination, and also fails to warn the reader that the matter is only partially covered. One such example is No. 25, 1969 Annual Edition, concerning the *Marine Traffic Control System*. In this regard, reference is made to the comments on pp. 185-190.

(l) *Cost of Aids to Navigation*

The cost of broadcasting and publishing these Notices and of erecting, replacing and maintaining aids to navigation is borne by the public through the Department of Transport. There is no charge to shipping for their use as was the practice for some time before Confederation. Furthermore, there is no charge to vessels when they obtain the assistance of ice-breakers nor for the information and guidance service provided through Marine Traffic Control and the Ice Operation Service described later.

The only charges the Department makes to shipping are for the use of their wharves and cranes. Apart from the services provided by the National Harbours Board in Quebec, the only port in the Quebec Agency with a crane is Rimouski. Except for the wharves belonging to the National Harbours Board at Quebec and Chicoutimi, all other publicly-owned wharves in the Quebec Agency are under the jurisdiction of the Department of Transport.

(m) *Racon and Ramark*

*Racon* (the abbreviation for Radar Responder Beacon) is a radar beacon which gives positive identification of objects which are of particular importance in navigation. The manual *The Use of Radar at Sea* states:

> "The Racon can be considered as an electronic reflector which will return to the Radar set a signal which is not only magnified but has unique characteristics so that its appearance on the radar screen will readily identify the object from which it comes. In principle, the racon is extremely simple. The pulse of radio energy which leaves the radar aerial is received by the racon aerial and fed to the receiver, where it is amplified and passed to the transmitter which re-radiates it to the radar set."

Such a device is particularly useful when and where there are many targets on the screen at the same time, e.g., at the entrance to the Saguenay River in fog when many ships may be moving or at anchor.

*Ramark* (the abbreviation for Radar Marker) is an active beacon which gives a continuous coded signal at radar frequency. Masters of ships provided with code lists can obtain a bearing on a positively identified object.

The pilots were impressed by the possibilities of these electronic devices as aids to navigation, and on May 24, 1960, they recommended to the District Marine Agent that a Racon system be installed on board the Prince Shoal and Red Islet lightships at the entrance to the Saguenay River.

The District Marine Agent informed the Commission that, as far as he knew, the advisability of installing Ramark or Racon equipment at the entrance to the Saguenay had not yet been considered. At first sight, he believed this type of device might be useful because it would permit identification long in advance of the three main points close to the entrance, Prince Shoal pier, Red Islet and White Island pier.

So far (1970) neither device has been installed anywhere in Canada (Ex. 1461(a)).

(n) *Navigational Instruments in Ships*

Vessels nowadays carry an ever-growing number of instruments whose purpose is to facilitate navigation, especially in adverse conditions. Some of these instruments are a complete aid in themselves, such as the gyro compass, the echo sounding device and radar; others can be used only in conjunction with land-based aids, e.g., the Decca and Loran systems, the direction finder, telecommunication equipment, WT and RT with HF and VHF frequencies.

Most vessels now carry a gyro compass, but there is still the occasional older vessel fitted with a magnetic compass only. There is also the ever present possibility that the gyro compass will suffer a mechanical failure. Pilots, therefore, must be very familiar with the use of the magnetic compass and be able to take into account the local variation, as well as to allow for the compass deviation and total error. It is also essential that when they embark they ascertain whether the gyro compass is functioning accurately.

The pilots seldom use the echo sounding machine because it gives only the depth under keel while the bottom features change abruptly. When navigating the shallow waters of dredged channels, the information provided is of little value except when they wish to verify sounding data for their own information.

Radar is the eye of the ship when physical visibility is reduced or nil. However, it is a limited substitute for the human eye and must be used with extreme caution and by qualified persons. The advent of radar has not affected Rule 16 of the Collisions Regulations (p. 153 and pp. 379 and ff.). Ships must proceed at reduced speed in limited visibility and make the prescribed fog signal.

Most vessels are now fitted with radar but before using it pilots should be well acquainted with the operation and interpretation of the equipment carried. This should be part of their general training. They should also be able to identify land features and aids to navigation as they show up on a radar screen, and it should be part of their local knowledge to be aware of the interference likely to be met at particular places. It is a sound practice and no more than normally good seamanship to switch on radar before low visibility is encountered.

It was stated that in confined waters radar should not be used as the sole means of navigation at night when visibility is normal. Even on very dark nights an experienced mariner can easily be guided by marks and lights and by his local knowledge. Radar can then be used as a means of verification.

Pilot Dussault stated that pilots should acquaint themselves with the particular shape and form of the land features of their District as they show up on the radar screen. For instance, the North Traverse is difficult to navigate by radar because the islands are not parallel to the channel and the beaches on the north side are difficult to identify. In that particular sector radar has to be watched very carefully to determine whether a vessel is in the centre, or near the centre, of the channel. Faulty interpretation of such radar information was one of the contributing factors to the collision between M.V. *Lawrencecliffe Hall* and S.S. *Sunek* in the North Traverse on November 16, 1965 (p. 373).

At the entrance to the Saguenay River there is often radar interference caused by very strong tide rips which produce many echoes, especially at the change of the tide. At low tide there are also a great number of echoes caused by boulders and ridges for nearly five miles around. The utmost caution must be exercised not to miss the echo of a small vessel, i.e., to distinguish a moving echo from steady echoes.

Pilots should also keep their general knowledge up to date. Pilot Dussault observed that it is a fact that some Masters, pilots and others hesitate to

use the true motion radar because they are not familiar with it. This is a complete departure from the relative motion radar where the central point of the screen is the ship, while with the true motion instrument the ship is a moving object on a fixed chart. They hesitate to use it because they have not as yet had enough practice. Both theoretical and practical studies are required.

Pilot Dussault had courses in radar when it was first introduced around 1952-53. Since then he has not attended any organized courses but he has studied by himself. He is aware that radar sets are continually improving and he agreed that it would be advisable for the pilots to have refresher courses on radar operations, e.g., during the wintertime. These courses should cover not only operations but perhaps also maintenance to a small degree, e.g., how to operate a set in order to improve reception, or how to detect whether the head marker is off centre. The latter is one of the points that a pilot should check and should know how to adjust. In his opinion, the pilots should become well acquainted with new types of radar and all other improvements to navigational instruments as soon as they appear. For the Commission's recommendation on the matter, reference is made to Part I, Gen. Rec. No. 31.

The Courts of Formal Investigation which dealt with the five major casualties that occurred in the Quebec District since 1959 (pp. 367 and ff.) indicate that in all cases the faulty use of radar by pilots as well as ship's officers was a contributing factor, that too much reliance was put on radar and that ships were driven at full speed as if radar provided full visibility. It was found that the pilots failed to make correct and intelligent use of the information provided by radar due to their lack of knowledge of, and training in, its use. The Pilotage Authority, however, has no power under the present regulations to compel licensed pilots to acquire further knowledge and to undergo training (vide Part I, pp. 350 and ff.).

The Pilotage Authorities are trying to persuade the pilots to undergo training in radar on a voluntary basis. Winter courses are now available at the Quebec Marine Institute but attendance is voluntary (p. 251). In a letter dated May 13, 1966 (Ex. 1457) the Chief of the Nautical and Pilotage Division of the Department of Transport reported:

> "Pilots have been urged to take advantage of existing courses in radar and, in the case of our salaried pilots on the Great Lakes, they have all taken the course in Toronto with all expenses paid. This could not be arranged for the licensed pilots of the Montreal and Quebec Districts, who were nevertheless urged to take courses that were available. Our latest information is that about 52 of the Quebec District pilots have taken courses, although not all were successful in passing the examination."

Since 1960, the Department of Transport has issued Notices to Mariners which drew the attention of the pilots to the recommendations of the conference on safety of life at sea concerning the use of radar in avoiding

collisions at sea. These recommendations were adopted by the International Conference at its 1960 meeting, but the concurrence of all the member countries was required before they could be put into force. In the meantime, however, the Department of Transport published them for information in 1960 in Notice to Mariners No. 216, which was reproduced in the first issue of Notices each year thereafter (e.g., Notice No. 18 of 1963). On August 25, 1965, when *Collision Regulations* were revised they were annexed to the rules as recommendations and were reproduced with the new rules in Notices to Mariners (e.g., in August 1965, as Notice No. 686, and as No. 20 in the first issue of the 1966 Notices).

These recommendations (Ex. 1472) read as follows:

*"Recommendations on the use of radar information as an aid to avoiding collisions at sea.*

(1) Assumptions made on scanty information may be dangerous and should be avoided.

(2) A vessel navigating with the aid of radar in restricted visibility must, in compliance with Rule 16(a), go at a moderate speed. Information obtained from the use of radar is one of the circumstances to be taken into account when determining moderate speed. In this regard it must be recognized that small vessels, small icebergs and similar floating objects may not be detected by radar. Radar indications of one or more vessels in the vicinity may mean that "moderate speed" should be slower than a mariner without radar might consider moderate in the circumstances.

(3) When navigating in restricted visibility the radar range and bearing alone do not constitute ascertainment of the position of the other vessel under Rule 16(b) sufficiently to relieve a vessel of the duty to stop her engines and navigate with caution when a fog signal is heard forward of the beam.

(4) When action has been taken under Rule 16(c) to avoid a close quarters situation, it is essential to make sure that such action is having the desired effect. Alterations of course or speed or both are matters as to which the mariner must be guided by the circumstances of the case.

(5) Alteration of course alone may be the most effective action to avoid close quarters provided that:
  (a) There is sufficient sea room.
  (b) It is made in good time.
  (c) It is substantial. A succession of small alterations of course should be avoided.
  (d) It does not result in a close quarters situation with other vessels.

(6) The direction of an alteration of course is a matter in which the mariner must be guided by the circumstances of the case. An alteration to starboard, particularly when vessels are approaching apparently on opposite or nearly opposite courses, is generally preferable to an alteration to port.

(7) An alteration of speed, either alone or in conjunction with an alteration of course, should be substantial. A number of small alterations of speed should be avoided.

(8) If a close quarters situation is imminent, the most prudent action may be to take all way off the vessel."

Electronic shore-based aids can be of assistance only to those vessels which carry the proper receiving instruments. For example, accurate navigation is now possible during darkness or fog in the Gulf of St. Lawrence, which is serviced by a Decca system, or in the Atlantic Ocean, which enjoys

a Loran system, but all the care and expense involved in creating these systems goes for nothing if ships do not carry instruments to make use of them. Neither Decca nor Loran is available in the Quebec Pilotage District.

Most ships are equipped with direction-finding equipment (D.F.). This is, however, of little use in the District because radio beacons are available only at the eastern limit, i.e., at Bicquette Island and Red Islet. All the same, D.F. is most useful in that vicinity during poor visibility since the violent cross-currents there may throw a vessel off course, as happened in the stranding of the *John E. F. Misener* on November 6, 1959. The casualty would have been avoided if, as a double check, the pilot had tried to verify the position of his vessel with the Red Islet radio beacon. He would then have discovered that the vessel was passing north of Red Islet instead of south as the pilot intended and as he was certain was the case (p. 367).

The telecommunication equipment in a number of vessels is still not up to modern standards and requirements. While by international law all ships are equipped with WT, some vessels still have no equipment for radio communications. This situation is being corrected (p. 181).

In Great Lakes vessels the radiotelephone equipment is installed in the wheelhouse ready at hand for the pilot or ship's officer conning the vessel. This is not always the case in ocean-going ships where too often the set is in the radio room depriving the pilot of direct control of the radiotelephone. Some vessels, however, have extensions from the radio room to the wheelhouse and this problem does not arise when the pilots take their portable set on board.

To enhance the safety of navigation the pilots made two other valuable recommendations on equipment. While they understand that these proposals can not be acted upon by the Canadian Government without an international agreement, they suggest an approach by Canada to the International Maritime Civil Organization (IMCO).

First, they recommended that sound signals be supplemented by an automatic luminous device which shows a white light when the siren is sounded with the object of identifying vessels in harbour and in dense traffic (cf. the present system on the Great Lakes). This practice is also useful when vessels are approaching because the wind may interfere with the sound signal. If the pilots know that some signal will be made and are waiting for it, they will notice the light signal if the siren is not heard. Steam whistles combine sound with a white plume which can be seen for a long distance but modern sirens have no visual component.

They also recommended a rudder angle indicator and an RPM indicator in the wheelhouse so located as to be easily seen by the pilot and enabling him to verify at a glance whether the wheelsman is steering the desired course and whether engine orders have been properly executed. The Seaway

pilots would like to have these instruments installed in both wings of the bridge where they frequently have to stand when manoeuvring vessels in canals and locks.

(o) *St. Lawrence River Navigation Safety Regulations*

These regulations are enacted by the Governor in Council pursuant to sec. 645 C.S.A. in order to enhance safety of navigation on that part of the St. Lawrence River extending from Les Escoumins to the west end of Montreal harbour. The regulations now in force were made by Order in Council P.C. 1967-700 of April 13, 1967, and revoked the former regulations which dated from 1954.

In addition to provisions dealing with the navigation of small vessels (secs. 4-7) and speed regulations when meeting tows, dredges, etc. (secs. 8-9), the main provisions applicable to the Quebec Pilotage District are:

(i) *sec. 10*—obliges vessels navigating against current or tide before meeting another vessel at any place where navigation is difficult to slow down and, if necessary, to allow the other vessel to pass the point of danger before approaching that point;

(ii) *sec. 11*—prohibits towing barges more than two abreast, and the total length of a composite navigational unit is not to exceed 1,000 feet;

(iii) *sec. 12*—makes it an offence for the Master, officer of the watch or pilot not to obey immediately the traffic control orders of a Harbour Master or of a marine traffic controller as well as an order received from an officer of the Canadian Coast Guard or the Royal Canadian Mounted Police (unless it is not practicable to do so).

(p) *D.O.T. Marine Information and Telecommunication Services*

At the time of the Commission's hearings, the Department of Transport operated for the benefit of shipping an information service on maritime traffic and weather conditions which had not changed basically since the time of sailing ships. In addition, an inefficient and obsolete marine radio network left vessels without ship-to-shore radio communications for long stretches of the St. Lawrence River, to the detriment of safety in an era when the number of large, faster ships is rapidly increasing and traffic proceeds even in the most adverse weather conditions with the aid of shipborne electronic aids to navigation. Furthermore, the St. Lawrence River east of Les Escoumins was considered officially closed during the winter season despite steadily increasing traffic.

The Commission received many complaints about these antiquated services, the attitude taken by the Department of Transport and its failure to realize the seriousness of the situation and take advantage of modern develop-

ments in science and technology. One electronic firm, Computing Devices of Canada Limited p. 110, proposed to the Commission a modern system of surveillance and information for the River St. Lawrence.

Great progress has been made since the Commission's hearings. The Marine Radio Service has been substantially improved; the Ice Advisory Service has been extended to the St. Lawrence River; the Department of Transport has established a modern surveillance and information system, whose reliable radio network, *inter alia,* enables the Quebec and Montreal Port Authorities to communicate berthing instructions and other information.

(i) *The former Marine Reporting Service*

As a service to shipping, Pilotage Authorities, Port Authorities and other interested parties, the Department of Transport reports the maritime traffic situation and the weather conditions on the St. Lawrence River as they develop. This service was formerly called the *Marine Reporting Service* normally referred to as the *Signal Service.*

Up to 1966, this information was gathered visually by observers stationed at intervals along the River who reported every ship they could see passing their observation post, giving her time, name and direction. In addition, these observers recorded the prevailing weather conditions. Originally, the service provided local weather information to passing vessels by semaphoring from the land station the conditions some distance ahead. Later, traffic and weather information was transmitted by land telephone or teletype to a central signal station.

The Signal Service broadcast at regular intervals over the coast radio stations meteorological reports compiled from the information gathered by these observers. It also complied with special requests from ships by obtaining through land telephone or teletype up-to-the-minute reports from the observers in the areas concerned and transmitting the information through coast radio stations.

The Signal Service also relayed maritime traffic data to those concerned. This was done in two ways:

(i) information was first transmitted to the Pilotage Authorities and Port Authorities over the teletype network which served them;

(ii) printed bulletins were issued twice daily (except during the weekend) quoting the time various vessels passed the observation posts (Ex. 769).

The observation stations were at Sept-Iles, Les Escoumins, Pointe Noire, St. Jean (Ile d'Orléans), Quebec, St. Nicolas, Grondines, Batiscan, Trois-Rivières, Sorel, Cap St. Michel and Montreal. The Marine Reporting Service had at its disposal a teletype circuit running from Sept-Iles to Montreal with various intermediate stations including some of the coastal Dept. of Transport telecommunication stations. This teletype circuit was linked with a

similar teletype circuit along the Seaway between Montreal and Sarnia with Montreal as a control station. Since these teletype networks were also used for other purposes, there were complaints that long delays were experienced and that at times it was not possible to clear the circuit for urgent messages.

The observation posts were normally closed during the winter season, but some were manned temporarily whenever a ship in transit was expected. In recent years, ice observation stations had been added during the winter season at places where ice was more liable to accumulate, e.g., Ile aux Coudres passage, the Quebec Bridge, Donnacona and Portneuf, so that up-to-the-minute information about ice conditions could be obtained from these observers over land telephone and the teletype network.

Captain J. J. Gendron, whose previous service included several years with the Department of Transport as Regional Superintendent for the St. Lawrence region, expressed the opinion at the Commission's hearings that this Signal Service did not meet present day needs and that there was much room for improvement. He referred particularly to the inefficient procedure (by modern standards) for obtaining information about the passing of ships by visual means although weather conditions often prevented a clear view. He believed greater use could be made of the telecommunication devices modern ships carry. He proposed that the visual observer system be abandoned and that it be made compulsory for vessels to report when they passed certain check points on the River, giving both their position and direction, as well as reporting on the prevailing weather conditions. These reports would be collected at a central office where a record would be kept of the progress of all vessels and up-to-the-minute information could be relayed to all concerned. Similarly, the weather reports received from these vessels would be arranged so as to provide an up-to-the-minute picture of the weather throughout the area.

For this purpose, as well as for establishing communication with every ship, he favoured making it compulsory for vessels to carry radiotelephone equipment in pilotage waters.

One of the recommendations of the Court of Formal Investigation into the collision of M.V. *Lawrencecliffe Hall* and S.S. *Sunek* (p. 373) dealt in part with this subject:

The Court further recommends:

> "1. That regulations be enacted in order that any ship of a certain tonnage which sails in Canadian pilotage waters be equipped with a V.H.F. radiotelephone and that security calls be given as to her position, destination, direction and speed at certain points of the route, said points to be detailed in the regulations."

In a letter dated April 29, 1966 (Ex. 1466(f)) the Department of Transport informed the Commission that it had embarked on a very extensive study of safety conditions on the St. Lawrence River. As a development

of this study, a new information service for the St. Lawrence River was being organized and, as an interim measure, steps were being taken to provide ships lacking VHF radiotelephone equipment with portable sets at Les Escoumins.

(ii) *Marine Traffic Control System and Marine Information Service (Ex. 1538(b))*

Since 1966, the former Marine Reporting Service has been gradually replaced by the Marine Traffic Control System which came into full operation in April 1968. It covers the St. Lawrence River from Sept-Iles to the western limit of the harbour of Montreal, i.e., a distance of 425.5 nautical miles. At present, the Saguenay River is not covered.

In official publications the objectives of the Marine Traffic Control System are stated as follows:

(i) to prevent collisions between ships;

(ii) to prevent collisions between ships and obstructions in the channel;

(iii) to maintain a safe, expeditious and orderly flow of shipping in waters under jurisdiction;

(iv) to alert appropriate authorities when ships are in need of assistance.

The purpose of the system can be summed up as follows:

(i) primarily to provide an up-to-the-minute information service on traffic, weather conditions and all other matters related to the safety of navigation within the system;

(ii) to serve as a means of controlling ships' movements within the system;

(iii) to provide reliable ship-to-shore and ship-to-ship radio communications.

The visual observation post system has been abandoned and the necessary data for the information service is now obtained from ships in transit which are requested to report *en route* their progress, the prevailing weather conditions and any situation affecting the safety of navigation.

There are at present two main weaknesses in the system: first, the availability of information is dependent upon the presence in the system of a number of vessels in the various sectors; secondly, since the service is based on a VHF communication network, there is no direct way of ascertaining that a vessel lacking the appropriate equipment is in the area. Normally, these flaws create few inconveniences and alternate means are being devised to remedy them.

With regard to VHF, the ultimate solution is to make it compulsory for ships to carry this equipment. Steps are now being taken in that direction. Until recently, this could not be done since an amendment to the Canada Shipping Act was required, and this in turn was governed by the existing

international agreement on the matter which did not provide for such an exigency. In recent years, however, VHF radiotelephone has become standard equipment in most vessels and the need for it has now been recognized in international safety conventions. On July 9, 1969, by 17-18 Eliz. II c. 53, secs. 411, 412 and 413 C.S.A. were amended in order to make it possible to compel vessels navigating in Canadian waters to carry the required VHF radiotelephone equipment where deemed necessary. To implement this amendment within the system it will now be necessary to have appropriate regulations drawn up and adopted.

For vessels not so equipped, portable radio sets are available for a nominal fee at every boarding station. If a pilot is employed, he brings a portable set on board and, in this event, a radiotelephone charge is included in the pilotage dues.

The headquarters of the system is in Montreal where the necessary liaison is maintained with the compulsory Seaway Traffic Control which has existed since the opening of the Seaway.

For the purpose of radio communications, the St. Lawrence has been divided into six sectors where two-way communications are maintained on separate assigned VHF frequencies between the Control Centres and ships to avoid interference with adjacent sectors. Vessels are required to maintain a continuous listening watch on the assigned sector frequency. The system is divided into two control zones: the eastern zone, which extends from Sept-Iles to Yamachiche Bend in Lake St. Peter, covering sectors 1 to 4 with the Control Centre in Quebec City; the western zone, which comprises sectors 5 and 6 and extends from Yamachiche Bend to the western limit of the harbour of Montreal, with the Control Centre in Montreal.

To gather information from ships in transit the system is divided into 24 check points where vessels are required to report to Control Centre by giving name, check point, ETA at next check point and the prevailing weather conditions. Additional reports between check points are to be given when requested by the Control Centre, or immediately to report any matter affecting the safety of navigation, such as defective aids to navigation, obstructions in the channel, disabled or hampered ships, and unusual weather conditions.

Information from these sources on ships' movements is relayed by the Control Centres to the Montreal headquarters for dissemination outside the system through the *Traffic Information Centre* to the Harbour Authorities in Quebec and Montreal, the Seaway Authority, the Pilotage Authorities concerned and also the general public. Within the system, ships are informed of the traffic situation as it develops by listening to reports on the sector frequency; in addition, up-to-the-minute traffic reports may be obtained from Control Centres upon request.

This traffic information is perforce incomplete since only ships with VHF equipment can report. This will be remedied when VHF equipment is made compulsory within the system as in the Seaway. However, the problem is not serious, since at the present time over 85 per cent of the ships on the River have permanent VHF installations and the majority of the remainder are provided with VHF portable radio sets when a pilot goes on board. There are a few smaller craft whose VHF sets lack all the required channels but the Control Centre endeavours to communicate with them on one of the channels they have. This, however, is not deemed desirable because it destroys the "party line" concept on which the system is based. The Control Centre endeavours to keep track of the few ships without VHF communications through position reports from ships with the proper sets.

At present, radar surveillance is maintained only in certain parts of the harbours of Quebec and Montreal.

Weather reports received from ships are also relayed by the Control Centres to the Montreal headquarters for dissemination. Within the system, weather information is furnished by the Control Centre through routine broadcasts or upon request.

Information affecting safety of navigation is transmitted to the Montreal headquarters for immediate dissemination through Notices to Shipping over the coast marine radio station network. Within the system, such information is also broadcast forthwith by the Control Centre concerned to vessels in the sectors affected. These Notices to Shipping will be repeated by the coast stations and the Control Centre on routine broadcasts until the emergency is over.

The system is effective in obtaining weather information during the normal navigation season since traffic is relatively constant throughout the area at that time. Reports from ships in transit combined with forecasts from the Dorval Observatory give an adequate overall weather picture. During the winter months, weather and ice information is received from D.O.T. establishments on the River as well as from the few ships in transit. During the 1969/70 winter, reports will also be sent from a fixed-wing aircraft of the Coast Guard to supplement this incomplete information. Electronic equipment to provide weather information is also being tested. At present, there is a fog detector at Batiscan which covers only a small section of the River. It is reported the difficulties experienced appear to be caused more by the transmission line than the instrument itself. Additional fog detectors will be installed at the more critical points when these difficulties are overcome.

At all pilot stations, a pilot may receive up-to-the minute weather and ice conditions by calling a "code-a-zone" number on land telephone and listening to a tape recorded report which is amended as the situation changes.

Each pilot station posts a list of vessels operating in the immediate vicinity of the boarding station; this is updated every hour. Before a vessel

departs from a berth or anchorage, the pilot must request clearance through a Control Centre. He is informed whether vessels are in his immediate vicinity and clearance is not given if they present a navigational hazard. In addition to the information a relieving pilot at Quebec or Trois-Rivières may obtain at the pilot station, he should be informed by the pilot he relieves what traffic he is likely to meet. As an extra safeguard, the new pilot can receive immediate information through VHF radiotelephone, if he wishes to call Control Centre before his next reporting point.

At present, the system serves in a limited way as a control over ships' movements. Controlling traffic should not be confused with the navigation of ships. The system has not been devised as a method of navigating or manoeuvring ships by remote control from a shore station (vide Part I, pp. 42-44). Masters are reminded that they remain responsible for the safe navigation of their ships. However, the system's VHF network not only provides information but also conveys orders that must be complied with. The St. Lawrence River Navigation Safety Regulations make failure to comply with such an order an offence carrying a fine not exceeding $500 or in default a maximum 30-day term of imprisonment. Sec. 12 of these regulations reads as follows:

> "The master, officer of the watch, pilot or other person in charge of a vessel shall, as far as practicable immediately obey the traffic control orders of a Harbour Master acting within the area of his jurisdiction, an officer of the Canadian Coast Guard, the Royal Canadian Mounted Police or a marine traffic controller."

The validity of this provision regarding the orders given by a marine traffic controller is questionable since neither the term *marine traffic controller* nor the powers of such a person are defined in any regulation. Their case is different from the Harbour Masters of Montreal and Quebec whose functions and powers are defined in the National Harbours Board Act and regulations made thereunder (for Montreal, vide pp. 656 and ff.).

Despite its misleading name, the Marine Traffic Control organization is not intended (at present at least) as a means to effect control of ships' movements on the River. According to Notice to Mariners No. 243 dated March 7, 1969, dealing with the Marine Traffic Control System, the only orders that a marine traffic controller at the Control Centre may give are concerned with the efficient functioning of the service and the nearest approach to traffic control is the provision prohibiting a vessel from entering the system until clearance is granted from the Control Centre, which, in fact, is merely a means of ascertaining the presence of vessels within the system by prohibiting entry without prior notice. The marine controller has no legal authority to withhold or delay clearance. Once a vessel has been granted the required clearance it may proceed at any speed that is not excessive under the circumstances and where desired (except in the area under the jurisdic-

tion of the Quebec and Montreal Harbour Masters). There is nothing authorizing a Control Centre to direct the progress of a ship throughout the system or to prevent her from progressing further.

As an integrated service, the system also provides reliable, fast, long-range radio communications through the VHF network over which to relay the traffic control instructions, requests and information of the Quebec and Montreal Harbour Authorities.

Before the Marine Traffic Control System was organized, the Port Authorities of Quebec and Montreal had operated their own harbour-to-ship VHF radiotelephones for some time. While these radiotelephones worked well within the harbour, complaints were made that their range of transmission was too limited. This inconvenience has now been overcome by using the system VHF network to relay ship-to-harbour traffic. Harbour Masters now receive ETA's and requests from ships within the system and transmit their orders and clearances through the Control Centres. Notice to Mariners No. 243 stipulates that a Marine Traffic Control *clearance* (permission to proceed) i.e., an order so transmitted, constitutes authority for the Master of a vessel to proceed, traffic and other conditions permitting. These clearances are subject to the Harbour Regulations which are repeated in the Notice to Mariners, i.e., a clearance for leaving any berth (including anchorage) automatically expires 15 minutes after it has been granted if the ship has not proceeded, and a new clearance will be required.

As an indirect result of setting up this information service, a reliable and highly efficient means of ship-to-shore and ship-to-ship radio communication has been provided. It is desirable to make additional specific uses for it provided they do not interfere with the efficiency of the information service.

The Marine Traffic Control System is primarily a means of promoting the safety of navigation and was devised as such. Its main purpose is to provide up-to-the-minute information regarding all matters affecting safety, e.g., traffic, weather conditions, obstructions in the channel, aids and failures. This aim was achieved by adopting the *party-line* concept, i.e., all vessels within a sector must be in constant touch with their Control Centre by keeping a listening watch on the sector listening frequency. Thereby, they are automatically aware of the situation within their sector from reports sent by other vessels, routine broadcasts and safety notices. It is on account of the party-line concept that a ship may not switch her radiotelephone to another frequency without first obtaining permission from the Control Centre. For this reason also, it is important that the party-line be restricted to information of value to all listeners.

The Marine Traffic Control System directives provide that the system is not intended to replace other existing radio communication facilities. "No duplex facilities are provided; public correspondence and domestic messages will not be accepted."

Liaison between the headquarters of the Marine Traffic Control System and the related public services to shipping, i.e., Port Authorities, Pilotage Authorities, District Marine Agencies, and the St. Lawrence Seaway Authority, has considerably reduced the need for public correspondence. A vessel no longer has to communicate through a coast station with the District Marine Agency to report faulty aids to navigation because safety reports made to the Control Centre will immediately be relayed to the agency concerned for remedial action. The Seaway Authorities are informed of the approach of vessels bound for the Seaway by the system headquarters and vice versa, thereby relieving these vessels of the necessity of communicating with the Seaway or the Control Centre to report their intention to enter the Seaway or the system.

As seen earlier, ship-to-harbour communications through the system are limited to requests and clearances regarding berthing, unberthing and anchoring. Other official correspondence between ship and harbour must be made through other means. However, although there is no mention of the subject in any official publication, the Control Centre will transmit to a tug company a ship's request for tug assistance, no doubt because it affects the safety of navigation within a harbour. The extent of such assistance is dependent upon the berth assigned, the extent of the traffic and the nature of the prevailing weather conditions in the harbour, information which is provided through the system and which is not available until a ship is about to reach the harbour. The arrangements in effect in the Quebec Centre are that whenever a pilot requires a tug the request is passed immediately to the appropriate tug office from the Control Centre. In the Montreal Centre, the Control Centre asks ships passing Tracy whether tug assistance for berthing in Montreal is required and, if so, the requirement is conveyed by direct line to the tug office.

Similarly, requests for pilotage service are relayed to the Pilotage Authority concerned through the system. This, however, is not mentioned anywhere, as it is believed it should be in Notice to Mariners No. 243. With regard to upbound vessels, it is only stated in an indirect way in Canadian Notice to Mariners No. 30 ('69 Annual Edition) which provides that Masters of vessels requiring a pilot should, when upbound, give a minimum 12 hours' notice of requirement to ensure the availability of a pilot at Les Escoumins. Masters are reminded that if they are unable to communicate with the Quebec Traffic Control on VHF Channel 14, (156.7) they must report to "Pilots, Montreal", *via* any coast radio station, the ETA at Les Escoumins pilotage station. No mention is made how requirements for pilotage service at Quebec, Trois-Rivières and Montreal are to be conveyed; the only provision is that a Master should make his request in time to enable the pilot to meet the vessel. As a rule, a vessel which employs a pilot at Les Escoumins will continue to do so throughout the system, as well as in the

Seaway if proceeding west of Montreal, and vice versa. The Traffic Information Centre at Montreal will transmit information about a vessel's movements to the pilotage offices in order to ensure efficient pilotage despatching. Vessels not equipped with VHF are warned that, since their progress can not be ascertained, they may experience delay while arrangements are made for despatching a pilot. It is considered that the Notice to Mariners describing the Marine Traffic Control System should contain complete instructions for transmitting requests etc. between ships and Pilotage Authorities similar to the procedure laid down for ships and Harbour Authorities to communicate regarding berthing and unberthing clearances. Re the contradiction between Notices to Mariners and Pilotage By-laws defining notice of requirements for a pilot, vide p. 442. Re the details and information such Notices should contain, vide pp. 189-190.

In a letter dated August 20, 1969, addressed to the Department of Transport (Ex.1538(t)), the Shipping Federation of Canada complained about breakdowns of communication in the transmission of notices of requirement for pilots between D.O.T. coastal stations, the system and the Pilotage Authority. It complained that, although a number of their vessels had complied with the 12-hour notice of requirement by addressing a message through a coastal station, they had either experienced, or were threatened with, a 12-hour delay at Les Escoumins pilot station because the message had been lost in the system, and some vessels which had been refused a pilot proceeded to Quebec without a pilot. The Shipping Federation added:

> "We have a number of very irate principals and on checking the radio logs ashore and afloat they have every justification to be indignant when penalised for an error not of their volition."

Ship-to-ship radio communications while under way are one of the most valuable modern means of ensuring safety of navigation when meeting or passing, especially during poor visibility, and VHF affords the most efficient short range contact. Since ships' VHF sets must be kept open on the sector listening frequency, radio contact must first be established on that channel.

Ship-to-ship communications are dealt with in only a general, indirect and ambiguous way in the Marine Traffic Control Notice to Mariners when vessels are authorized to give additional navigation safety calls at other locations than the mandatory reporting points, if conditions warrant. Masters and pilots are cautioned that conversation should be kept at the minimum consistent with safety requirements. The present practice which provides for additional ship-to-ship radio communication is not reflected as, in the Commission's opinion it should be, in Notice to Mariners No. 243. As in the past, the pilots use the radiotelephone for ship-to-ship communication when considered necessary during meeting and passing situations. The problem of saturation is ever present. After discussion with the pilots, authorities operating the system have endeavoured to reduce the number of messages being transmitted on the party-line between Control Centres and ships without

lessening efficiency. Pilots are allowed to use the Control Centre frequency when talking to another vessel, provided there is little radio traffic; if this is not the case, the Control Centre requires a switch to the inter-ship frequency for close manoeuvering.

When manoeuvering with tug assistance, the modern practice is to dispense with whistle and horn signals and to transmit orders by VHF. In the harbour of Montreal, Channel 6 is specifically assigned for this type of communication. Similar arrangements exist in Quebec harbour.

*COMMENTS*

The creation of the information service, misleadingly called Marine Traffic Control, is an extremely important advance in the field of assistance to shipping. It is a system which is already highly efficient, despite the fact it is only beginning. Improvements will be made with experience.

However, it is merely a service to assist mariners and its existence does not mean that the St. Lawrence route will be accident-free from now on. Like radar, it will not serve its true purpose unless all parties concerned co-operate, make intelligent use of it and report shortcomings or deficiencies with a view to improvement.

All too often in the past, the pilots individually have adopted a passive attitude and have shown a lack of full co-operation. The inadequacy of earlier radio communications was a regular topic of discussion at the annual meetings of pilots and general complaints were registered, but these lacked supporting details and instances of failure were not reported at the first opportunity so causes could be ascertained and remedial action taken.

The Traffic Control System is based on ability to communicate immediately and efficiently between a Control Centre and all the ships within a sector. Therefore, it is essential that radio equipment should always be in good working condition. Because it is a question of safety, there should be a highly efficient maintenance service for portable radio sets. They should be checked to ensure that they are in perfect working order before they are given to a pilot leaving for an assignment. Any failure should be immediately reported by the pilot to Control Centre through the coast station by the ship's WT or RT transmitters. The Control Centre should report the matter to the District Supervisor of Pilots who should take immediate steps to have each instance fully investigated so that the cause of the failure may be ascertained and the proper measures taken to prevent a recurrence. It is quite possible that the most common cause will prove to be faulty maintenance, a weakness which could easily be remedied, provided failures are investigated immediately and the facts reported to the proper authority.

It is also of the greatest importance that the information provided by the service should be accurate and adequate in order to be reliable and helpful. Pilots and other users of the service should take a very critical but

constructive attitude in this regard. The gathering, compilation and dissemination of information is a complicated process which is always subject to improvement. The best way to assist those in charge of the system and to increase efficiency is to report every single instance where faulty or incomplete information is provided.

Vessels are required to report at check points and on any occasion when the safety of navigation is affected. It is considered that incidents which should be reported immediately by Masters and pilots include violations of the Rules of the Road, Collision Regulations and St. Lawrence Navigation Safety Regulations. Failure to report these violations affecting the safety of navigation results in those responsible continuing to break the rules and regulations until a casualty occurs.

The *breakdown of communications* within the system which a number of vessels have experienced in transmitting notices of requirement for pilots is a very serious matter which demands immediate and effective corrective measures. It was a necessary and progressive step to require that such notices sent through the coastal stations by ships not equipped with VHF be routed through Traffic Control headquarters; on one hand, uniformity of transmission of such notices to the Quebec Pilotage Authority is achieved and, at the same time, entry into the system of a ship which can not comply with the traffic control clearance requirement is notified. However, it should be remembered that by making the system an intermediary between ships and Pilotage Authorities (and also Port Authorities) the Department of Transport has also undertaken the responsibility of ensuring that these messages are transmitted effectively and promptly.

It would be wrong for the Pilotage Authority to take a passive attitude and to penalize vessels in any way, especially when they have been the victims of a system failure. It should be remembered that pilotage is primarily a service to strangers who lack local knowledge not only of the confined waters of the District but also of the ever growing maze of regulations, notices and publications applicable to navigation and pilotage in Canadian waters. It is a duty of the pilotage service both to provide expert navigators to navigate ships and to assist strangers to comply with local formalities and requirements. Since there is no international agreement on the procedure to convey a notice of requirement for a pilot, foreign mariners can not be expected to be fully acquainted with the varying procedures devised in each District to meet local circumstances, mainly to improve the pilots' working conditions. When pilots are not engaged in pilotage duties it is their prime duty to be available at the seaward boarding station when ships arrive. If the Pilotage Authority modifies this arrangement, it should adopt a realistic attitude and take all necessary steps within reason to avoid possible inconveniences to shipping while maintaining full efficiency, even if this means that a reserve of pilots must be kept at the seaward station.

It is only in case of flagrant bad faith or deliberate refusal to comply with the requirement that punitive measures could be adopted, provided these are duly authorized by pertinent legislation, which is not the case at present (Part I, pp. 230 and ff.).

One preventive measure that should be taken is for the Les Escoumins despatching office to ascertain on its own initiative directly by messages through a coastal radio station the pilotage requirements of vessels which have entered the system and have not complied with the notice of requirement, unless they know for certain that a vessel does not employ a pilot. To achieve this, it should be arranged that the Les Escoumins station is informed of the entry of all vessels into the District.

A further remedial measure should be to investigate each instance when a notice of pilotage requirement is not received. The Marine Traffic Control System is based on an array of sophisticated electronic devices which may break down but, since they are operated by human beings, human errors will be the main cause of failure. Both types of failure are most liable to occur during the organizational period. It is only by promptly reporting and investigating each instance of failure that reliability and efficiency can be achieved. If it is found that a pilotage notice of requirement has not reached Les Escoumins pilotage station, the Supervisor should find out from the ship whether or not the notice was filed. If not, the matter should be reported to the Pilotage Authority and it should contact the Master and the agent to bring the procedural requirement to their attention and seek their cooperation for the future. If, on the other hand, it appears that the requirement has been complied with, the Supervisor should report forthwith to Traffic Control headquarters in order that the failure can be investigated immediately, its cause ascertained and appropriate remedial action taken.

As a further precaution, it is considered that a system of double checking should be instituted, e.g., for vessels not carrying VHF equipment the Les Escoumins pilotage station might be required to acknowledge receipt of the notice of requirement through the coastal station network to the ship concerned. If this suggestion is adopted, a provision to that effect would have to be added to the directives from Les Escoumins dealing with notices of pilotage requirement with a request to the vessels concerned to repeat the notice if there is no acknowledgement within a given time, e.g., half an hour.

It is considered that official publications dealing with the Marine Traffic Control System should contain all pertinent information so that users are not obliged to refer to other Notices to Mariners or regulations. If certain provisions are contained in regulations, it is considered that pertinent extracts should be reproduced so that complete information is available in a single document. Hence, it is considered that the Notice to Mariners now in force

(No. 243, dated March 7, 1969) should cover the whole range of pilotage communications that can be effected through the Traffic Control System, thus providing Pilotage Authorities with all the details needed to arrange for the proper despatching of pilots until ships are out of the system or have reached their destination within the system. The Notice to Mariners should list the requirements for requests for a pilot for ships upbound from the Gulf, ships downbound from the Seaway or requiring a pilot when leaving a berth or an anchorage, either for a movage or a trip upbound or downbound within the system. Since pilots are assigned to ships by grade, the publication should list the particulars needed by the Pilotage Authority, e.g., tonnage, class, disabled ship and composite navigation units.

The procedure for using VHF radiotelephone for ship-to-ship communications when passing or meeting should be fully described, bearing in mind that the unwritten rules devised by the Traffic Control Authorities and the pilots remain unknown to a considerable number of ships on the St. Lawrence, i.e., those who do not employ pilots.

If effect is given to the Commission's suggestion (p. 189), the Notice to Mariners should also state that pilots are permitted to communicate prior to boarding with the ships to which they are assigned in order to obtain all the pertinent information they should have about ships' characteristics and shipborne aids to navigation, and should describe the procedure to be followed. This procedure should be similar to the one unofficially adopted for ship-to-ship communications.

(iii) *Telecommunications*

Since telecommunications were first instituted the Department of Transport has maintained as a service to shipping a network of marine radio stations for the purpose of promoting safety and facilitating ship movements. Vessels were also allowed to take full advantage of this ship-to-shore means of communication; hence, the secondary purpose of the network became the exchange of private and public correspondence. Except for official correspondence, the marine radio stations served as a relay between ships and commercial telegraph and telephone companies.

At the time of the Commission's hearings, the D.O.T. marine coast radio stations were the sole available means of ship-to-shore communication. Since then, as seen earlier, for the section of the River extending from Sept-Iles to Montreal, the public service function of the coast radio stations has been partly superseded and duplicated by the VHF network of the Marine Traffic Control System. It is assumed that for that section of the River it will be completely replaced in that function, except as an alternate means of communication in case of VHF equipment failure, as soon as it

becomes mandatory for ships to carry VHF radiotelephone. In the meantime, since a number of vessels do not yet carry this equipment, the coast radio stations covering that part of the River must continue to provide safety information through Notices to Shipping and weather broadcasts. They must also continue to handle that part of the official correspondence which is treated as an accessory service by the Marine Traffic Control System, e.g., requirements for pilots and pratique, and requests and instructions regarding berthing in the harbours of Quebec and Montreal. They are the sole means of transmitting radio correspondence for other ports and berthing places.

Beyond that section of the River covered by the system, i.e., east of Sept-Iles and on the Saguenay River, and inside the system for ship-to-shore correspondence not permitted on the VHF network, the coastal network remains the only available means of ship-to-shore radio communication.

The advent of ship-to-shore telecommunications has considerably affected pilotage; it has, *inter alia,* made it possible to provide a more efficient and less costly organization while at the same time substantially improving the pilots' situation. However, the statutory provisions governing pilotage have not been modified, with the result that they are now obsolete and totally unrealistic and that the practice being followed is illegal, although warranted (vide Part I, p. 230).

In earlier days when there was no quick system of communication, the pilots had no way of knowing in advance the time any vessel would arrive and their first intimation was when the vessel appeared on the horizon. They never knew how many vessels would call in a given day nor at what time any particular one would arrive. Then, as now, it was the pilot's responsibility to make himself available and it has always been the rule that a vessel should not be kept waiting for lack of a pilot. Therefore, the system at that time was for the pilots to remain at the seaward station during the whole of the navigation season, except when they were on duty aboard a vessel. They were permitted to stay at Quebec between assignments for a limited time only, after which they were required to return to the seaward station. There the pilots were not allowed to remain ashore until vessels appeared but, in order not to delay shipping, some pilot boats had to cruise constantly in the boarding area with pilots aboard prepared to embark them in upbound vessels with the least possible delay or to disembark other pilots quickly from downbound ships.

With the advent of telecommunications, the pilots' lot was improved greatly for advance information about ship arrivals (ETA) enabled them to plan their services so that they no longer had to cruise constantly at the boarding station. Pilot boats had to proceed only when it was known that vessels would arrive and they had to carry only the necessary number of pilots. A system of assignments could be drawn up and a pilot could stay with his

family between assignments. The basic system of despatching was no longer on a round-trip basis but despatching was performed at both ends of the District, i.e., at the seaward station and at Quebec.

Telecommunications also proved to be most helpful to the pilot in the performance of his duties for he could obtain advance information about the weather and the traffic to be expected, and prior to his arrival he could make arrangements regarding berthing.

Since the ship-to-shore service is an aid to navigation, it is a responsibility of the Department of Transport. In view of the existence in the Department of a highly developed service of a similar nature for ground-to-air communications, the organization, maintenance and manning of the necessary stations for the maritime service was entrusted to the Department of Transport branch responsible for the aeronautical service: the Telecommunications and Electronics Branch, Air Services. Similarly, at the local level this responsibility does not come within the jurisdiction of the District Marine Agent but under the Regional Controller of Telecommunications and Electronics, whose duties are to attend to aeronautical and marine communications and, to a certain extent, commercial telecommunications as well.

The radio stations operated for the marine service are also referred to as coast or coastal stations. Their primary duty is marine safety and their secondary duty correspondence. The safety service has precedence.

The safety service comprises the dissemination of general distress communications, emergency and safety signals, weather broadcasts prepared by the meteorological branch of the Department of Transport, Notices to Shipping and other information which is of assistance to mariners in general. The public correspondence service includes person-to-person telephone service with the shore, commonly called the duplex service.

This service operates on wireless telegraph (WT) and radiotelephone (RT). The RT system uses both high frequency (HF) and very high frequency (VHF). HF has greater range but its efficiency is often reduced by interference; VHF is limited to propagated line of sight but is free of interference.

At the time of the Commission's hearings, WT reception throughout the District of Quebec was very good but it is not normally resorted to since the procedure is cumbersome and slow and forces a pilot to use an operator as an intermediary. Many vessels were equipped with radiotelephone working on HF and VHF frequencies. For lack of close range VHF land-based stations the VHF radiotelephone could serve only for ship-to-ship and ship-to-harbour communications at relatively close range. There were many areas in the District where ships were without any radio communications on account of interference which prevented HF radio communication with the existing coastal stations network.

Like other aids to navigation, the Marine Traffic Control Service and the coast station safety service, i.e., distress, urgency and security messages from ships, are without charge. In the public correspondence service the ETA's and notices of requirement for pilots addressed to Pilotage Authorities are also free of charge.

For telecommunication purposes the Quebec Pilotage District is part of the territory of the Regional Controller of Telecommunications and Electronics whose office is in Montreal, the headquarters for the province of Quebec which the Department of Transport calls the Quebec region. The coast radio stations in this area are located at Montreal, Trois-Rivières, Quebec, Mont-Joli, Fox River on the eastern tip of Gaspé Peninsula, and Sept-Iles. In 1963, one additional station was under construction at Rivière du Loup.

Some years before, there was a radio station at Pointe Noire at the entrance to the Saguenay River which had originally been installed in the lighthouse to be used instead of land telephone as an internal means of communication for the *Signal Service,* i.e., for reporting ships' movements in and out of the Saguenay River. It was not an official radio station and was not operated by the Telecommunications Branch, but was extensively used unofficially by ships simply because it so happened that it was located where ships passing through radio communication "dead zones" (i.e., they could not reach either Quebec or Mont-Joli) could easily reach Pointe Noire. It proved to be of great assistance providing up-to-the-minute information about weather conditions at the entrance to the Saguenay and was also used to a great extent for public correspondence by the personnel of schooners who sent messages to their families through Pointe Noire rather than through Mont-Joli because the latter was farther away. By rendering these extra services to shipping the station was actually operating outside the scope of the regulations governing radio coast stations. When the pilot station was moved from Father Point to Les Escoumins and radio facilities at Rivière du Loup were improved, the need for RT service at Pointe Noire diminished and it was then decided to close the station (Ex. 1461(c)).

Although the pilots and the shipowners protested at the time, it appears that they soon became accustomed to operating without it, presumably because they could obtain the required information and services from other stations. Its replacement was not advocated before this Commission.

The coast stations in Montreal, Quebec, Mont-Joli and Sept-Iles are located at the airports in these cities. They handle both air and marine traffic but a different operator is assigned to each type of communications.

With no intermediate station between Mont-Joli and Quebec—a distance of about 190 miles—communications proved to be inadequate and at times totally non-existent for vessels in the Saguenay River or the North Channel except when they were in the vicinity of Orleans Island. Such a gap

in communications not only increased the hazards of navigation, because vessels in those areas could not receive safety warnings and weather broadcasts, but also greatly reduced the efficiency of the pilotage service and caused shipping much inconvenience. Although the cause of this situation and the solution to the problem had been known for many years, it was only recently that corrective measures were taken after renewed protests.

The efficiency of radio communications depends on various factors: type of frequency HF or VHF, capacity of equipment ashore and afloat, volume of traffic on available frequencies, interference and peculiarities of surrounding land. VHF communications are limited in range to line of sight. The strength of the radio signal on ordinary frequencies is affected by weather conditions and in daylight the difficulties of transmission increase with distance. While these can be overcome by the output strength of the transmitter, the sets carried by ships are frequently low powered. Radio communications in the Saguenay area are extremely difficult because of the mountainous terrain and between Les Escoumins and Orleans Island (especially in the Brûlé Bank—Ile aux Coudres sector), the Quebec station can seldom be heard or reached. The mass of metal in the Quebec Bridge interferes with HF communications in the vicinity but VHF is unaffected.

The Commission was informed that electronic developments and modern equipment make it possible to overcome the transmission difficulties arising from a combination of unfavourable terrain and the low powered radio sets which many ships carry by relocating antennae, establishing satellite stations and selecting the most favourable sites for new radio stations.

Before radar, vessels usually slowed down and anchored when visibility was substantially reduced. Time was not so important then, vessels were smaller and slower and even in clear weather it was frequently considered preferable to anchor and wait for a favourable tide rather than stem an adverse current and make barely any progress over the ground.

Since fast, reliable radio communications were not as necessary then as they are today, Masters and pilots became accustomed to unsatisfactory communications and took them for granted. When difficulties were encountered, no details were recorded and no report was made. When complaints were made, they were usually of a general nature and registered at the annual meeting of the pilots, as was illustrated, *inter alia,* by the testimony of pilot Edmond Pouliot. On June 5, 1963, he was piloting S.S. *Sylvia* from Port Alfred to Quebec. At 11.30 p.m. or midnight, when he was about five miles east of Cap Brûlé, he began trying to communicate with the Quebec radio station to give his ETA so that a relief pilot could be available at Quebec for the trip to Montreal. He was unable to establish communication until about 1.15 a.m., only some forty minutes before arrival, when the ship was between St. Jean, Orleans Island, and Quebec. He had tried every five minutes, on both VHF and HF, he was certain that his set was working

because he succeeded in communicating with another ship and was told that his signal was loud and clear. However, he did not register a complaint when he finally reached VCC Quebec.

In mid-July 1962, he also had difficulty with radio communications when aboard M.V. *Irvingglen.* He was expecting an order about berthing in Quebec but it never reached him, with the result that unnecessary delays were incurred when he was obliged to anchor, proceed to the pilots' office to receive his orders and come back to berth the ship. He does not know what went wrong, whether it was the Quebec station or the set in the ship but, once again, he did not make a report or carry out an investigation.

Another pilot testified that he had experienced difficulty contacting Quebec between 1.00 a.m. and 5.00 a.m., i.e., during the night shift. Once, in 1961, he was obliged to berth a Swedish ship without the aid of a tug because he had been unable to contact Quebec by radio at night to order it. He made no direct complaint except at the pilots' general annual meeting when radio communications were discussed.

The Commission's Nautical Adviser, the late Captain J. S. Scott, had an opportunity to verify and confirm the inadequacy of the radio coastal network during one of the survey trips he made for the Commission. On June 30, 1963, he proceeded upriver from Les Escoumins on board the new Yugoslav M.V. *Metohija.* He reported as follows (Ex. 1538(s)):

> "Coming upbound from Escoumins to Quebec aboard the Yugoslav vessel *Metohija,* the radio operator reported inability to raise Quebec Radio in order to obtain the vessel's Radio Pratique. He called from about 1200 to 1800. The pilot commented that the lack of radio pratique would cause a serious delay at Quebec and advised the master that it would be necessary to adopt other measures. Accordingly—when passing St. Jean, he ordered the Pratique flag to be hoisted, also the Pratique signal lights—and when passing the lighthouse he blew several resounding blasts on the ship's whistle. All of which was intended to convey to the lighthouse keeper that he should telephone the radio station. This was effective and within ten minutes of passing St. Jean, the ship's operator appeared on the bridge with the required radio pratique. Thus was it necessary for an anachronism to activate a modernism."

One of the reasons why these difficulties occurred was the lack of sufficient operators at the Quebec station. Mr. J. Emile Cloutier, who was employed by the Marconi Company (which operated the telecommunications system until 1957 when it was turned over to the Department of Transport on lease) and retired as Assistant Operator of the Quebec station in 1960 after 21 years' total service, observed that, in 1960, there were five operators to keep the Quebec station in operation 24 hours a day. He estimated that his personnel were insufficient to meet demands even on an ordinary day. At that time there was only one position in service, i.e., only one operator on duty at a time. The operator on duty was overworked and could not keep up with the traffic. He had to neglect some channels because he could not attend to five different circuits at once; especially when passenger vessels going up-

river sent many long messages, some in code, which had to be retransmitted. However, the calling frequency was always left open at volume in case of distress or accident, with the result that the other channels had to be turned down. Under these circumstances, a ship's call would remain unanswered as long as the operator was busy on other work which, at times, might take up to half an hour.

Complaints became more vigorous and more numerous as the need for an adequate, reliable system to meet modern navigation conditions became increasingly evident. As the majority of river schooners acquired efficient telecommunication devices their Masters joined their complaints and requests to those of the pilots.

In various resolutions passed at Corporation meetings from 1957 to 1963, the pilots requested the Department of Transport, *inter alia*, that appropriate steps be taken to ensure adequate radio communications between River traffic and station VCC Quebec, that a traffic control system be established in the harbour of Quebec and that all Department of Transport radio operators on the St. Lawrence River and Seaway be bilingual (Ex. 584).

Remedial action was taken progressively. Around 1960, a survey was made from Montreal to the Gulf to measure the field strength of transmissions from the coastal stations in that section. However, the Saguenay River was not surveyed. It was shown that, east of the Island of Orleans as far as the entrance to the Saguenay River, transmissions were made difficult by geological features such as iron ore deposits. The Lauzon shipyards interfered severely with the main coastal station, which was then situated on the high grounds at Lauzon, and it was relocated at Ancienne Lorette airport. In addition, field surveys were made to find better locations for transmitting and receiving antennas. As a result of these surveys, it was decided to add receiving stations at St. Michel, some 15 miles downstream from Quebec, and at Rivière du Loup. The latter was delayed by the Federal austerity programme in 1961.

On July 18, 1961, the Regional Superintendent reported to the Superintendent of Pilotage in Ottawa that he had investigated why a number of upbound vessels had reached Quebec without sending an ETA. He found that, in the vicinity of Goose Cape, radio communications with the Quebec station broke down. The matter was referred to the Telecommunications Branch for temporary remedial action until the Rivière du Loup station was constructed because the situation was causing the Quebec pilotage station serious administrative difficulties. Some improvements were achieved when the receiver aerials were relocated.

On May 9, 1962, the pilots were still complaining, despite the fact that a second marine position had been opened in the Quebec radio station to take care of the possibility that the delay in answering a call might be due to lack of personnel. The pilots' complaints were investigated and proved

founded. Remedial action was taken and a marked improvement was noticed but, at times, some difficulties were still experienced between Ile aux Coudres and Cap Brûlé.

In July 1963, the MAYDAY message of the sinking *Roonagh Head* was not received by the Quebec station, but was relayed by a station in Boston.

As of September 15, 1964, the Rivière du Loup station was still not in operation. The tender for its construction had been accepted July 23, 1964, and completion of the station was expected in 1965. However, as mentioned earlier, the Quebec station had two operating positions around the clock. A new transmitting satellite had been established at St. Michel and a new receiver satellite had been established at Beaumont: both were expected to be in operation soon. Their object was to improve communications with the Cap Brûlé area. In addition, a second operating position was established at Mont-Joli at the beginning of the 1964 season to take care of any possible delay caused by the operator being overworked.

The Rivière du Loup station was finally opened and in a brief to the Deputy Minister dated August 30, 1965 (Ex. 1461(n)) the Quebec pilots remarked that they had observed a definite improvement in radio telecommunications in the Quebec Pilotage District.

*COMMENTS*

This situation, which was formerly so highly unsatisfactory, has been resolved. The HF network of the marine radio coast stations has been improved and now provides satisfactory communications throughout the District. However, the greatest single improvement was the establishment of the Marine Traffic Control System which now offers an efficient, speedy and reliable means of communication for ships carrying VHF equipment in matters affecting the safety of navigation and the quick despatch of marine traffic.

(6) WINTER NAVIGATION

Winter navigation on the St. Lawrence is not new. In 1932, Sir Alexander Gibb stated in his report (Ex. 1465, pp. 111-112): "From records it appears that there is, in fact, no part of the winter in which, in one year or another, ships have not arrived at or sailed from Quebec". At that time, however, after studying the question he recommended against the development of the St. Lawrence winter route at public expense:

> "It is certain, however, that the cost and labour of maintaining access to the sea would be wholly disproportionate to the advantages. Risk of dangers and delays would be very great, particularly during snow storms, which come on with extreme suddenness and last for twenty-four hours and longer.
>
> The evidence that is put forward is of exceptionally favourable rather than normal conditions; and omits all consideration of the worst conditions. There is,

> in my opinion, little likelihood of the St. Lawrence ever being recognized either by shipping or insurance interests as a regular winter route. It would, in fact, only be to hazard the reputation of the St. Lawrence route, to invite ships to use it under what must always be difficult and dangerous conditions".

Until recently, the situation remained unchanged, but during the last decade an increasing number of vessels have been strengthened for operating in ice and others have been specially built for the trade. Winter navigation, although on reduced scale, is now a fact, as far as Montreal but not beyond because the Seaway is closed.

The winter navigation season is divided into four periods:

(a) the end of the normal navigation season when ice is forming and floating aids have been removed but a large number of vessels which are not reinforced for ice remain in the District;

(b) the winter season properly speaking when navigation can be attempted only by vessels reinforced and fitted for operations in ice;

(c) the end of the winter, similar to period (a), when ice remains in the River and floating aids have not yet been installed but a large number of vessels which have not been strengthened are in the District;

(d) a short period which occurs during period (c) when between Quebec and Montreal navigation is prohibited in restricted sections of the channels for all types of vessels. This is the run-off period when thick, heavy, bank ice floes separate from the shore under the influence of lower temperatures and high tides and enter the channels. During this period, vessels must stay clear of confined areas for a few days until the floes pass by.

Between December 1 and April 8, quite large quantities of ice are encountered in all channels and visibility is often reduced by snowstorms and blizzards. The situation is aggravated by the fact that only the minimum number of aids to navigation is in operation. The few floating aids available—winter spar buoys—are not lighted and can not be relied on because frequently they have been submerged by the ice and are not seen. If they are in view, their location can not be relied on because they are liable to be out of position. Masters and pilots must depend almost entirely on clearing marks and shore-based aids. The difficulty of locating a land-based beacon or mark against a white background in winter has been remedied by painting them a flaming phosphorescent orange colour.

Usually, all shore-based aids are kept in full operation during period (a), i.e., until the end of December. In period (b), i.e., from January 1 to March 31, some are completely extinguished or unattended and, hence, out of service, except when the passage of a vessel is expected, as will be described later.

Navigation in ice—especially in confined areas—is dangerous, if not impossible, unless performed by mariners accustomed to such conditions and experienced in the problems likely to be encountered. Navigation in ice is a special technique and the most important factor is whether the vessel is built for the purpose.

A ship not reinforced for ice would normally avoid going through an ice field by going around it if sea room permitted. However, when a ship must go through ice, speed is reduced to slow before entering the field to ease the impact on her unprotected sides and it is only when she is well into the ice that the engines are put full ahead to force a way through. When heavy concentrations of ice are met in restricted channels, it is preferable to leave the channel until the situation has improved. Anchoring in ice is accompanied by certain risks for there is always the danger of being shifted by the ice field and the officer of the watch must keep track of the ship's position at all times. Occasionally, when the ice is drifting, the ship's engines have to be used to keep the vessel in position.

There is always a possibility that the ice will take charge, even of a ship specially built for winter navigation. Nearly every season ships are immobilized in an ice field on the St. Lawrence and drift up and down for hours. The pilots have had this experience in the past, especially between Cap Brûlé and Cap Martin. Even icebreakers are trapped at times.

The collision between M.V. *Prins Mauritz,* 2136 NRT, and the bulk carrier M.V. *Middlesex Trader,* 8930 NRT, off St. Nicolas on April 6, 1965 (Ex. 1470(c)) illustrated the special hazards encountered during winter navigation.

The accident occurred at the end of the winter season but not in the run-off period, properly speaking. However, huge fields of ice were to be expected. In accordance with the Montreal District By-law, two pilots were on board each vessel, both of which were upbound through broken ice. At the western end of the St. Augustin bar the leading ship, *Prins Mauritz,* encountered a large field of ice which blocked the river and stuck fast in it. The assistant pilot immediately contacted *Middlesex Trader* previously observed some 2 miles astern, and reported their predicament over the VHF radiotelephone. The message was acknowledged by *Middlesex Trader. Prins Mauritz* lay in the ice pack off the port bow of *Middlesex Trader* outside the channel to the south. *Middlesex Trader* was kept at full speed ahead and on a course estimated to pass the other vessel at a distance of about 800 feet but when she entered the ice field she suddenly sheered to port and, despite the orders "hard-a-starboard" and "stop engines" followed by "full astern", *Middlesex Trader* collided with the immobilized *Prins Mauritz.*

At a preliminary inquiry held the day after the collision it was found that the pilots on board *Middlesex Trader* were faced with a situation which required not only good judgment but an immediate decision. The investigating officer reported:

> "It was impracticable to turn back, due to the narrowness of the channel, and unsafe to remain there and run the very real risk of being caught in this drifting, solid ice. In short, the *Middlesex Trader* could only continue and it became a matter of whether to proceed at full speed, in the hope of breaking through the ice ahead, or of reducing speed and risk becoming trapped in ice as was the *Prins Mauritz*.
>
> Since the *Prins Mauritz* was clear of the channel, it was decided to continue at full speed in the belief that the larger *Middlesex Trader* would succeed where the smaller vessel had failed.
>
> On striking this heavy ice, however, the *Middlesex Trader* sheered to port and then moved bodily in that direction, notwithstanding starboard helm, until she struck the *Prins Mauritz* a glancing blow. The *Prins Mauritz* was about 800 feet clear of the channel at this time. The slow engine response astern doubtless contributed to the accident, nor is there any evidence to show that this weakness in her manoeuvring capabilities had been made known to the pilots.
>
> It is submitted for your consideration that this casualty was due to the natural hazards attendant upon navigation in ice, and that these conditions are to be expected by ships undertaking winter navigation in confined waters. Under these circumstances, I recommend that no further action be taken."

These recommendations were concurred in and no further action was taken.

(a) *Ice Advisory Service*

Up-to-the-minute knowledge of the ice situation along the possible routes, of weather conditions and of the position of other vessels, plus the likelihood that an icebreaker will be available for assistance in an emergency, may mean the difference between a dangerous, almost impossible venture and a relatively easy one.

Such information and assistance is now provided by the Ice Advisory Service organized and operated by the Department of Transport. The service first covered only the Gulf area, but now covers the whole of the eastern coast up to Hudson Bay and the St. Lawrence River as far as Montreal.

This free, non-compulsory service is placed at the disposal of shipping. The nature of the service, the requirements and the procedure are set out in a pamphlet, issued in 1966 by the Department of Transport, entitled "Guidance to Merchant Ships Navigating in Ice in Canadian Waters". This pamphlet replaced an earlier one issued in 1962 entitled "Guidance to Merchant Ships Navigating in the Gulf of St. Lawrence in Winter". In addition, this pamphlet gives further information and advice regarding winter navigation such as warning vessels not strengthened for operations in ice to proceed at reduced speed; for all vessels to avoid being caught between an ice edge of an extensive pack and the shore or shoaling area with a strong on shore wind;

from going astern in ice which would expose rudder and propeller to damage. It also describes, *inter alia,* how a ship caught in ice is to be assisted, and the escort and convoy procedure.

(b) *Winter Navigation in the Gulf of St. Lawrence*

Winter navigation in the Gulf of St. Lawrence is directed from the Ice Operations Office at Sydney, Nova Scotia. Icebreakers on station and regular air patrols report on the ice situation and these data are collected in Sydney. Vessels are informed by radio broadcast and by charts which show both observed and forecast ice conditions. These charts are broadcast by facsimile from coastal radio stations to ships at sea. Immediate information in a given area may be obtained by calling an aircraft direct.

Commencing December 15 and until ice in the Gulf is no longer likely to hinder shipping, the Master of every ship bound inward to the Gulf is requested to advise the Ice Operations Office at Sydney, N.S., 36 hours prior to entering Cabot Strait stating vessel's position, destination, whether loaded or in ballast, ice class, if any, and classification society. Masters of ships outbound from Baie Comeau or from a port east of it are requested to give a similar 36 hours' notice of expected time of departure; Masters of ships sailing from Quebec or other port west of Baie Comeau are requested to give 24 hours' notice.

The Ice Information Officer will then assist the vessels by providing a suggested navigation track to each of them and furnishing thereafter the necessary up-to-the-minute information. Icebreaker service will be provided free of charge when the Officer-in-Charge considers it desirable and, if circumstances permit, priority being given to well trimmed ships which are strengthened for ice. If ice conditions are very severe, convoys will be organized with an icebreaker leading.

The service depends on the availability of constant, immediate radiotelephone communications. It is essential for all vessels to be fitted with VHF radiotelephone transmitting and receiving equipment on the bridge. For purposes of escort, for instance, ships so fitted are given priority over other ships. Operators must be fluent in either English or French.

As seen earlier, the Gulf area is covered by a Decca network and full use of it is made by the Ice Advisory Service to gather information and plot the position of ships and aircraft engaged in the service. It is recommended that vessels using the service be also equipped with a Decca navigator so as to be able to report their position accurately and to plot the location of the proposed tracks and the reported positions of other ships, icebreakers and aircraft.

(c) *Winter Navigation on the St. Lawrence River*

Ice information facilities were extended to the section of the St. Lawrence between Sept-Îles and Montreal when an Ice Information Office was

established at Quebec, in Juanary 1967. Up-to-the-mniute information on weather and ice conditions is obtained from observers, icebreakers and aircraft patrols. Icebreaker assistance is given when the Officer-in-Charge considers it desirable and if circumstances permit. The situation with regard to the section of the River extending from the Quebec Bridge to the port of Montreal will be studied in Section Three of this Part dealing with the Pilotage District of Montreal.

The extension of ice information facilities to the St. Lawrence River demonstrates official recognition of the increasing importance of winter navigation and now provides a necessary and long awaited service which has satisfied most of the pilots' complaints.

Prior to 1967, Notices to Mariners issued each fall warned vessels that, if they sailed in winter between Les Escoumins and Montreal, it was at their own risk, that navigation was not controlled in winter, there would be no convoy arrangements and no icebreaker assistance would be given except in case of distress.

However, where ice was liable to block the channel, land-based ice observers gathered up-to-the-minute information which was made available to all concerned from the District Marine Agent's office and by regular radio broadcasts.

The only ice observers in the Quebec Pilotage District were two men stationed along Coudres Passage on a part-time basis. There was no special arrangement between Goose Cape and Les Escoumins but, except in very severe winters, ice in that area presents no problem. In addition, general observation on the lower part of the River was carried out from the Mont-Joli air base by air reconnaissance patrols of the Meteorological Branch, Department of Transport, which acted in conjunction with the air patrols over the Gulf (Ex. 1456(v)).

In a brief dated August 30, 1965, addressed to the Deputy Minister of Transport (Ex. 1461(n)) the pilots protested against what they felt was a very unsatisfactory state of affairs on the St. Lawrence River as far as winter navigation was concerned. They pointed out that as pilots they were obliged by a Crown Agency—the Pilotage Authority—to perform pilotage during the winter months and that they had co-operated fully. They were distressed, however, to find that during the period when navigation was most difficult and at times extremely dangerous they were not provided with additional assistance by the Department of Transport but, on the contrary, aids to navigation were reduced, weather and ice information was almost unavailable and icebreakers were prohibited from helping vessels, even in distress, unless specific permission was obtained from Ottawa.

They further pointed out that since no tugs were available at Quebec in winter, berthing was very difficult and dangerous under winter conditions.

However, since there was no pilot vessel service for ships in transit, they were obliged to resort to this dangerous procedure for the sole purpose of changing pilots.

They added that winter navigation as far as Montreal was now an established fact and that the traffic was steadily increasing from year to year.

The Department of Transport reported that following the receipt of the pilots' 1965 brief (Ex. 1461(n)) the Assistant Deputy Minister (Marine), with Departmental officers, met representatives of the pilots on October 25, 1965. All the pilotage problems raised in the brief, including the subject of winter navigation, were discussed in detail. The winter pilot vessel problems at Quebec and Trois-Rivières stations were satisfactorily settled. The pilots were assured that icebreakers would be ready to assist ships in imminent danger because of ice or other reasons and that steps were being taken to employ the staff of the pilotage offices in the St. Lawrence areas on a year round basis. This has since been done.

At a further meeting held on November 3 to discuss the specific items relating to winter aids to navigation mentioned in the brief, conclusions satisfactory to all were reached (Ex. 1461(q)). As far as the Quebec Pilotage District is concerned, the situation has been further improved since by the extension, as aforesaid, of the Ice Advisory Service and the creation of the Marine Traffic Control System.

The South Channel is not used during the winter since it is almost certain to be blocked because the channel is shallow and the ice tends toward the south shore of the river, particularly in the vicinity of Crane Island and Goose Island.

(d) *Winter Traffic Statistics*

The Shipping Federation of Canada stated in its annual report that, although the winter of 1961-62 proved to be of the utmost severity, navigation through the Gulf up to Baie Comeau proceeded without interruption. The season was also successful on the River and ships specially equipped for ice conditions maintained regular schedules.

The Department of Transport report entitled "Gulf of St. Lawrence and Eastern Canadian Seaboard Ice Operations, winter 1962-63" (Ex. 1310) concluded that the season was generally a success. Export and import tonnages reached 2,700,000 tons (almost double the total of 1960-61) due to increased shipments, mostly of iron ore, grain and aluminum. It was observed that commercial vessels were co-operating much better than in previous years by reporting to Sydney before entering the Gulf. The only two vessels which failed to do so were caught in the ice and had to be freed. It was also reported by the Commanding Officer of Ice-breakers that Masters of merchant ships appeared more confident while navigating in ice. In several cases they were willing to proceed unescorted under conditions where, in former years, they would have demanded ice-breaker support.

Since then, successful and safe winter navigation has been maintained in the Gulf area with the efficient information and assistance provided by the Department of Transport Ice Advisory Service.

Although winter traffic on the St. Lawrence between Les Escoumins and Quebec has greatly increased in recent years, statistics indicate that it is not large when compared to traffic during the normal navigation season. This is explained by the fact that winter navigation is confined to the comparatively small number of vessels strengthened for operations in ice or specially built for the trade.

Statistics for the winter navigation season (Ex. 1464(f)), as defined in the District By-law, i.e., from December 1 to April 8, give the following information:

| Winter Navigation Season | Total Movements Upbound and Downbound between December 1 and April 8 | Downbound Movements between December 1 and December 28 (4 weeks) | Total Movements Upbound and Downbound between December 29 and March 28 (13 weeks) |
|---|---|---|---|
| 1959–60 | 299 | 186 | 37 |
| 1960–61 | 242 | 133 | 24 |
| 1961–62 | 285 | 160 | 47 |
| 1962–63 | 300 | 167 | 49 |
| 1963–64 | 510 | 236 | 71 |
| 1964–65 | 438 | 223 | 85 |
| 1965–66 | 496 | 174 | 148 |
| 1966–67 | 519 | 164 | 182 |
| 1967–68 | 572 | 155 | 251 |

These statistics indicate, *inter alia*:

(i) Winter traffic increased gradually and considerably between 1959 and 1968 but still accounts for only a small fraction of the total traffic, e.g., 1967-68 winter traffic, including the end of normal season downbound traffic, accounts for 6.8 per cent when compared to the total 1968 trips (vessel).

(ii) A large percentage of the so-called winter traffic is still composed of regular vessels hurrying out of the District at the end of the normal navigation season, i.e., between December 1 and December 28, and the early comers at the end of March and beginning of April. Up to 1964-65, downbound movements alone accounted for more than 50 per cent of the so-called winter traffic. This percentage has since decreased to 27.1 per cent in 1967-68.

(iii) True winter traffic, i.e., vessels specially built or reinforced for winter navigation, used to be only a very small percentage of the total winter traffic. This percentage has increased considerably in recent years due to the larger number of such ships, rising from 12 per cent in 1959-60 to 20 per cent in 1964-65 and 44 per cent in 1967-68. This trend is expected to continue as more special ships come into service and constant improvements and increased assistance are provided by ice surveys, traffic control and ice-breaker assistance when necessary.

## 2. NATURE OF PILOTAGE SERVICE

### (1) Nature of the Service

The pilotage performed in the Quebec District is mainly river pilotage together with berthing and unberthing those ships which are not in transit. There are very few movages or other harbour manœuvres.

Clarke Steamship Company Limited, a shipowner and operator conducting transportation services on the coastal and inland waters of Canada, expressed the opinion in its Brief (Ex. 1345) that the River is generally wide and deep between Quebec and Les Escoumins and the need for pilots is not great. It pointed out that this fact is recognized by the Pilotage District By-law which exempts British vessels up to 2,000 net tons from the compulsory payment of dues, and noted that until recently this exemption amounted to a general exemption because the range of general cargo vessels was less than 2,000 NRT.

However, it appears from the evidence that shipowners do not allow their vessels to sail in Quebec District waters unless their navigation is entrusted to a person who is well acquainted with the navigational features and difficulties.

Pilot J.L.M. Dussault reported that during his apprenticeship period, 1955 to 1957 inclusive, he had the permission of the Superintendent of Pilots to perform "pilotage duties" regularly both in the District and in various lower St. Lawrence River and Gulf ports. Since it would have been illegal—even for an exempt ship—to employ an unlicensed pilot within the District limits (Part I, p. 207), the difficulty was circumvented by the device of signing him on the vessel's articles as Sailing Master each time he embarked, thereby making him an officer of the ship. When his pilotage services were terminated, he was discharged from the ship, only to repeat the procedure and become a member of the crew of another ship for a few hours, and so on (vide Part I, p. 541).

The status of the Sailing Master is undefined. He was neither the Master nor a pilot nor a permanent officer. He ranked somewhere between the First Officer and the Master. When employed as Sailing Master, pilot

Dussault's main function aboard was pilotage and he remained on board for only a stated part of the trip, generally embarking at Quebec to pilot the ship down to her destination. He came back to Quebec in the same ship unless she was engaged in an ocean voyage. His services aboard were not used in the open stretches but only when there was some difficult passage to negotiate or when the ship was entering a port.

He was not employed as Sailing Master for one particular shipping company but for many ships and by various agents. Most of the Canadian ships he piloted in this fashion belonged to Canada Steamship Lines and were employed in the pulp trade between Godbout and other St. Lawrence ports and Great Lakes ports.

Pilot Roland Barras was similarly engaged during his long apprenticeship. For four years he was a non-official pilot for the Canada Steamship Lines passenger vessels.

Non-exempt ships did not resort to the device of employing a Sailing Master but always used licensed pilots because they were required to pay pilotage dues in the District. But when a ship proceeded east of Father Point, anyone could be employed as a pilot without signing on as a member of the crew since the waters east of Father Point are not contained within the limits of any Pilotage District; he was then considered a coastal pilot.

Pilot Dussault stated that before 1960 other pilots were employed as Sailing Masters and, in addition, coastal pilotage was performed by some Quebec District licensed pilots who more or less competed with the unlicensed pilots. In fact, much of the pilotage work he obtained was given him by a licensed pilot who did not wish to proceed outside the District. However, many licensed pilots simply carried on into the Gulf with their ships. This is no longer so because the practice was forbidden by the Pilotage Authority around 1960 and the pilots now perform no duties outside the District.

Unorganized coastal pilotage is reported to have virtually disappeared now that various commercial ports of the lower St. Lawrence, i.e., Port Cartier, Sept-Iles and Baie Comeau, have their own harbour pilots.

Before pilot Dussault became a pilot he served as a Master in ships plying the St. Lawrence. At that time it was his practice to employ a pilot "where the law said so" but otherwise to dispense with a pilot. He pointed out that one of the conditions of employment was that a Master would do his own piloting on the lower St. Lawrence.

In pilot Dussault's opinion a Master can navigate a ship through the Quebec District without a pilot as long as he has the requisite knowledge and takes adequate precautions, but in his experience ships gain in speed and safety when a pilot is employed. "The basic reason for employing a pilot is to put your ship in safer hands and in speedier hands".

It is reassuring for pilots to know that the ships they meet *en route* have pilots on board. There is then a similarity of procedure and navigation that conforms to general practice, with the result that they know what to expect. The pilots as a group have studied various possible situations and have agreed on the safest course of action, e.g., as described earlier, they have adopted a procedure to use different channels around Morin Shoal and Red Islet in foul weather to avoid meeting in restricted waters and thus to diminish the risk of collision. The Master of a ship without a pilot might decide to take just the opposite action as by regulation he would be quite entitled to do.

On the Saguenay River a pilot would add to the safety of navigation, *inter alia,* because he would abide by the rule of the road and keep to the starboard side of the channel, while other ships often "cut the corner"—an extremely dangerous manoeuvre because of the current and the restricted line of sight.

The nature and extent of the need for pilotage in the District of Quebec is well illustrated by the nine-day period from April 6 to 14 inclusive 1962 when the St. Lawrence pilots were on strike. Conditions were at their worst: it was the very beginning of the navigation season, a considerable number of ice floes were still in the river and floating aids had not yet been replaced. Masters were taken by surprise and had no time to prepare for this eventuality; they did not know how long the strike would last and were faced with the dilemma whether to wait in the hope that the controversy would soon be settled or to venture on a trip that might be lengthy in the circumstances. Only one of the nine ships that arrived during the first three days of the strike, when there was no expectation of an early settlement, did not proceed upriver. This was the *Capo Noli* bound for Montreal. Four of the other vessels, M.V. *Frederick Ragne,* M.V. *Consuelo,* M.V. *Ryndam* and M.V. *Joliette* proceeded without delay. The last two made the transit in daylight in nine hours and fifteen minutes and ten hours and forty minutes respectively. The remaining four, one bound for Port Alfred, proceeded alone after some delay.

On the night of the fourth day vessels began to wait for the conclusion of the strike. On April 12, twelve vessels were waiting at Les Escoumins. One of them sailed alone the day after. On the night of April 13, there were 17 ships waiting off Les Escoumins. However, during the strike 33 vessels proceeded alone between April 6 and 12 inclusive. They all made relatively good time but most travelled during daylight hours. On April 13, the four vessels then *en route* to Quebec were obliged to anchor in the region of Cap Brûlé on account of heavy fog and a snow storm which reduced visibility to zero. Except for that day those who navigated by night also made a good transit. M.V. *Porthos* and M.V. *Western Prince,* which left the evening of April 10, made the trip, mostly by night, in about ten hours and thirty

minutes and twelve hours and fifty minutes respectively. On April 12, M.V. *Virgilia* and M.V. *Herland,* which left at midnight, did the transit in twelve hours and fifteen minutes and eleven hours respectively.

There was very little traffic downbound because it was the opening of navigation and very few sea-going vessels had reached Quebec by then. Six vessels left Quebec and two left Port Alfred between the beginning of the strike and noon, April 13. All made good time downbound. M.V. *Batory* took seven hours, S.S. *Mormacpine* and S.S. *Weissenburg* seven hours and thirty minutes each. S.S. *Homeric,* which had taken twelve hours and thirty minutes upbound during the strike, did the return trip in eight hours and forty-five minutes. Three of these trips involved night navigation (Exs. 706 and 769).

In recent years the following vessels which intended to employ a pilot and were not prepared to proceed without one sailed without a pilot when, due to non-delivery of their radio message requesting pilotage service (p. 190), no pilot was available when they arrived at the pilot station: S.S. *Alexander Pushkin* (10,614 NRT) from Quebec to sea in April 1967; S.S. *Magdalena Oldendorff* (7,017 NRT) in PJuly 1967; S.S. *Sunmalka* (7,604 NRT) to Port Alfred in November 1968; and S.S. *Hansel* (2,889 NRT) May 2 1969 (Ex. 1538 (t).

The normal navigation time for a trip from Les Escoumins to Quebec in good summer conditions, with all aids to navigation operating, is between eight and eleven hours (vide Table p. 458 and Ex. 736). Forty-one ships proceeded without pilots and none had an accident in the channel. After a safe transit M.V. *Consuelo* anchored off Quebec but her anchor fouled the telephone cables.

M.V. *Harpefjell,* bound up river, encountered fog and snow off Cape Brûlé and anchored in that area on April 13. When the weather improved, the Master refused to proceed and waited for the end of the strike. On April 14, the Supervisor had to send him a pilot by means of a small vessel.

It is not compulsory to employ a pilot in the Quebec District but the payment of pilotage dues is demanded (although illegally, vide pp. 12-14) of vessels that are not specifically exempted by the provisions of the Canada Shipping Act and the By-law under which the relative exemptions to inland and coastal traders were partly withdrawn for larger vessels (vide p. 21). However, small vessels registered elsewhere than in any of Her Majesty's dominions, although not exempt, are not charged dues when they do not employ a pilot (Department of Transport letter dated August 9, 1965, Ex. 1456(f)).

However, very few non-exempt ships do not use the services of a pilot. Those which dispense with a pilot are mostly large barges or Great Lakes

vessels which do not come within the exemption provided for in the By-law because their tonnage exceeds the 2,000-ton limit. Most of them carry pulp wood for the Anglo-Canadian pulp mill situated at Quebec in the St. Charles River Basin and usually make two trips a week on the River.

The following table has been compiled from information available in pilotage returns for the years 1955 to 1968, showing the earnings of non-exempt vessels which dispensed with pilots but paid dues (or part dues if they enjoyed a partial exemption) and their percentage of the total pilotage revenue.

| Year | Earnings of trips (vessels) without pilots | Per cent of District gross revenue* |
|---|---|---|
| 1955 | $ 4,111.59 | 0.6% |
| 1956 | 6,156.58 | 0.8 |
| 1957 | 4,174.08 | 0.5 |
| 1958 | 3,220.44 | 0.4 |
| 1959 | 7,732.07 | 0.7 |
| 1960 | 5,946.11 | 0.5 |
| 1961 | 5,355.18 | 0.5 |
| 1962 | 5,541.11 | 0.5 |
| 1963 | 6,715.18 | 0.6 |
| 1964 | 5,237.67 | 0.4 |
| 1965 | 14,455.60 | 1.0 |
| 1966 | 6,371.96 | 0.4 |
| 1967 | 11,838.23 | 0.7 |
| 1968 | 2,544.57 | 0.2 |

*Excluding pilot boat and radiotelephone charges.
SOURCE: Ex. 534(a).

The Commission was informed (Ex. 1466(n)) that this sudden increase in 1965 was caused by the payment of a bill for $9,907.50 which represented the dues S.S. *Maplebranch* should have paid in 1963 and 1964. "Apparently the pilotage office was not aware until 1965 that this ship had been passing through the Pilotage District of Quebec without employing pilots. When the matter was brought to the attention of the pilotage office the required detailed information was obtained and a bill was presented, which was paid without question."

Captain Norman E. Rees-Potter, Canada Marine Superintendent for Cunard Steamship Company, stated that it is the company's policy to make use of the pilots' services on the St. Lawrence River and the basic reason for employing pilots is the safety of the ship.

Exempt ships generally take a pilot. Most naval ships take pilots but R.C.N. vessels sometimes dispense with a pilot when downbound. Ice-breakers do not take pilots, but small D.O.T. supply ships which go north during the summer take pilots when they sail downbound in June heavily laden.

*Bill S-3*

One of the principal aims of the amendments to the Canada Shipping Act proposed by Bill S-3 was the modification of the basic principles of exemptions for the whole of Canada, but especially for the St. Lawrence River and the Quebec District (vide Part I, p. 224).

It was proposed to do away with the existing discrimination against foreign vessels in favour of vessels registered in the Commonwealth. The Department of External Affairs had expressed its concern on this score because of ancient treaties with some foreign countries (Part I, pp. 224-225). At the same time, it was intended to revise the system so as to establish an exemption based on competency instead of on flag and type of voyage (vide Part I, General Recommendation 23).

These aims were to be achieved by deleting the phrase "registered in Her Majesty's dominions" from each of the two classes where it appeared in sec. 346 of the Canada Shipping Act. No reference was made to U.S.A. ships but, in fact, it was they who would have benefitted from the amendment because, generally speaking, other foreign ships are not engaged in the voyages described in subsec. 346(e). The result of the Bill would have placed United States lake vessels in the same position as Canadian lake vessels over the full length of the St. Lawrence River. For instance, the withdrawal of an exemption from Canadian lake vessels would have automatically meant a similar withdrawal for the Americans and, if a "white flag" certificate could be granted to a Canadian Master, American Masters would be similarly treated. Therefore, an American Master with greater experience than a Canadian Master on the St. Lawrence would have enjoyed the exemption but not the non-qualified Canadian Master, and any foreign Master could have applied for such an exemption since it would have been granted on the grounds of competence alone.

When the Bill was introduced, the Department of Transport had not worked out a detailed policy with respect to the new system of exemptions and there was only a vague idea that the existing arrangement was not acceptable.

The Department of Transport witness before the Commission, Captain F. S. Slocombe, stated that the fears entertained by the Quebec District pilots at the time were unfounded. It was never intended to permit American pilots to pilot vessels in wholly Canadian waters, i.e., below St. Regis on the St. Lawrence, the only intention was to remove the discrimination regarding exemptions granted to United States lake vessels.

*Recommendations Received*

The pilots favoured compulsory pilotage but they stated that, although their brief recommended the *status quo,* even if compulsory pilotage was established, it would not change the situation since all non-exempt ships except a few very small vessels now take pilots. They did not recommend that the exemptions now given should be withdrawn because the small lake vessels are disappearing and the situation as far as schooners are concerned is improving as their Masters increase their qualifications. They urged, however, that in view of expanding traffic any extension of the present exemptions would constitute a great danger to the safety of shipping. In their opinion, too many exemptions have already been granted but, for the above-mentioned reasons, they did not wish to enter into an argument and would be satisfied to maintain the *status quo.*

The Clarke Steamship Co. Ltd. recommended that the exemption for coastal ships be increased to cover British registered ships under 4,000 net registered tons, pointing out that the 2,000-ton limit was established many years ago when it represented the tonnage of the coastal vessels of the time but that this limit is no longer realistic since coastal ships have increased in size.

The Dominion Marine Association recommended, and has been recommending for many years, that exemptions be extended to all regular traders. This was the object of the brief which they presented to the Minister in 1960 and which was vigorously fought by the Pilots' Federation.

For the Commission's views on this matter, reference is made to Part I, pp. 233 and ff. and General Recommendations 22 and 23.

## 3. ORGANIZATION

### (1) Pilotage Authority

The Pilotage Authority is the Federal Minister of Transport and its representative at District level is the Supervisor of Pilots. In matters of internal organization the Authority is assisted by the Pilots' Committee and for some years has had the assistance of an Advisory Committee in matters of policy.

The interdependency of the Quebec District with the other St. Lawrence Districts is covered neither in the Canada Shipping Act nor in the District By-law but the *de facto* situation was recognized in 1960 by the appointment of a Regional Superintendent to oversee all three St. Lawrence Districts (vide Part I, pp. 49 and ff. and General Recommendation 9).

### (2) Supervisor of Pilots

The officer-in-charge locally is called the Supervisor of Pilots. In sec. 3 of the By-law he is referred to as the Superintendent but a 1961 amendment defines the Superintendent as the Supervisor. Since the Minister of Transport is the Pilotage Authority in the Quebec District, the Supervisor is a Department of Transport officer. The Department of Transport establishment for the District (Ex. 1146) lists two posts of supervisor: a "District Supervisor of Pilots" in Quebec City and a "Supervisor of Pilots" at Les Escoumins.

The term "District Supervisor of Pilots" is neither defined nor used in the Pilotage By-law. If the By-law is taken literally, it would mean that the District Supervisor (like the Regional Superintendent) has no power, but is simply a Department of Transport officer, and that the officer-in-charge is the Supervisor of Pilots at Les Escoumins. If the definition in the By-law is given another interpretation, there are two Superintendents, both in charge of the District of Quebec and both with, *inter alia,* disciplinary powers.

To complicate the matter further, there is no Civil Service grade under the title "Supervisor of Pilots" on the Department of Transport establishment and the position of officer-in-charge at Les Escoumins is graded as "Superintendent of Pilots 1". The District Supervisor is graded as "Superintendent of Pilots 3" and the Regional Superintendent as "Technical Officer 6".

The Department has recognized that the nomenclature of departmental officers charged with the supervision of pilots is quite confused. While the jurisdiction of the Supervisor has never been queried, it appreciates that clarification is desirable. It had been felt that the definition of "Superintendent" as "the Supervisor of Pilots or a person authorized to perform any of the functions of the Supervisor" was wide enough to permit some latitude in the authorization to perform functions. The Department now feels that for the next incumbent at Les Escoumins it would be preferable not to use the title "Supervisor" (Ex. 1456(x)—Department of Transport letter dated November 1, 1965). For further comments, vide Part I, pp. 289 and ff.

Mr. Albert Hamel held the office of District Supervisor at Quebec from 1936 to 1961. His appointment was a promotion in the office where he had worked as a clerk since 1916. He had no mariner's qualifications nor any sea experience but was well versed in the affairs of the District.

Captain Henri Allard replaced Mr. Hamel on September 25, 1961, and held the office until May 1, 1963, when he resigned to become Harbour Master at Quebec. Captain Allard held a Master's Foreign-going Certificate dated 1958.

He was replaced by Capt. Guy LaHaye who held the office until March 28, 1965, when he was promoted to Regional Superintendent of Pilots. Until Aug. 22, 1966, when Capt J. G. Chouinard was appointed, the post remained

vacant because of the added requirement that the candidate must hold a Master's Certificate of Competency. The first competition advertised failed to produce a qualified candidate (Ex. 1456(x)—Department of Transport letter October 5, 1965).

The pilots stated that their relations with the District Supervisor were always good but they found that he had no real authority and that any matter of importance had to be decided by superior officers in Ottawa (Part I, p. 500).

Captain Allard said that his main function as Supervisor was to supervise the whole District and to make sure that the pilotage service was conducted efficiently and in accordance with the regulations. He also was responsible for the administration of the central office at Quebec and the sub-station at Les Escoumins, which involved the administration of personnel and the despatching of pilots.

As the local representative of the Pilotage Authority he not only handled the internal affairs of administration but was also the intermediary between high ranking officers of the Department of Transport at Ottawa and the pilots on matters that could not be settled locally. Before the pilots discussed any matter with Ottawa, they normally consulted him. He also attended to disciplinary matters with the aim of maintaining a high standard of administration and service.

When he took office he informed all concerned that he wished to settle locally everything possible within his terms of reference and in practice it worked out that way. He did not recall any occasion when the pilots contacted Ottawa direct without first informing him what they were doing.

During his time in office, he always had the co-operation of the Board of Directors of the Pilots' Corporation. Neither the Board nor the pilots' representatives ever objected to any disciplinary measures that he proposed but on the contrary they sometimes insisted that disciplinary measures be taken.

He stated that on one occasion, at least, he settled a dispute between the pilots and the Pilotage Authority in Ottawa. This concerned problems connected with the administration of the sub-station at Les Escoumins. The pilots had told him the substance of their complaint and of their representations to Ottawa. After meeting the pilots and carrying out his own investigation, he made what he considered the proper recommendation to the Minister. The Authority followed his advice.

However, officials in Ottawa did not always consult him and, at times, dealt directly with the pilots. For instance, it was through the Pilots' Committee that he learned about the proposal to charge part of the District expenses against the pilots' revenue (vide p. 357). The problem arose before his time but he was not consulted and, therefore, had no opportunity to make a recommendation to Ottawa. Hence, he was was not involved.

Captain Allard knew of the 1962 work stoppage but he had not been consulted by the pilots beforehand. They dealt directly with the Department in Ottawa and the Pilots' Committee simply informed him a few days in advance that general meetings were to be held. He took no part in the argument and convened no meeting with the Pilots' Committee to discuss the matter because he had been infomed by his superiors that they were attending to the matter. In fact, the problems involved were beyond his jurisdiction and had not originated at the level of the local authority.

The former Supervisor, Mr. Hamel, stated that at one time there were two separate despatching offices in Quebec, one for the Montreal District and one for the Quebec District. Later on, these two offices were merged to form one pilotage office which was entrusted with the duty of despatching pilots of both groups under the Supervisor's authority. This integration did not extend to financial matters and the Supervisor of each District continued to look after the collection and distribution of dues earned by the pilots of his District (Part I, p. 481).

Re the powers of the Pilotage Authority and the Supervisor over discipline and inquiries, vide Part I, C. 9.

As of May 1, 1969, the District Supervisor is assisted in the performance of his duties by a staff of 18 (not counting the 13 launchmen, engineers, and deckhands operating the pilot vessels at Les Escoumins nor the considerable staff of Marine Traffic Control) divided between the two pilot stations as follows:

Quebec pilot station:

1 District Supervisor of Pilots
3 clerks (administrative)
1 stenographer
9 clerks (despatchers)

Les Escoumins pilot station:

1 Supervisor of Pilots
4 clerks

These offices are now operated 24 hours a day on a year round basis. With the advent of the Marine Traffic Control System, the signal clerks' positions were abolished (Ex. 1538(h)).

### (3) Pilots' Committee

The official liaison between the Pilotage Authority and its pilots is the Pilots' Committee which, as stated in sec. 5 of the General By-law, is to be composed of six members "appointed annually by the pilots" but the electoral process is not indicated.

There has never been an election. The practice is for the Board of Directors of the pilots' organization to act as the Pilots' Committee *vis à vis* the Authority. Prior to the formation of the Corporation, the Association's Board of Directors was *ipso facto* the Pilots' Committee; now the Committee is the Corporation's Board of Directors.

Apart from the question of the legality of such a committee (Part I, pp. 82 and ff.), this creates a triple legal problem in that (a) the Corporation's Board of Directors is composed of seven persons, while the Pilots' Committee created by the By-law is composed of only six; (b) the By-law requirement that the members of the Pilots' Committee be appointed annually is not observed; and (c) the Committee is not representative because the Corporation membership does not include all pilots. In fact, the Pilots' Committee is now composed of the seven-member Board of Directors of the Corporation, four of the Corporation Directors are elected to hold office for two years and the post of past President is automatically filled without election. Only the President and Vice-President are elected annually.

The Pilotage Authority is aware of these facts because the composition of the Pilots' Committee is included in the Supervisor's annual report (Ex. 534). These irregularities have never been questioned. The Pilots' Corporation has adopted the attitude that the number prescribed in sec. 5 of the By-law is unimportant and that it should be deleted; what counts is to ensure that there is a minimum representation. They added that the Pilotage Authority has never objected and that there was no prejudice against anyone (Ex. 1461 (l)).

The Pilotage Authority explained that in 1961 the intention was to re-write the By-law, or at least make a consolidation, and at meetings with the Pilots' Committee to discuss possible changes it was agreed that an amendment would be made in the procedure for electing committees so that the Directors of the Quebec Pilots' Corporation would automatically be the Pilots' Committee. The pilots claimed that the Corporation could represent the pilots more adequately since it already looked after their interests to a greater extent than the Pilots' Committee appointed under the By-law. The Department of Transport informed the Commission May 6, 1966, that in the rather confused situation which has existed since 1961 and in the absence of a local Supervisor for a large part of that time, the matter was lost sight of but has now been brought to the attention of the Corporation with the aim of having the By-law in its present form observed pending amendment (Ex. 1466 (i)). As of April 1969, this By-law provision has not as yet been amended and in the annual reports the Committee membership is still shown as being composed of the full slate of the Board of Directors of the Pilots' Corporation.

Occasionally, some pilots have dealt directly with the Pilotage Authority either in Ottawa or Quebec. Captain Allard said that when pilots came directly to him he always referred them to the Pilots' Committee before taking any decision, pointing out that such a practice should be discouraged since it would be impossible for him to deal with each pilot individually. More often than not the question was settled at Committee level.

The Pilotage Authority has frequently consulted pilots individually and directly about proposals involving major changes of procedure without going through the Pilots' Committee. For instance, in 1959 and 1960, it sought the pilots' opinion about the advisability of moving the eastward pilot station from Father Point to a point on the north shore closer to Quebec. In this case, the Pilots' Committee was asked for a recommendation but only after the majority of the pilots had pronounced themselves in favour of the proposal.

The Supervisor, however, is not necessarily the liaison between the pilots and the Pilotage Authority and there is nothing in the By-law to prevent the Pilots' Committee from dealing directly with the Pilotage Authority in Ottawa as it has often done when it knew that the point was beyond the power of the Supervisor to decide, e.g., matters of policy and tariff revision. Nor does the By-law require the Pilotage Authority to deal with the Pilots' Committee through the Supervisor. In fact, he has been by-passed many times, e.g., the issue which led to the 1962 strike, i.e., the proposal to make the pilots pay part of the District expenses, was raised by the Deputy Minister of Transport in a letter addressed to the Pilots' Committee.

The Supervisor normally seeks the Committee's advice before taking decisions of importance regarding the internal organization of the service, such as despatching procedure. Captain Allard, for example, consulted the Committee before advising the pilots to refuse to board vessels at Les Escoumins without an accommodation ladder as required by a Notice to Mariners. He had ascertained beforehand that all the shipping agents were aware of the requirement, which had been in effect for many years, and had also consulted his superiors in Ottawa.

When the Supervisor wishes to issue general instructions or information to the pilots, he does so through the Committee which, in turn, publishes the material in the Corporation bulletins which are distributed to all pilots (Ex. 688).

The Pilots' Committee is very active. During the last six years it has been instrumental in bringing about most of the changes made in the organization of the pilotage service and in the qualifications for pilots. These activities will be studied later.

In General Recommendation 25 (Part I, p. 549) the Commission has recommended that the pilots of each District automatically form a Corporation, and that the function of the Pilots' Committee should be entrusted to that

Corporation (hence, to its Board of Directors). As to the extent of its right to represent each individual pilot and the right of the Pilotage Authority to deal directly with pilots individually, reference is made to Part I, p. 551.

### (4) Advisory Committee

In the Quebec District, the Advisory Committee was short-lived. The idea of forming a pilotage Advisory Committee was first proposed by the Shipping Federation. The Pilotage Authority approved and agreed to try it out. It was realized that the central authority was overburdened and that there should be some kind of decentralization. It was felt that the Advisory Committee should be a local body which would resolve problems on the spot to save headquarters from being continually involved in local matters. The practical aspect was that if both the shipping interests and the pilots were in agreement on a matter which did not involve public funds there would be no reason for the Authority in Ottawa to disagree. The Federation had recommended a double system, i.e., a top level Advisory Committee in Ottawa and a local committee in each District. It was decided, however, not to proceed with the larger issue, although the possibility was not ruled out altogether, but to experiment at the District level. In 1958, these committees were set up by the Pilotage Authority which appointed representatives in the main Districts. The pilots' representatives were the members of the District Pilots' Committee. The shipping interests were allowed to name their own representatives and were free to change them from time to time. The Chairman was the District Supervisor or Superintendent. The terms of reference were the same for all the Districts where the system was tried.

The underlying thought was that this Advisory Committee would serve as a continuing liaison between the pilots and the shipping interests leading to closer discussion and better understanding. Captain F. S. Slocombe of the Department of Transport said this aim had been achieved to a certain extent. He was aware that the pilots had met with the Shipping Federation occasionally when the need arose in connection with mutual problems and that the two groups had made joint representations, but the Authority had hoped the local Advisory Committee would provide a more permanent arrangement which would require both sides to meet more frequently and to exchange views.

It was clearly understood that the Committee was strictly advisory and had no legal powers to settle disciplinary or other questions (vide terms of reference of Halifax Committee, Part III, pp. 200-201).

In Quebec it was known as the *Local Pilotage Committee,* and it concerned itself mostly with disciplinary problems, but occasionally dealt with other matters, e.g., when Mr. Cumyn, Director of Marine Regulations, met the Committee October 21, 1959, and discussed the contentious question of abolishing the special service pilot system and proposed moving the eastern boarding station.

These Advisory Committees were successful only when they gave advice on non-contentious matters. In Halifax, for instance, the Committee is still working well giving advice about aids to navigation or improvements in the pilotage service (Part III, p. 200). In British Columbia, the Committee degenerated after a few meetings into a conciliation board which, in the opinion of the Pilotage Authority, is not working satisfactorily (Part II, p. 64). In Montreal and Quebec, the Committee tried to make itself responsible for discipline and proved quite unsuccessful as a quasi court.

Referring disciplinary matters to the Committee was the Pilotage Authority's idea. By that time disciplinary problems were causing so much difficulty that the Authority thought it would be useful to have the opinion of an organization which represented all the interests concerned, but the Committee forgot that its rôle was merely advisory. Its sessions developed into irregular trials and the experiment was a failure.

The Committee usually reached natural and correct conclusions on disciplinary matters but the difficulty was that the Authority in Ottawa had to base its decision on legal and admissible evidence only, and when the case was dealt with in Ottawa it was frequently found that the evidence was not sufficient. In such cases the recommended disciplinary measure could not be imposed. The Pilotage Authority had hoped that this Committee would be an impartial board which would give an absolutely unbiased recommendation. It was found, however, that in some cases the Committee divided on straight lines of interest, the pilots' representatives defending the pilot and the shipowners' representatives voting against him.

In Quebec, the members of the Committee became dissatisfied when they found that their decisions were not followed and they felt that they were ignored. It would appear, however, that the Chairman of the Committee was always informed of the final decision but not the members individually.

The procedure for convening the Committee was very informal. The Regional Superintendent, when so requested or when he deemed fit, requested the Committee to sit and the Shipping Federation, the Dominion Marine Association and the pilots then sent their representatives. In disciplinary cases they studied the reports and the facts gathered during the various investigations. The pilots involved attended and were further examined.

From the minutes of the meetings (Ex. 1321) it appears that the advisory Committee met on only four occasions: May 27, 1959, July 7, 1959, October 21, 1959 and March 3, 1960. Except for the discussion with Mr. Cumyn at the October 21 meeting, the only problems dealt with were disciplinary. To illustrate the procedure and the difficulties encountered it is instructive to analyze their activities. For the case of Pilot No. 70's alleged drunkeness, vide p. 397 and Part I, p. 334.

On July 7, 1959, the Board was composed of three shipping representatives including Captain Matheson of the Shipping Federation of Canada, five members of the Pilots' Committee and two Department of Transport representatives, the Superintendent of Pilotage, Captain D. R. Jones, and the Quebec District Supervisor, Mr. Hamel. They met to examine the conduct of the two pilots involved in the collision between the S.S. *Argyll* and M.V. *Sunima* which had been the subject of a preliminary inquiry. In his report the investigator mentioned that there appeared to be no extenuating circumstances to mitigate the blame for the accident which had to be shared by the two pilots involved. The collision occurred May 27, 1959, at night, between Lauzon and the west end of Orleans Island under ideal conditions: no traffic, fine weather and clear visibility. The report indicated that the two pilots had not been paying attention to the course steered by their ships. One of the pilots stated in defence that he had been overworked at the time and was tired but when his record was produced it was shown that he had had two clear days off duty before boarding his vessel. The Committee was unable to reach a decision on what recommendation to make. The pilots' representatives declined to make any statement regarding the degree of blame to be attributed to either of the pilots concerned, while the shipping representatives took the view that the shipowners had a right to expect a much higher standard of efficiency. The only recommendation came from the Chairman who suggested that a suspension of long duration be imposed. Saguenay Terminals Limited cancelled the appointment of both pilots as their special pilots. After receiving the Advisory Committee's report the Pilotage Authority decided to postpone disciplinary action pending civil litigation. The court's decision was that only one ship was responsible for the accident but by that time disciplinary action was time-barred. For comments, vide Part I, p. 351.

On October 21, 1959, the Committee met again to deal with three cases. Only one member of the Shipping Federation attended, three Department of Transport officers and four of the Pilots' Committee.

The first case was a complaint received from the Master of the T.E.V. (Turbo Electric Vessel) *Beaverdell* concerning the physical fitness of one pilot who was alleged to have been under the influence of liquor when he went to board the vessel off Father Point at 2337 hrs., August 21, 1959. The Master refused to allow the pilot on board, whereupon the pilot reported to the officer-in-charge at Father Point, Captain Desrosiers, for further instructions. Captain Desrosiers did not see fit to interview the pilot personally and told him to return to Quebec. He stated later that by the way the pilot was speaking over the telephone there was no doubt that he was then in a drunken condition. Captain Desrosiers' testimony was the sole evidence available since the Master who had made the complaint had departed. The pilots' representatives on the Committee recommended a fine of possibly $200 while

the shipping representative, with the concurrence of the Department of Transport representatives, suggested a suspension. The Pilotage Authority concurred in the recommendation of the majority but legal advice was received to the effect that a charge could not be proven for lack of evidence and, therefore, the end result was that the pilot was merely warned.

The second case concerned a similar charge made against another pilot by the Master of S.S. *Tronstad* who had refused the pilot at Father Point May 9, 1959, the charge being made in a letter dated May 28. In this case, the pilot concerned had been seen by Captain Desrosiers who stated that when the pilot reported to his office some time prior to boarding he had noted that the pilot was not normal and was under the influence of liquor. This opinion was corroborated by two crew members of the pilot boat. However, there was evidence to the contrary from a fellow pilot and the Master of the pilot boat. In view of the conflicting evidence the Advisory Committee recommended that the pilot be given the benefit of the doubt. This recommendation was concurred in.

For comments on the situation disclosed by these two cases, vide Part I, p. 429.

The Committee also studied the circumstances of the grounding of M.V. *Marquette* June 28, 1959, near Cape St. Joseph, which also had been the subject of a preliminary inquiry. The local Pilotage Committee considered the report of the inquiry and had the pilot involved appear for questioning. It was stated that visibility was poor, radar was available but not in use, nor was the echo sounder. The probable cause of the accident was failure to steer a correct course. The pilot had ordered an alteration of course shortly before entering Coudres Passage, but neither he, nor apparently the officer of the watch, had taken the precaution to see whether the course alteration had been properly carried out. The Committee was unwilling to accept the pilot's explanation that he had not requested the use of radar because he feared a refusal. It attached no blame to him for not reducing speed under the circumstances because the variable currents in Ile aux Coudres Passage make this generally inadvisable. In view of the pilot's previous excellent record and the joint responsibility of the ship's officer on watch, it recommended no penalty except a severe reprimand. This advice was concurred in later by the Authority.

This Committee also met March 3, 1960, to investigate the stranding of S. S. *John E. F. Misener* on Lark Reef November 6, 1959. The Committee was composed of the Regional Superintendent as Chairman, one representative of the Shipping Federation of Canada, one of the Dominion Marine Association and three pilots. The mandate of the Committee was merely to assist the Pilotage Authority:

(a) to find the reasons for, or causes of, the casualty;

(b) to find if the casualty was due to any misconduct or neglect by the pilot;
(c) to give the pilot an opportunity to be heard;
(d) to recommend disciplinary action if thought advisable.

The Committee was furnished with a copy of the preliminary inquiry and Captain S. Morrison, who had presided over the preliminary inquiry, attended the meeting in order to give further explanations if desired. The pilot attended with his legal counsel and there was also a counsel for the Department. Mr. John E. F. Misener was also present as an observer.

The Committee came to the conclusions that, if the pilot had made intelligent use of the aids at his disposal, ample warning of danger would have been received and that the cause of the accident was a sudden alteration of course of which the pilot was unaware.

The finding of the Committee was that the accident was caused in part by the negligence of the pilot, but it observed that it was not unreasonable for the pilot to rely to some extent on the officer of the watch and the Master to bring to his attention any suspicion that anything untoward was happening. Under these circumstances they recommended that as a disciplinary measure a severe letter of reprimand be sent to the pilot.

The Minister ordered a formal investigation (p. 367). The judgment, which was rendered November 6, 1959, blamed the pilot primarily for his failure to make proper allowance for the north-easterly tidal set that existed there at the time and that caused the ship to deviate; secondly, for his failure to use shipborne aids to navigation except radar which was not used efficiently. The Court suspended the pilot for three months.

### (5) Regional Superintendent of Pilots

The Federal Minister of Transport has a dual function. In some Pilotage Districts he is the Pilotage Authority; in all Pilotage Districts (including those of which he is Pilotage Authority) he has responsibilities as Minister of Transport in the application of the Canada Shipping Act. Within the Department of Transport there are various groups of officials to advise the Minister in his several capacities.

In 1959, the office of Regional Superintendent of Pilots was created. The Superintendent is located in Montreal as the regional representative of the Department of Transport on pilotage matters in the St. Lawrence River Districts. He is not an officer of the Pilotage Authority and does not possess any authority. His function is recognized neither by the By-laws of the Districts concerned nor by any formal delegation of power from the Pilotage Authority. He is the local Department of Transport adviser to the Supervisors of the three Districts concerned, and the liaison officer between them and the advisers to the Pilotage Authority in the Department of Transport in Ottawa.

In addition, his services are used to relieve the District Supervisors of the task of carrying out informal investigations into casualties and complaints that are normally investigated at District level by the Supervisor prior to forwarding the pilots' accident reports or complaints to the Pilotage Authority. At times, his services are used by the Minister of Transport to hold preliminary inquiries under sec. 555 C.S.A. (Ex. 1461(b)) (vide Part I, pp. 338 and ff.).

Since this office was created in September 1959, its incumbents have been Captain Jacques Gendron, September 1959, to December 1961; Captain W. A. W. Catinus, June 25, 1962, to April 12, 1964; and Captain Guy LaHaye, the present Regional Superintendent, who was appointed March 29, 1965 (Ex. 1461(b)).

The vacant periods between appointments are due to the fact that this office is a Civil Service post and is filled by a Public Service Commission competition.

In the competition notice of February 1962, the position is entitled "Regional Superintendent of Pilots, Nautical and Pilotage Division, Marine Regulations Branch, Department of Transport, Montreal". The duties are described as follows:

> "Under direction, to exercise general supervision over all aspects of pilotage and marine reporting administration in the various pilotage districts of the St. Lawrence River from Kingston, Ont., seaward to Les Escoumins, P.Q.; to be responsible for the efficient operation of all phases of this work, including the operation of pilot boats, despatching of ship's pilots, reporting movements of vessels, collection and disbursements of pilotage fees; to be chairman of committees appointed to examine candidates for Pilot's licences and to enquire into and make recommendations on various problems affecting efficient operation; to review pilots' casualty reports and submit memoranda thereon assessing the circumstances; to perform other related duties as required" (Ex. 542).

The Kingston District has since been removed from the jurisdiction of the Superintendent (Ex. 1461(b)). His office is in Montreal in the same building as the Montreal pilotage office.

Generally speaking, the Regional Superintendent is responsible for the pilotage efficiency of the Districts of Quebec, Montreal and Cornwall, and the co-ordination of work between the pilotage offices but he has no direct responsibility for administration in any District. He does not give any direct orders but always acts through the Supervisors. Captain Gendron added that, in fact, he had no authority over local Supervisors except on minor matters. His function was to meet with them, discuss their problems and decide matters which could be decided in the field. However, he would not review or reverse their decisions except on minor matters, such as changing the pilots' names on the list, allowing pilots time off or deciding minor punishments. The local Supervisors are not obliged to consult him about any of their decisions but, in fact, do so on many occasions.

Captain Gendron added that, on the other hand, his decisions were never final but were always subject to revision or reversal by the Authority in Ottawa. On major issues he always consulted Ottawa before coming to a decision. He was given permission in the middle of 1960 to replace on his own recognizance any pilots who had retired or died. He followed the established procedure, i.e., chose the first apprentice, held an examination, etc. But the decision to retire a pilot, whatever the reason, e.g., breach of discipline, was a matter for Ottawa to decide, as were all serious questions of discipline.

The operation of the Department of Transport pilot vessels comes under his jurisdiction but the only pilot vessels provided by the Department of Transport within his territorial jurisdiction are those at Les Escoumins.

He acted as Chairman of the District Advisory Committees while they lasted and as Chairman of the District Board of Examiners, which chooses candidates for apprenticeship and appraises the training progress of the apprentices.

His main responsibility is to relieve the Supervisors of the onerous task of investigating complaints, thus leaving them free for their other duties. An important part of his work concerns the investigation of complaints and casualties but his status, responsibilities and authority in this regard are not defined. Complaints are of many kinds: by a pilot about the erratic behaviour of small craft or about obstructions in the ship channel; by a Master who refuses the services of a pilot; by an agent who feels that a pilot has asked for unnecessary tugs; by the public about ships exceeding the speed limit; by Masters or agents about pilots being late.

Nor is the Regional Superintendent always informed about discussions between the pilots and the Authority in Ottawa. There have been occasions when the pilots went to Ottawa directly, by-passing both the Regional Superintendent and the Supervisor. For instance, the Superintendent was unaware that meetings were being held between the Montreal pilots and the Ottawa authorities about St. Lambert lock. He was not invited to participate nor was he consulted about the decisions and it was not until the pilots brought the Deputy Minister's letter to his attention that he learned what Ottawa had decided to do. As a rule, however, he is consulted by Ottawa, generally by telephone, before any decision is taken affecting pilotage on the St. Lawrence.

### (6) Department of Transport Personnel as Advisers to the Authority

Most of the responsibilities of the Minister as Pilotage Authority, (which includes his Deputy Minister, subsec. 2 (69) C.S.A.) are attended to on his behalf by the officers and employees of his Department, but there is

no legal delegation of power (except at the local level to the District Supervisor as aforesaid) and he remains the final authority. The departmental staff act both in an executive and an advisory capacity. It is a common occurrence to see the pilots and other interested parties proceeding from official to official within the Department and indeed succeeding in having decisions taken by one officer reversed by his superior. In this process they go as high as the Deputy Minister or the Minister, if necessary.

In 1958, the functions in the Department of Transport were redefined and pilotage was placed under the jurisdiction of the Director of Marine Regulations. The officer immediately responsible for the organization of pilotage is the "Superintendent of Pilotage", whose superior in the Directorate is the "Chief of Nautical and Pilotage Division". Before reaching higher levels, all pilotage questions normally have to go through this chain of command. There is no specific rule or clear cut division between what one may decide on his own and what must be passed to a higher level—it is all a matter of judgment.

The pilots are not satisfied with the efficiency of the Ottawa headquarters and with its attitude towards them. They complained bitterly about long delays and lack of authority at various levels. Their relations became more and more strained and dissatisfaction increased until after some threats they resorted to strike action in 1962.

Captain Gendron stated that he had noticed a marked tendency towards *centralization* which had begun long before his time and which he attributed to the appointment in both the Quebec and Montreal Districts of people inadequately qualified, e.g., when two clerks were promoted to Supervisor. They had neither sea experience nor any marine qualifications; they were not experts in pilotage and, when problems arose, they had to refer them to Ottawa. This situation was complicated as the number of ships on the River increased and in due course when the number of pilots also increased. Problems multiplied and the local situation caused Ottawa much more work than would normally have been the case if the local Supervisors had been adequately qualified. The result was more and more centralization. Captain Gendron pointed out as an example that, although the By-law was not amended, the Quebec Supervisor was advised not to exercise his power to award a fine up to $40. Little by little the Supervisor's authority was curtailed until he had no power at the local level and all local problems were resolved by others in Ottawa. Captain Gendron is of the opinion that sea experience as Master should be a pre-requisite for the post of Supervisor because when he was Supervisor he had under his orders 70 to 75 persons and, having been in charge of a vessel, he was able to command and make decisions. This sea experience also enabled him to understand and deal with the navigational problems the Supervisor is always confronted with. In addition, the Supervisor should be qualified to deal with various other problems of administration, e.g.,

tour de rôle, accounting and legal questions, and he should be able to conduct inquiries, to go on board vessels and appraise situations. In other words, he has to be a mariner with additional qualifications. This recommendation has since been implemented (vide p. 213).

Captain Gendron had also noticed less and less co-operation between the Authority, the pilots and the shipping interests. During recent years, the pilots on one hand and the administration on the other separated and drew further apart. This, he felt, was a serious problem and he urged that there should be closer co-operation between the three parties involved: Authority, pilots and shipowners.

The views of the Commission on centralization are expressed in Part I, p. 429, and General Recommendation 15.

## 4. PILOTS

### (1) Recruiting and Qualifications of Pilots

(a) *Number of Pilots*

As in most Pilotage Districts, the pilots' profession in the Quebec District is closed. Their permissible number is whatever the Pilotage Authority considers necessary to meet requirements and provide adequate remuneration for a reasonable workload. Years ago, their number was set by Parliament, (subsec. 18(5) of the 1873 Pilotage Act) which fixed the number of pilots for the District at a minimum of 150 and a maximum of 200. This provision was repealed in 1882 when it was provided that "the Pilotage Authority of the District of Quebec shall not grant any new licence to any person as a pilot until the number of pilots in the said District is reduced to below 125, which number shall never be exceeded after such reduction." The 1927 C.S.A. still carried this ceiling (sec. 423) but it was deleted in the 1934 version.

Since 1934, the Act has left it to the judgment of the Authority to determine by by-law the number of pilots, as had always been the rule for the Pilotage Authorities in the other Districts. In conformity with the statutory requirement, the Pilotage Authority for the District of Quebec, contrary to the illegal practice followed in other Districts, established in the By-law a criterion to determine the number of pilots. This criterion, except for a question of style, has remained unchanged since it first appeared in the District By-law of 1928 (Ex. 1448) of which sec. 24 provided that the number of pilots was to be determined "on the basis of 50 pilots for each 3,500 trips per annum". Sec. 4 of the existing By-law prescribes that the number of pilots "may be approximately one pilot for every 70 trips per annum" (vide Part I, pp. 255 to 258). However, despite the fact that this criterion was repeated in every new version of the By-law after 1928, it has since been disregarded for many years.

During the years of depression, World War II and those immediately following, the number of pilots greatly exceeded requirements so that: (a) the individual pilot's income was very low, depite the surcharges imposed during the war years; (b) the apprentices had to serve an apprenticeship of as many as 15 years before they were called into the service. Traffic had decreased abruptly while the number of pilots was reduced only through normal attrition, deaths, retirements, etc. In 1946, 51.2 effective pilots did an average of 54 trips; in 1948, 52.8 effective pilots did 55.4 trips.

From 1949 on, however, traffic increased steadily; from 1948 to 1958 inclusive, just before the opening of the Seaway, there was an increase of 125%.[2] Since then the increase has been constant.

The criterion of 70 trips per pilot per year was attained in 1949 and was soon passed. In 1954, the average workload was 83.5 trips per *effective pilot,* 80.06 in 1956, 92.3 in 1958. According to the statistics contained in the Pilotage Authority's annual reports, from 1960 to 1964 the workload for those years per *effective pilot* was respectively, 99.4, 102.8, 105, 105.7, 107.6 trips.

The following comparative table for the years 1955 to 1968 inclusive shows what the strength was in year pilots, their average workload and what the strength should have been according to the By-law criterion:

| Year | Actual Strength in Year Pilots* | Number of Trips (Assignments) | Number of Trips per Year Pilot | Required Strength according to By-law Criterion |
|---|---|---|---|---|
| 1955 | 64.6 | 5,647 | 87.4 | 80.7 |
| 1956 | 70.1 | 6,114 | 87.2 | 87.3 |
| 1957 | 68.6 | 5,951 | 86.7 | 85.0 |
| 1958 | 68.5 | 6,172 | 90.1 | 88.2 |
| 1959 | 73.3 | 7,298 | 99.6 | 104.3 |
| 1960 | 75.4 | 7,477 | 99.1 | 106.8 |
| 1961 | 76.8 | 7,513 | 97.8 | 107.3 |
| 1962 | 77.0 | 7,575 | 98.4 | 108.2 |
| 1963 | 76.8 | 7,659 | 99.7 | 109.4 |
| 1964 | 79.2 | 8,607 | 108.7 | 123.0 |
| 1965 | 85.7 | 9,044 | 105.5 | 129.2 |
| 1966 | 85.2 | 9,556 | 112.2 | 136.5 |
| 1967 | 86.0 | 9,166 | 106.6 | 130.9 |
| 1968 | 87.5 | 9,163 | 104.7 | 130.9 |

*For the meaning of "year pilot" vide p. 117.
SOURCES: Tables pp. 116 and 118.

[2] These figures are computed from information obtained from Table 9 and Table 10 (pp. 88 and 90 English version) of the Brief of the Federation of the St. Lawrence River Pilots.

The Pilotage Authority tried to explain by saying that the By-law criterion was never strictly adhered to and the word "may" was interpreted as permissive, i.e., allowing flexibility of application. Furthermore, it expressed the opinion that another interpretation would not be within the bounds of practical possibility because of the variation in traffic from year to year and the impossibility of reducing the number of pilots if traffic fell off in subsequent years.

It would also be necessary to define the term "trip" as a unit of measure. The term is not defined in the By-law; from the context it would appear that it means here one pilotage performed irrespective of the distance involved (vide p. 113).

Although the criterion was retained in the 1957 By-law (despite the fact it was not being applied), it appears that no one took it seriously. The pilots were not interested because only seventy trips per pilot would reduce their remuneration; the ship-owners were aware that if the criterion were applied there would be a demand to increase the tariff; the advisers to the Pilotage Authority felt that because conditions had changed greatly since 1928 seventy trips no longer represented what should be the normal workload for a pilot. The Pilotage Authority expressed the opinion that the formula establishing the number of pilots should be deleted when the By-law was rewritten, as was done when the Montreal District was divided at Three Rivers and their former criterion became obsolete. The Authority also stated that if anyone had insisted on the strict application of the formula in the Quebec District it would have been removed (Department of Transport letter dated November 4, 1965, Ex. 1461(d)).

Despite the By-law entitlement at that time for a much larger number, the pilots actually experienced great difficulty with the Authority in getting their numbers increased even slightly and each time the question arose it proved to be a most frustrating experience for them. In 1962, they felt that their workload was too heavy and requested the Authority to increase the establishment by at least four. When they were refused, they made this request one of the recommendations in their Brief to this Commission. They later reduced the request to three because the licence of an absentee was forfeited automatically, thus allowing for his replacement by an active pilot.

This question had first been studied in the fall of 1962 by the Committee of Admission and Promotion of the Pilots' Corporation. The request was made at the local level, i.e., to the local Supervisor who referred it to the Regional Superintendent, Captain Catinus. Both were in favour of it.

In their letter dated December 29, 1962, the pilots listed three reasons to support their request:

1. One of the four pilots would be a replacement for a licensed pilot who had been unable to pilot for the previous three years on account of illness.

2. The second pilot would fill in advance a vacancy that was about to occur during the navigation season. The letter pointed out that it was preferable to take a pilot on strength at the beginning of the season.
3. The other two pilots were justified by the increase in traffic in 1962 and the level expected in 1963 (Ex. 705).

The question was also studied at a meeting of the Board of Examiners, although this was beyond their jurisdiction. The Department representatives on the Board of Examiners were also in favour but the pilots were unable to furnish the Department with any statistics. They explained that it was too much work to compile them without the necessary equipment. They had had an unsatisfactory experience in 1960 when, after considerable effort, they checked the Department's figures and compiled their own, and found the result of their efforts was nil except congratulations for the good work done.

This had been the first request for more pilots since 1960 when their number had been increased from 75 to 77, also after long discussions and negotiations.

When no satisfaction was received, the President of the Pilots' Corporation together with the President of the Committee of Admission and Promotion, went to Ottawa to meet with the Pilotage Authority's advisers, Mr. Cumyn and Captain Jones (Ex. 705). After discussing the matter at length, further explanations were requested. These were furnished April 22, 1963. In reply, a letter from the Minister, dated June 10, 1963, stated that their request was unwarranted and that the overload that they were complaining about could be cured by dealing with pilots' absenteeism, of which seven cases were listed. On July 10, 1963, the pilots replied to the Minister pointing out that the necessary information regarding these absentees was available in the Department's files in Ottawa. Some absences were due to illness and the medical certificates were in the hands of the Authority; in other cases, the pilots were not really absent on a yearly basis because they made up their turns later. Only after further meetings with the Pilotage Authority's advisers and with the Minister in 1964 was part of the requested increase granted: two additional pilots were allowed. However, by that time the pilots were requesting a further increase of three or four and further representations were being made.

At the Commission's hearing in September 1964, Captain F. S. Slocombe pointed out that before yielding to the pilots' request the Pilotage Authority had to be convinced that the requested increase in number was justified from the point of view of workload. The contentious points were still what was considered work and whether average figures were acceptable. Captain Slocombe was far from convinced that even the increase of two that had

been granted was warranted and had even graver doubts about the others. However, the pilots' repeated representations bore fruit and their number was increased to 82 on February 1, 1965, and to 86 on April 8, 1965. At the end of 1968 the establishment was 88 (vide Table p. 118).

Section 4 of the By-law conveys the idea that the expression "number of pilots" means what is known in other spheres of activity as a "personnel establishment", i.e., a predetermined number of people which may be modified from time to time according to requirements and which need not coincide with the actual number on strength but implies that vacancies are automatically filled as they occur unless the established number is reduced by amendment.

The wording of the whole of section 4 conveys this concept as did the language used by all parties during their testimony.

In a letter dated November 4, 1965 (Ex. 1461(d)) the Pilotage Authority stated that this is not the practice, that there is "no set establishment at any particular time" and, therefore, the departure of a pilot does not create a vacancy. As a result of the centralization of pilotage administration in Ottawa, the advisability of appointing a new pilot has to be considered each time on its merits by the Ottawa HQ according to the prevailing situation, even if it is simply a question of filling a vacancy. The Authority does not set an establishment in principle but decides each individual case separately.

Captain Gendron stated that, as Regional Superintendent, he finally succeeded in obtaining authority to fill vacancies as they occurred without seeking a decision from Ottawa but this privilege was not extended to the District Supervisors and was never made automatic.

In 1960, when the pilots proposed an increase in their number from 75 to 77 the Pilotage Authority suggested a new system which would have frozen the pilots' strength at the so-called "saturation point" of 75 and established a reasonable workload by increasing the number and type of vessels exempted from the compulsory payment of pilotage dues. This was an indirect acknowledgment by the Pilotage Authority that safetywise the scheme of exemptions was unrealistic; that if it were not for the question of revenue, many vessels should be exempted.

Mr. Cumyn, Director of Marine Regulations, who advanced the proposal stated that at the time the Dominion Marine Association was pressing the Department for some measure of exemptions in the Quebec District and the Department was considering whether anything could be done to meet their request. In his discussions with the pilots he stated that he merely threw out the idea as a thought but not a plan. The suggestion came entirely from him as a possible solution, not as a policy of the Pilotage Authority but simply a possible course of action. This proposal was an entirely novel concept in pilotage.

The concept was that the Department would grant partial exemptions and that these would encourage Great Lakes ships to do without pilots which, in turn, would result in a reduction of the pilotage workload. The exemptions would be balanced against the number of pilots on strength and, when their number was reduced by natural causes, exemptions could be increased. The governing factor was to maintain the level of the pilots' income. When Mr. Cumyn proposed this plan to the pilots, he stated that he had no intention of granting such exemptions to United States ships. However, the idea was strongly opposed by the pilots' representatives and was not pursued (Ex. 683).

*COMMENTS*

The foregoing is a striking example of the profound misapprehension of the rôle of legislation in the organization of pilotage as provided under Part VI of the Canada Shipping Act, and a clear example of inefficient and time-consuming administration resulting from unwarranted and excessive centralization.

The pilots' request was well founded both in law and in fact. In law, the Pilotage Authority had no alternative but to grant the request when it was established that the aggregate number of trips performed by pilots in the previous year would, by the By-law criterion, warrant the requested increase unless it were clearly established that the peak reached was merely a passing phenomenon, which was not the case.

The Pilotage Authority did not seem to realize that in the discharge of its administrative duties it was bound like anybody else by the existing legislation, whether it consisted of provisions contained in a statute or in its own By-law.

It is true that the By-law criterion was outdated. However, this is not a valid reason for not applying legislation but it does warrant an amendment —a relatively simple procedure as far as regulations are concerned. However, until an amendment is approved, it is the mandatory executive duty of the Pilotage Authority to apply existing legislation.

The explanation given by way of justification to the effect that the criterion was only permissive in view of the use of the word "may" is not valid. To give the text such an interpretation would amount to saying that when the Pilotage Authority made the rule and the Governor in Council sanctioned it, they had no intention that the provision would mean anything. The word "may" in such a context is there to give some flexibility in the implementation of the criterion; it means more or less in order to give the Pilotage Authority some discretion within the bounds of reason; but the word "may" is not there to negate the purpose of the criterion.

The pilots' request was in fact well founded and eventually was granted. They succeeded after three years of negotiations which cost much effort and

money and caused unnecessary loss of time at all levels. All this could have been easily avoided if the Ottawa headquarters had limited their involvement to the definition of proper policies that would have been embodied in the District regulations and had left their actual implementation to the responsible officer at the District level.

For further comments see Part I, pp. 255 and 258. Furthermore, the Commission has recommended that the requirement that the number of pilots be fixed by regulation be retained (vide Part I, General Recommendation No. 18, p. 514).

(b) *Recruiting and Apprenticeship*

Pilots are recruited by an elaborate apprenticeship system designed to assure a high standard of qualifications and skill. General education in navigation is assured by requiring (i) a basic general level of education, (ii) basic academic studies in navigation and (iii) practical experience in navigation. Local knowledge is acquired during the apprenticeship period; skill is acquired and appraised through a grade system.

The apprenticeship system for the training of pilots in the Quebec District dates back to the origin of organized pilotage. At the beginning there was strict apprenticeship. The apprentice was indentured to a master pilot and became a pilot after serving as an apprentice for a number of years and passing an examination before the Pilotage Authority. Soon two more requirements were added—a certain number of trips on the high seas "before the mast" and a certificate of competency. The latest requirements to be added were a basic education and theoretical studies in navigation. The apprenticeship system was retained despite the recommendation of the Robb Royal Commission that it be abolished in order to recruit experienced mariners as pilots (vide Part I, p. 252).

As ships developed and the art of navigation advanced, the nature and extent of candidates' qualifications became more demanding.

Up to 1961, the qualifications required of a pilot and the conditions of apprenticeship were established by the Pilotage Authority as it saw fit. In 1960, the pilots were re-organized into a corporation, the special pilot system was abolished and a system of grade pilots was created in lieu. From this time on the pilots played an active advisory rôle in establishing standards for both pilots and apprentices. The Pilots' Corporation set up a permanent committee of their own called the "Committee of Admission and Promotion" and entrusted it to do the necessary research and to recommend what might be done to ensure the selection of the best candidates, to obtain applicants with the highest qualifications and, at the same time, to improve the lot of the apprentices. The Committee was quite active and in 1961 the Pilotage Authority, acting on the recommendations of the pilots, brought about the basic changes they recommended. The general qualifications asked

of candidates, both in basic education and in navigation, were increased; the uncertainty of ever becoming a pilot was to a great extent removed; the Authority assumed an active rôle in the apprenticeship programme through a permanent Board of Examiners which was required to check the progress of the apprentices from year to year and to reject those who showed a lack of interest or lack of aptitude. The minimum duration of apprenticeship was reduced to three years but the training was intensified.

Until 1960, almost any young man with the faintest interest in pilotage, regardless of the extent of his education, could place his name on the list of candidates. All he needed was to be a British subject or a Canadian citizen at least 16 years of age with a basic knowledge of mathematics and of the French and English languages. The applicants were listed in chronological order as their applications were received without regard to their qualifications or aptitude. There was no discretion in this matter, it was automatic. A candidate's name remained on the list until it was his turn to be called or he attained the age limit of 30 when it was automatically struck off. Since there was no assurance of ever being called, the candidates put their names on the lists for both the Districts of Montreal and Quebec at the same time but, on the other hand, lost no opportunity to pursue some other occupation, with the result that when they were called most candidates were no longer interested or had failed to acquire the prerequisite qualifications to become an apprentice, including the possession of a Certificate of Competency as First Mate of a Home Trade steamship. The very length of the list was a discouraging factor for a serious candidate. Normally it took five or six years to be called but some candidates remained on the list for ten years and in one case fifteen years. At one time, the Quebec list contained 240 names of whom about 24 became apprentices and of those some 20 became pilots.

When pilot Roland Barras applied, he was still going to school at the age of 16. He was then far down on the list, around 160th. He applied for the Quebec District only. He was called for his apprenticeship about six years later and remained an apprentice for 16 years from 1930 to 1946 because few pilots were required during the depression and the war years.

In 1942, pilot Dussault asked the Superintendent to place his name on the waiting list for apprentices when he was a seaman aboard the coastal vessel S.S. *Sable Isle*. It was not until 1952 that he was called. Prior to that he had had no guarantee that he would ever be called on account of the age limit of 25 and also because, for a number of years, there was no need for additional pilots. After the war, an exception was made to the age limit for those who had served in dangerous waters during the war. This made it possible for him to be called at the age of 26.

When pilot Lafleur entered his name, he was 137th on the apprentice waiting list.

The Pilotage Authority became well aware of the unreliability and deficiency of the list system and decided to abolish it. The Pilots' Committee was consulted and on June 26, 1959, the Director of Marine Regulations wrote to the Association of Pilots replying to a request made by the pilots for ten new apprentices, including two highly qualified applicants who happened to have reached the age limit. He pointed out that in 1956 the age limit had been advanced from 25 to 30 in order to give applicants more opportunity to obtain their Mate's Certificate before being licensed as a pilot, but he warned that it would perhaps be a mistake to remove the age limit altogether because of the effect on the Pension Fund. He suggested an entirely new system, i.e., cancelling the existing list of applicants and selecting apprentices through an open competition for Canadian citizens resident in the Province of Quebec, who held a Certificate of Competency not lower than Mate Home Trade and were not over 35 years of age. He added that "such a system would mean that the pilotage service would get the best men available instead of, as it is now the case, being forced to accept anybody who puts his name on the list and obtains the necessary certificate in time".

On July 20, 1959, the Director wrote again referring to recent meetings he had had in Quebec, pointing out the unsatisfactory features of the list system and adding that it was desirable for the benefit of the Pension Fund that a man be young when he enters the pilotage service. He suggested a possible new approach, that is, that applicants would not be allowed to put their name on the list until they had obtained a Mate Home Trade or Second Mate Foreign-going Certificate and that an age limit should be imposed. He pointed out that this system would encourage a good man with true ambition to work hard to obtain the required certificate before reaching the age limit and he submitted to the Pilots' Committee a draft of the amendments that would be necessary to implement the proposal (both letters filed as Ex. 727).

This was but one of the many problems resulting from the apprenticeship system. Following this suggestion by the Pilotage Authority the Pilots' Corporation decided that the whole question should be thoroughly studied by their "Committee of Admission and Promotion" whose task was to try to find a workable formula for a new and efficient apprenticeship system which would emphasize raising the standard of qualifications. The Committee worked steadily, engaged the help of an outside expert, Mr. Jean-Marie Martin, then Dean of the Social Sciences Faculty at Laval University, and held many meetings with representatives of the Authority. Proposals were made and studied and finally a new system, satisfactory to all concerned, was arrived at and approved. It came into force by an amendment to the District By-law dated March 23, 1961 (P.C. 1961-425—Ex. 429). All the expenses involved were borne by the Pilots' Corporation.

Under the new system, the Board of Examiners now plays an active part throughout in the selection of a candidate and of his training until his pilot's licence is granted. This is a permanent Board defined in the By-law and composed of the Regional Superintendent as Chairman, three members of the Pilots' Committee and one representative from the Department of Transport.

The composition of the Board of Examiners was, and still is, a point of contention because the shipowners insist on their right to be represented. In his Annual Report reviewing the events of 1961 the President of the Pilots' Corporation told the pilots that they had succeeded in retaining their representation of three on the five-member Board of Examiners instead of the minority position of two representatives originally intended. The President added that the pilots had thereby retained control over the choice and training of future pilots (Ex. 683). For the Commission's views on the matter, vide Part I, Gen. Recs. Nos. 19 (p. 515) and 25-37.

The membership of the Board and the new and active rôle they now play in the selection of candidates and in their qualifications and training ensure that both the Authority and the pilots are constantly informed about recruiting and the progress made by the apprentices.

In the new system the open list of applicants is abolished, a standard of education is required and applications are sought only when it is anticipated that apprentices will be needed. The first duty of the Board of Examiners is to make sure that there is always a sufficient number of candidates to meet the expected demand but, on the other hand, their appraisal should be as exact as possible in order to give the candidates a reasonable assurance of acceptance as an incentive to pursue their studies and to obtain the highest qualifications. As stated earlier, the number of pilots is determined by the Authority; the number of apprentices is also determined by the Pilotage Authority but only after consultation with the Pilots' Committee. With the foregoing in mind the Board of Examiners decides and recommends to the Authority when candidates are needed and in what number.

When the Pilotage Authority has authorized the acceptance of a certain number of candidates, applications are sought through advertisements in the newspapers (By-law subsec. 26(2)), which set out the basic requirements, academic and otherwise (see advertisement published on May 8, 1965—Ex. 1461(g)). The applicants, in addition to being Canadian citizens residing in the Province of Quebec, must be between 16 and 30 years of age, able to speak and understand English and French, of good character, physically fit and with at least a Grade 10 education. The applications are examined and the candidates that meet the requirements are interviewed by the Board of Examiners which selects the required number from all the applicants by accepting those best qualified. With the approval of the Authority these be-

come candidates for apprenticeship. In this manner their number is always limited and in line with the expected requirements.

In addition to the marine Certificate of Competency that was required under the old system, the candidate must acquire an academic education in navigation before being accepted as an apprentice. The requirement in this field is a diploma granted after two years at L'Institut de Marine de la Province de Québec in Rimouski or "other marine school approved by the Authority and recommended by the Pilots' Committee". Following representations made by the pilots, the Institute has now been transferred to Quebec City with a branch at Rimouski where the first year schooling is given. The official name of the Institute is "L'Institut de Technologie Maritime du Québec".

Captain Gendron, who was Commanding Officer of the Marine Institute at Rimouski from 1948 to 1959, stated that in his experience seamen who merely do time at sea lack the opportunity to study theory as they should. Most of them have only Grade 11 education and when they are at sea further studies are neglected. He stated that in order to become a good officer nowadays one needs a good specialized knowledge of physics, mathematics and oceanography, subjects that those who merely go to sea have no opportunity to study. They learn these subjects at l'Institut and similar schools.

There is also an added advantage in the requirement that candidates must have attended a marine school because their personal and moral qualifications are better known after a course of special training, very strict discipline is maintained and the unruly students are soon discovered. The diploma of the Marine Institute not only means academic qualifications but represents good character and discipline.

The Marine Institute was established by the Province of Quebec in 1944 to provide the needed theoretical knowledge to acquire a Second Mate Foreign-going Certificate, although this minimum is exceeded in many subjects. French and English are also taught. The diploma of the Institute is accepted for entry into the 12th Grade scientific course in the Province of Quebec, but counts for only one year instead of two because of the highly specialized subjects taught.

When Captain Gendron was head of the Institute, prospects for a successful career in the Canadian Merchant Service were dimmed by the disappearance of ocean-going ships under the Canadian flag and it was his suggestion that the school should be used to prepare candidates for apprenticeship in pilotage. His idea was tried first in the Montreal District and then, after many meetings with representatives of the Pilotage Authority and the Corporation of Pilots, two years at l'Institut became a requisite for apprenticeship and was included in the By-laws of both Quebec and Montreal Districts.

These two years do not form part of apprenticeship training but are a requirement for acceptance as an apprentice. The school syllabus includes, as part of the general knowledge that all mariners should acquire, items which concern pilotage specifically, e.g., the sections of the Canada Shipping Act which deal with pilotage, the duties of a pilot on board a vessel, what to do in a collision, the information required by a pilot when he boards a vessel, when and how to ascertain the draught of a vessel, what to check before leaving a berth, etc. This is a general basic course in navigation and seamanship which is given to all students at the Institute, both those who plan to become officers in the merchant service and those who intend to be pilots.

The school has radar equipment, Decca navigators, echo sounders, radiotelephones, etc. Formerly it also had the use of a training vessel, *St. Barnabé,* but when that ship was no longer available the school authorities arranged with certain steamship companies to take students on a one-month apprenticeship. In 1969, the Department of Education of the Province of Quebec placed a vessel of Messabec Ltée. at the disposal of the school, and part of the course is now spent on board the ship gaining actual experience in navigation. The whole course comprises four six-month periods at the Institute alternating with three six-month periods at sea (Ex. 1538(f)).

Pilotage is only one specialization of the seaman's profession and the Institute is not intended to be a school to train pilots alone but to impart general nautical knowledge. It provides the basic knowledge and training that advantageously replaces part of the long sea apprenticeship required by the old system. Practical experience at sea is preceded by theoretical courses because modern equipment demands theoretical training before instruments are used.

To encourage candidates to obtain the necessary training and qualifications as early as possible the date of the issuance of the required Certificate of Competency determines their rank on the eligibility list for apprenticeship. When a candidate obtains his First Mate Home Trade Certificate or Second Mate Foreign-going Certificate, he forwards a facsimile to the Authority accompanied by his Institute diploma and references as to his good conduct and ability during his sea service. This documentation is reviewed by the Board of Examiners. If the candidate meets the requirements, his name is put on the eligibility list as of the date of his Certificate. This criterion, however, is not in the By-law except as stated in sec. 29(2) which authorizes the Authority to select candidates on a yearly basis with the proviso that candidates who meet the various requirements in any year have preference over candidates who qualify in a subsequent year. The candidate does not have to appear before the Board in person and his name is automatically entered when he acquires his Certificate of Competency. Once on the list, he keeps his place until his turn comes to be licensed as an apprentice. As mentioned before, the number of apprentices is determined by the Authority after

consultation with the Pilots' Committee. In 1963, the number of apprentices was limited to 18. At one time there were 30, which was many more than the anticipated requirement. This over-enrolment resulted in an unnecessarily long apprenticeship with its attendant hardships. The candidates on the eligibility list fill the apprentice vacancies as they occur in order of priority, provided they are physically fit and have not reached the age limit of 33. No priority is given to the candidates who have obtained a Foreign-going Certificate, despite the fact this takes twelve months longer, but all candidates who hold either of the required Certificates are considered equal for the list, i.e., in the order of the date of their Certificate.

A Second Mate Foreign-going Certificate is superior to a First Mate Home Trade Certificate; it is harder to obtain and entails more general training and sea experience. However, the opinion was expressed that, from the pilotage point of view, the First Mate Home Trade Certificate is of more use to a pilot because it signifies experience acquired in coastal and inland waters.

During his apprenticeship the lot of the apprentice is hard since he does not receive any official remuneration. Unofficially most members of the Shipping Federation have for a great number of years given the apprentices a small gratuity for each trip performed aboard one of their vessels. Mr. Séverin Langlois, a retired pilot, stated that when he became an apprentice in 1925 he occasionally received a remuneration of $10 per trip from certain companies. However, once the required number of trips had been performed he was allowed to take outside work. Pilot Barras' apprenticeship lasted 16 years, as seen before, but he received no remuneration from anyone since the shipping companies had discontinued their $10 gratuity. In order to earn a living he worked during the summer months for the Canada Steamship Lines as first mate and during the winter he went to sea as a ship's officer. He made his apprenticeship trips either in the early spring or in the fall. Once someone took exception to this arrangement but he succeeded in obtaining permission from the Authority. Pilot Dussault served approximately six years as an apprentice until he was licensed as a pilot in 1958. The *ex-gratia* payments by shipping companies had then been resumed; at first he received $9 and later $12 per trip. In order to earn his living he could be otherwise employed with the permission of the Authority provided he performed the requisite number of trips. When pilot Rousseau became an apprentice in 1946 at the age of 26 the unofficial remuneration given by some shipping companies was $6 per trip. Since he could not live on that, and furthermore had no means of knowing if and when he would become a pilot, he had to be otherwise employed. Like the other apprentices he did his requisite number of trips during whatever holidays he could get from the companies who employed him as Master the rest of the year. Pilot André Bédard was an apprentice from March 3, 1953, to March 3, 1958. In order to earn a living during these five years he had to resort to other occupations.

At the time of the Commission's hearing in October 1963, Robert Gilot, age 33, was still an apprentice, the third on the list (he was granted a temporary (sic) licence on June 19, 1964). He was one of those apprentices still on the old system. From 1950 to 1952 he spent two years at the Rimouski Marine School. From 1952 to 1960, when he was called to become an apprentice pilot, he served at sea, qualified as third mate and acquired his Second Mate Foreign-going Certificate. Since he was still governed by the old system, he was required to make 40 trips per year but, in 1962, he did 125 trips and, in 1963, many more. He admits that although it is good for an apprentice to make many trips the number of 125 per year is too high and the apprentice does not have time to rest, especially at Les Escoumins. However, the reason he did so many trips was that the gratuity paid by some shipping companies was his only source of income. In 1963, he needed more money because he was married and the father of one child. The gratuity which at the beginning had been $12 per trip was increased later to $15. Out of this he had to pay all his transportation and living out expenses. These he tried to keep to a minimum, for instance, by sleeping in the attic of the temporary office at Les Escoumins where four apprentices could be accommodated. For the same reason, whenever he had a choice he would select a vessel that would provide remuneration. In winter it is rather difficult for an apprentice to find employment; some are able to find work but many do not. When he was an apprentice pilot, he attended the winter courses given by the pilots and received a grant of $140 from the Provincial Government to cover part of his living expenses.

As pointed out by pilot Rousseau, a candidate never knew for certain that he would be selected as an apprentice pilot and an apprentice had no guarantee that he would become a pilot; there might not be an opening while he was still the right age, or he might not pass his final examination, or he might fail his physical tests. These are risks that the apprentices still take, and of which they are aware when they apply, but the new system has improved the situation in that the number of candidates is limited to the expected requirements, thus preventing unnecessarily long periods of apprenticeship and making it possible to weed out candidates who lack interest or are unlikely to succeed.

Under the new system the minimum period of apprenticeship has been reduced to three years but the training has been intensified and the progress of the apprentices is closely followed. In each of these three years the apprentice is required to do a minimum of 70 trips within the District and to perform 20 movages. In addition, the By-law requires him to take a course every year aboard a training ship but, as will be discussed later, the training ship is no longer available. Furthermore, at the end of each year he has to pass an examination both oral and written before the Board of Examiners and, if he fails this examination, he is either put back one year or his

apprentice licence is withdrawn according to the recommendation of the Board of Examiners. Under the previous systems, as long as he performed the required number of yearly trips, there was no way to find out whether the apprentice was making any progress until he sat for his final examination after five years or more of training. It was only at that stage that the Examiners could discover that some apprentices did not have the right aptitude and would never become pilots.

Nowadays, the apprentice is despatched for trips and movages throughout the District and with various pilots in order to give him wider experience. The pilot whom he accompanies has to furnish a signed report to the Authority.

A progressive syllabus outlines the subjects the apprentice has to cover and on which he will be examined during each of the three years. This syllabus is prepared by the Committee of Admission and Promotion of the Pilots' Corporation, reviewed by the Board of Administrators of the Pilots' Corporation, studied again by the Board of Examiners and by the Pilotage Authority before it is finally approved and issued to the apprentices (Ex. 728).

The three main subjects in which the candidates are tested are navigation and rule of the road, aids to navigation and associated equipment and, most important of all, their knowledge of the navigable waters of the District. The topics, other than local knowledge, are simply refreshers with which a candidate who has obtained one of the prescribed certificates of competency should be well acquainted. There is no practical examination in acquired skill in manoeuvring a vessel, because none is available for such a purpose. However, the pilots whom the apprentices accompanied on various trips or movages could assess their aptitude in that regard, especially those who were given the opportunity to navigate certain sections of the River. The handling and manoeuvring of ships of different types and propulsion power can only be acquired by actual experience, in which regard, once the apprentice has received his pilot's licence, the grade system serves to supplement the practical experience he was previously unable to acquire.

When the special pilot system was in effect it often happened that an apprentice would be called upon by the pilot to act as relief pilot in the less dangerous sections of the District. Some special pilots were overworked in peak periods. In these circumstances a special pilot would choose an apprentice whom he knew and would ask him to take charge in the less dangerous sections such as White Island to Goose Cape and Father Point to Red Islet and during that time the pilot would rest in the chart room. For this service the apprentice was paid a certain remuneration by the pilot himself.

When the special pilot system was abolished and the workload was regulated by the roster system this irregular practice disappeared. During his training trips now the apprentice is more or less the pupil of the pilot who

shows him the leading marks, range lights and the general characteristics of the River. In addition, if the apprentice is in his last year, the pilot may give him the opportunity to handle but never to berth a ship. He plots courses, gives orders to the helmsman, but always under the immediate supervision of the pilot who remains in charge of pilotage. Such latitude is rarely given the apprentice in restricted waters. Apprentice Gilot stated that by working in various sections in that way he had covered the whole River under the strict surveillance of the pilots he accompanied.

The written examinations comprise three-hour tests on navigation and chart work; radar and aids to navigation; stability and ship construction. These are followed by an oral examination on seamanship, rule of the road, regulations and practical knowledge. The same pattern is followed in the examination set for each of the three years but the level of knowledge required increases from year to year.

Failure in any of these examinations may mean dismissal. On April 23, 1963, the Superintendent of Pilotage wrote to one candidate that although he had attained the 70% minimum, he was warned that he would have to do better in the next examination. Another was told that his failure to obtain 70% might lead to the cancellation of his apprentice licence but, since the Board had recommended he be put back one year and the Pilotage Authority had concurred, he would have to repeat his first year. At the same time he was warned that a future failure might well result in the cancellation of his licence or his dismissal as an apprentice. In such a case, apprentices who have to repeat a year are placed first on the list for that year.

The examinations are only theoretical because, as seen before, the Board has no way of holding practical examinations in ship handling. The opinion of the pilots who have been with the apprentices is not sought directly but information is passed by the pilot members of the Board of Examiners who are aware of the candidate's skill, either through their personal experience during his apprenticeship or from the reports received from the Pilots' Committee of Admission and Promotion. This committee follows the apprentice through his training and prepares a full appraisal of his training, skill and aptitude for the benefit of the pilot members of the Board of Examiners. Officially, there is no requirement for this summary in the District By-law nor any laid down procedure except that the minimum number of trips must have been done as arranged by the Supervisor.

Section 31 of the By-law provides that the apprentices are to be despatched by the local Supervisor in the same way as the pilots, that they must always keep the Supervisor informed of their whereabouts and be ready for assignments and that they are not to be otherwise employed without the permission of the Supervisor. However, in practice, (perhaps due to the fact that only the Shipping Federation vessels give remuneration to the apprentices) the Supervisor plays only a very remote part in the actual despatching.

The Authority's sole concern is to ascertain that the required number of trips and movages have been performed and, therefore, is not interested in reports of trips in excess of this minimum. For each trip, the apprentice is furnished with a source form on which appears the date, the name of the ship, the particulars of the trip and the name and signature of the pilot whom the apprentice accompanied. The Supervisor's list is compiled from those source forms.

The rules for despatching the apprentices were drafted by the Committee of Admission and Promotion and approved by the Authority after being transmitted through the Pilots' Committee and concurred in by the Supervisor. They are not regulations but merely administrative instructions from the Authority to the Supervisor.

At Quebec the choice of vessel is left to each apprentice while at Les Escoumins a tour de rôle is kept. At Quebec the downbound vessels are listed on a board and the despatching is done by each apprentice merely placing his name beside the name of the ship he chooses, provided the ship has not already been selected by another apprentice. The motives for the choice of ship and the frequency of assignment are mostly whether the ship pays an unofficial remuneration and how hard pressed the apprentice is for money. The selection of assignments to give the apprentice the widest experience possible as required by the By-law is not made by the Supervisor but is left entirely a responsibility of the apprentice himself. It is very seldom that apprentices are refused by a Master but frequently they are not paid.

At Les Escoumins and at Port Alfred the apprentices are despatched according to a regular tour de rôle because none of them lives there and they are not interested in spending any time in these ports (Ex. 1454, Appendix 3). Since most of them live in Quebec City, they try to return to Quebec as soon as possible after arriving at Les Escoumins. Their average stay at Les Escoumins is three to four hours.

Practical experience on board a training ship has always been a recognized feature of the training of apprentices in the Quebec District. In the early days, apprentices had to make what were called exploration trips of the District waters under the direction of the Superintendent of Pilots aboard vessels belonging to the Pilotage Authority. When the Minister replaced the Quebec Harbour Commissioners as the Pilotage Authority in 1906, he failed to comply with this express requirement of the law, despite the repeated requests of the pilots, and in his dissenting report the pilot member of the Lindsay Commission criticized the Minister for this failure. Later on, apprentice training was provided on board Department of Marine vessels (it is on record that the vessel *Druid* was used for that purpose) but the practice fell into disuse. When all Quebec District pilotage legislation was repealed in 1934, this responsibility of the Pilotage Authority was not retained in the new Canada Shipping Act.

When the apprenticeship system was reorganized in 1961, the By-law made it mandatory for the apprentices to attend an annual course on board a training ship. Neither the Pilotage Authority nor the Federal Government provided such a vessel but the pilots found a suitable one at the Rimouski Marine Institute, the *St. Barnabé* which belonged to the Provincial Government. But the *St. Barnabé* was placed at the pilots' disposal only once: she needed major repairs which, in the opinion of the Provincial Youth Department to which she belonged, were too expensive. Finally she was sold and not replaced, despite protests from the pilots. Therefore, that part of the practical training had to be dropped until a solution was found, although the requirement for it has not to date been deleted from the By-law subsec. 33(2)(b)).

Under the new system, cruises on board the training ship were considered of the utmost importance because they enabled the apprentices to perfect their radar course, obtain practical training in the use of marks, study the features of the River at leisure and learn the system of aids to navigation, none of which could be done effectively except in a vessel especially employed for the purpose. *St. Barnabé* was 150 feet long, twin screw, and equipped with radar, echo sounding machine and other necessary navigational instruments. Furthermore, the apprentices could practise berthing and unberthing and take charge of navigation, always under proper supervision. In 1961, all but two or three apprentices took part in the one and only training cruise, which lasted ten days. The cruise had been organized as an activity of the Marine Institute and the two pilots who accompanied the apprentices were to be paid by the Provincial Youth Department but it declined to do so. Finally, the Provincial Department gave them $50 each and the Pilots' Corporation credited them with half a turn per day.

In a bulletin issued on August 23, 1961, by the Quebec Pilots' Corporation (Ex. 688) the pilots were informed that the apprentices had been taken aboard the *St. Barnabé* for a training cruise to all parts of the lower St. Lawrence where a pilot might be required, that the apprentices performed pilotage and other manoeuvres under the guidance of a pilot instructor and that the experiment had proved very satisfactory.

Although the marine Certificates held by the apprentices indicate they already have considerable qualification and experience in ship handling, much experience and knowledge remain to be acquired to become a pilot, i.e., local knowledge concerning features of the District waters, distinguishing marks, variable currents and how to counter them when berthing or unberthing at the various wharves in the District. The training vessel is very useful in providing this specialized instruction. The pilots stated that a training ship need not be large as long as there is enough room to accommodate the apprentices and instructors and allow for instruction. It would be ad-

vantageous to have a shallow draught vessel which could, if desired, proceed outside the regular shipping lanes during instruction.

The pilots tried in vain to obtain a replacement for the *St. Barnabé* from the Provincial Youth Department. Having no success, they approached the Federal Department of Transport with the request that one of their ice-breakers be made available once a year for training. This request, however, was not granted at first for two reasons: "One reason was that the departmental vessels were already committed for duty during the summer months and the second reason was that it was not the policy of the department to provide facilities of this nature to individual groups for using in their training". The Department further pointed out that, when this requirement was included in the By-law at the request of the pilots, it was not foreseen that the facility provided by *St. Barnabé* would cease to exist (Department of Transport letter dated October 15, 1965—Ex. 1456(y)). However, during recent years practical courses have been given on board ice-breakers in the winter. The pilots hope that through the Marine Institute they will eventually succeed in providing the required practical training for the apprentices (Ex. 1538(f)).

At present, there is almost no age limit and an apprentice can stay as such up to the age of 45. If he fails in his yearly examination or in his final examination, he may try again and again. The Admission and Promotion Committee of the Pilots' Corporation recommended dismissing any apprentice who failed three times but their proposal was not accepted by the Authority.

The standard of marks required in the various examinations varies with the topics, e.g., the maximum is required for knowledge of the River because the candidate either knows or does not know, but in other subjects a certain leeway is permitted.

When the apprentice has finished his three years and has passed his three yearly examinations, he still remains an apprentice and is obliged to make the required number of trips per year until there is a vacancy. Then, if he is medically fit and passes a new written and oral examination set by the Board of Examiners covering all the necessary qualifications, he is recommended for a licence.

The pilot's first licence is permanent. This is a modification of the old system whereby the first licence was temporary for one year, i.e., it corresponded to the probationary licence in other Districts. Such probationary licences were discontinued because it was felt that under the new system the Pilotage Authority had sufficient opportunity to appraise candidates. As will be seen later, under the existing system of grades the licence, although permanent, is limited as to the size and class of vessels to which the newly licensed pilot may be assigned.

The final examination, which lasts about 3½ days, is both written and oral. It is the equivalent of the examination for obtaining a Certificate of

Master Home Trade, to which is added thorough knowledge of the St. Lawrence, such as depth, current, marks and aids to navigation. The written examinations are prepared in Ottawa in both French and English and sent to the Board of Examiners in sealed envelopes for invigilation and marking. Thus, at the conclusion of the examination the Board knows whether or not a candidate is successful. The candidates are then called before the Board and advised accordingly. It was stated that frequently candidates had failed an examination but in every case the Board of Examiners was unanimous.

At the time of the Commission's hearings October 2, 1963, thirteen pilots had been admitted under the new system.

In 1964, the provision of the By-law concerning the final examination was modified. This examination covers the same subjects as the regular third year examination. It was provided that the final examination will be dispensed with if the apprentice has obtained at least 70% in his third year regular written examination and if he has passed the oral examination during the previous 24 months.

Occasionally, some time elapses before the licence is issued by the Authority, and more than once the Pilots' Corporation has found it necessary to write to the Pilotage Authority to hasten the procedure. The Corporation at times has arranged with the local Supervisor to place a successful candidate on the tour de rôle immediately without waiting for his licence in order to avoid a loss of remuneration. This obviously is illegal.

The foregoing changes were effected, not because the old system did not produce well qualified pilots, but because of progressive changes in the construction and size of vessels, their new instrumentation and methods of operation, as well as improved aids to navigation, all of which demanded of the pilots a higher degree of professional knowledge. These changes also gave the apprentices more security and encouragement.

(i) *Temporary licences*

For many years the District By-law and regulations have provided for issuing temporary licences to apprentices when a shortage of pilots exists. Pilot J. Séverin Langlois recalled that in his time the period of apprenticeship was seven years but in 1928, because more pilots were needed, he was granted a temporary licence for one year after four years of apprenticeship. This licence was renewed until he was granted his permanent licence seven years after his admission as an apprentice. To obtain such a temporary licence he had to pass the regular pilot examinations, both written and oral, but he was not obliged to pass these examinations again to obtain his permanent licence.

Sec. 35 of the By-law provides that, when there is a shortage of pilots, temporary licences may be issued to apprentices in order of seniority, if they are able to pass the regular examinations. These licences are of a temporary nature only, e.g., to relieve pilots whose absence is expected to be long due

to sickness or other reasons. When the requirement no longer exists, the temporary pilots revert to the status of apprentice (Part I, p. 270).

In addition, temporary licences are issued pursuant to sec. 338 C.S.A. on an annual basis to senior pilots who have reached the age of 65 and until they are 70, provided they remain physically fit (Part I, p. 267 and pp. 361 and ff.).

The Pilotage Authority's annual returns (Ex. 534) list two categories of temporary licence:

(a) "Temporary licences under section 338 of the Act".
In 1965, for instance, three such licences were issued to pilots who had reached the age of 65.

(b) "Appointed pilots with temporary licences".
For instance, eight are shown for 1964 and five for 1965. The list of Quebec pilots compiled by the Authority as of May 1, 1964, shows in addition to sixty-three permanent licences and fourteen temporary (probationary) licences of this type (Ex. 650), all issued to young men.

Since temporary (probationary) licences were abolished by the 1961 By-law amendment (P.C. 1961-425) these entries were confusing and an explanation was sought.

On May 6, 1966 (Ex. 1466(j)) the Pilotage Authority reported that during the period 1961 to 1965 no temporary licences had been issued under sec. 35 of the By-law, and those that were issued (unless pursuant to sec. 338 C.S.A.) were, in fact, probationary licences for one year's duration.

The temporary licence issued June 19, 1964, to J. Emile Robert Gilot is one of these. It reads as follows:

TEMPORARY LICENCE AS PILOT
GRADE "C"

OF A VESSEL LIMITED TO 2,000 NET REGISTER TONNAGE

TO: J. EMILE ROBERT GILOT

WHEREAS, IT HAS BEEN REPORTED TO ME THAT YOU HAVE BEEN FOUND DULY QUALIFIED TO FULFIL THE DUTIES AS PILOT OF A VESSEL NOT EXCEEDING 2,000 NET REGISTER TONNAGE IN THE PILOTAGE DISTRICT OF QUEBEC, I DO HEREBY, IN PURSUANCE OF THE AUTHORITY VESTED IN ME BY THE CANADA SHIPPING ACT, GRANT YOU THIS PILOT'S LICENCE IN AND FOR THE SAID DISTRICT OF QUEBEC.

THIS LICENCE SHALL BE VALID FROM THE NINETEENTH DAY OF JUNE, 1964, UNTIL THE EIGHTEENTH DAY OF JUNE, 1965.

GIVEN UNDER SEAL AT OTTAWA, THIS FIFTEENTH DAY OF JUNE, 1964.

Minister of Transport as Pilotage Authority
for the Pilotage District of Quebec.

.....
Signature of Pilot.

In the past, a licence of this kind could be cancelled in the event of unsatisfactory service and the temporary pilot reverted to apprentice. This was done occasionally, e.g., the first entries of the record of the pilot who was later involved in the collision between the C.C.G.S. *Cartier* and M.T. *Seven Skies* on July 18, 1963, read as follows (Ex. 1466(k)):

> "April, 1956—Failed pilotage examination.
>
> August 16, 1956—Temporary licence issued—after second attempt at examination.
>
> November 19, 1956—*Wolfgang Russ* under his charge collided with *Asia*. Pilot's temporary licence withdrawn January 2, 1957, as a result of collision and he reverted to an apprentice pilot for the 1957 season of navigation.
>
> February 6, 1958—Second temporary licence granted.
>
> February 6, 1959—Permanent licence granted."

As seen earlier, the probation period was eliminated in 1961 when a complete new scheme of apprenticeship was drawn up. Since the apprentices now have to pass an examination every year, it was felt that by the time they are ready to be licensed as pilots the Authority has had ample opportunity to appraise the candidates and weed out those who prove incompetent or unreliable. For comments, vide Part I, p. 269.

Licence and grade should not be confused: there is no such thing as a Grade A licence, or a Grade B licence, or a Grade C licence, but only permanent licences, the holders of which are classified as Grade A, Grade B or Grade C pilots (District By-law, sec. 24).

However, the practice of issuing temporary licences continued to be followed after 1961, apparently because no one realized that it was no longer legal (Part I, pp. 267 and ff.). The Pilotage Authority informed the Commission on May 13, 1966, that instructions had been issued "to drop the word 'Temporary' forthwith" (Ex. 1466(j)). However, the 1968 annual report shows that the illegal practice is still being followed; five new pilots are shown to have been issued temporary licences while two temporary pilots were issued their permanent licences that year.

The By-law also provides transitional measures to preserve the acquired rights of those who were candidates and apprentices under the old system. The old list was retained but was closed and its conditions were modified. Apprentice Gilot was one of those affected. Depending on the stage of their training, a greater or lesser number of the new requirements were made applicable to them. The first step was to eliminate from the old list the names of those who were no longer interested or likely to be called. Letters were written to those whose names appeared on that list to ascertain whether they were still interested. If they answered in the negative, or failed to reply, their names were struck out and they were informed by a letter to that effect. No one protested.

The By-law also contained transitional provisions for the apprentices. The ultimate aim was to send all candidates to the Rimouski Marine Institute before they became apprentices but it was impossible to change the system without warning and to deprive the apprentices of the credits they had acquired to date. They were then divided into four categories:

(a) those who had completed their apprenticeship;

(b) those who were almost through;

(c) those who were half way through;

(d) beginners.

The first two categories were unaffected by the new system because they were then either qualified or about to be; those who had completed 30 months of service toward a certificate were required to attend the Rimouski Marine Institute for one year and those who had less than 30 months of apprenticeship were required to attend the Marine Institute for two years. At the time of the Commission's hearings, the list of the three first categories was almost exhausted, which meant that most candidates were under the new system by then.

(ii) *Nepotism under the 1860 Corporation system*

It has been charged that prior to 1920 when the Pilots' Corporation administered the service one had to be the son of a pilot, or at least a close relative, to be accepted as an apprentice.

Retired pilot Jean Baptiste Cyrille Pouliot, who was licensed in 1916 after a seven-year apprenticeship, explained the situation. He denied the charge but explained that to become an apprentice one had to acquire a share from a pilot and a pilot had only one share that he could dispose of. At that time, the Pilots' Corporation had various assets. Up to 1905, they owned the three pilot schooners stationed at the Bic boarding station and also the equipment at the pilot stations. These assets had been acquired by the Corporation with money from the common fund and they were treated as belonging to the active pilots in co-ownership. Each share was valued at $500. When a pilot retired he was not entitled to receive the value of his share from the Corporation but while on the active list each pilot was entitled to have one apprentice, i.e., someone to whom he could transfer his share when there was a vacancy and it was his turn to dispose of his share. If the pilot had no apprentice to whom to sell his share when his turn came, he could sell it to a friend for whatever price he could get. However, once the apprentice was accepted he was not attached to that pilot but served his apprenticeship with all the pilots to learn the "tricks of the trade".

The witness came from a family of pilots: both his granfathers were pilots and so was his father. However, when he wanted to be admitted as an apprentice his father's turn to sell his share had not come and his father

was obliged to buy him the share of another pilot who was permitted to sell it to any one he chose. The purchase price was $500. (Vide Part I, p. 552.)

(iii) *Admission and Promotion Committee*

The pilots as a group as well as individually now take a very active part in the training of apprentices, both by over-seeing the progress of their training and their general behaviour, and by organizing lectures and courses through their standing Committee of Admission and Promotion.

As seen earlier, when the pilots heard in 1959 that the Authority intended to effect drastic changes in the unsatisfactory apprenticeship scheme, they feared that if they remained inactive and uninterested they would soon lose whatever control they had over the selection and the training of the candidates and apprentices. Therefore, they entrusted the task of studying the question to a Committee of Pilots which, when the Corporation was formed, became the permanent Committee of Admission and Promotion with increased responsibilites (section 40 of General By-law No. 1 of the Pilots' Corporation, Ex. 672). It is composed of four members, two of whom are elected by the general meeting and the other two appointed by the Board of Directors of the Corporation.

The Commission was informed that the Committee's main functions are to care for the apprentices, to help them in their training, to facilitate their studies, to see that they perform the required number of trips, to make sure that the stipulated procedure is followed to evaluate their character, to observe their behaviour (even the way they dress when on duty), to keep a record of their progress, and eventually to make reports and recommendations. This Committee, as seen earlier, was originally responsible for the studies and research on which the re-organization of the apprenticeship system was based, with the aim of ensuring higher qualification standards. Later, it was given the responsibility for ensuring that the training keeps pace with technical changes in ship construction and advanced methods of navigation.

The Committee does not take part in the application of the grade system; it does not exercise any supervision over the licensed pilots except indirectly, e.g., if a pilot refuses to take an apprentice with him. This happened once and the Committee wrote to the Authority asking it to ascertain the circumstances in order to find out whether it was the apprentice's fault. The case was investigated by the Supervisor.

The Committee concerns itself exclusively with the apprenticeship system and the apprentices. It has no disciplinary or administrative power, its rôle is to advise, assist and report. The Committee simply makes suggestions and reports to the Board of the Pilots' Corporation which, in turn, if it concurs, transmits them to the Pilotage Authority, which alone has power over the apprentices and their training.

It is not an objective of the Pilots' Corporation that this Committee should eventually select or examine the apprentices since these duties belong to the Board of Examiners of the Pilotage Authority.

As far as the grading of pilots is concerned, the Pilots' Corporation limits its intervention to recommendations on general policy.

Soon after its formation in 1961, the Committee of Admission and Promotion, in close co-operation with the Supervisor and with his approval, organized the apprentices' training and drafted rules for despatching them on the basis of experience gained. These rules are signed by the President of the Pilots' Corporation and by the District Supervisor (Ex. 688). The actual despatching of the apprentices is attended to by the Supervisor and the function of the Committee is limited to the preparation of a programme that the apprentices are requested to follow.

The Committee follows the activities of the apprentices closely. It keeps an up-to-date list of apprentices indicating their qualifications, sea service, the certificate they hold, whether they attended the Marine School, etc. It also keeps the apprentices under observation and records their activities based on the report the Committee asks every pilot to forward whenever he has an apprentice with him, which contains a description of the trip made by the apprentice and the pilot's appraisal. These documents relating to his performance are not sent to the Board of Examiners but are for the use of the Admission and Promotion Committee only. However, before any examination, the Committee forwards a report on the candidates to the Corporation's Board of Directors, three members of which are on the Board of Examiners.

Although the Committee has no power to discipline the apprentices, it occasionally sends a letter to an apprentice suggesting better conduct or adherence to the training program and pointing out that it will make a report to the Authority if there is no improvement. Frequently, the Committee has had to send observations to the apprentices, mostly about their absences, their requests for leave and the number of trips they had to do.

Prior to the creation of the Committee, there were no such rules for despatching the apprentices and no one exercised any surveillance or showed any interest in them (except keeping a record of the trips they had done) with the result that the apprentices were left entirely to themselves.

The pilots are kept informed of the activities of the Admission and Promotion Committee through the bulletins containing topics of interest to the pilots that the Corporation of Pilots issues periodically. On February 3, 1961, for instance, a bulletin told them about the formation of the Committee and its functions; that the Committee, together with the Board of Directors, had met with the Pilotage Authority in Ottawa in order to make the final revision of the new apprenticeship By-law before submission to the Privy Council; and that they were awaiting the Council's approval.

The pilots were also told that the Committee had met with the Deputy Minister of the Provincial Youth Department to obtain permission to give lectures in Quebec with the same remuneration for both instructors and apprentices as obtained at the Rimouski Marine Institute, but that their suggestion had not been favourably received.

In another bulletin dated March 27, 1961, a new programme of studies and training was explained to the pilots and they were also informed that the Committee had been successful in obtaining from the Provincial Government an allowance of $60 for those students attending winter courses who had no other income. It was pointed out that, in order not to add to the expenses of the Corporation, the organizational cost of the training programme and of the winter courses was being paid out of the remuneration that the pilot teachers received from the Provincial Government. The bulletin also indicated that the Corporation was making new representations to have the Marine Institute transferred from Rimouski to Quebec.

As these bulletins show, the Committee of Admission and Promotion organized winter courses for the apprentices in addition to playing its advisory and surveillance rôle. This was an innovation because prior to 1961 the apprentices had always been left altogether to themselves and there was no formal instruction.

At first, these winter courses for apprentices were organized by the pilots themselves but since the Marine Institute was transferred to Quebec they have become a responsibility of the Institute. These courses are not compulsory because the pilots have no control over the apprentices, and also, since the apprentices are not paid, they have to be given an opportunity to earn a living. The lectures are helpful in indicating the type of studies the apprentices should follow and they also serve as a refresher for those who have already completed their studies but who still have to pass their final examination.

The lectures which are given by the pilots follow the syllabus prepared by the Authority in conjunction with the Committee and deal with matters the apprentices should learn and on which the examinations will be based.

Despite the fact that attendance is not compulsory, most apprentices attend the winter course, even those who do not have to pass the examination because they qualified under the old system. The Committee has found a marked improvement in the results obtained in examinations since these winter courses started.

At the end of the winter course, there is an examination which is neither official nor compulsory but simply gives the apprentices concerned an indication of the progress they have made.

The apprentices who attend receive a small remuneration from the Provincial Government to take care of their living-out expenses.

It was suggested that it would be beneficial for the licensed pilots to attend these special lectures. It is a matter of record that some pilots attended courses of this nature at Rimouski. As expected, after the relocation of the Institute in Quebec the pilots' attendance was much higher. They have attended courses devised for qualified mariners on various subjects such as radar interpretation and radar simulator (Ex. 1538(f)).

(iv) *Grade system*

Under the present regulations, once a pilot is licensed he can not be compelled to attend further courses, take further training or pass additional examinations (Part I, pp. 358 and ff.) except (and then only if the Pilotage Authority so directs) as a condition attached to the reinstatement of his licence if it has been cancelled for any reason or has been forfeited for two years' non-usage pursuant to sec. 336 C.S.A.

Pilot Michel Dussault expressed the opinion that the system is weak in this respect and observed that when, for any reason, a pilot is performing little or no pilotage over a long period of time he loses touch and his skill and knowledge are no longer up to standard. He urged that in these cases pilots should be compelled to follow refresher courses and that they should not be allowed to take pilotage assignments until they passed new examinations (vide Part I, Gen. Rec. 31).

However, the pilots in the District of Quebec are now graded more or less in accordance with their qualifications. In 1960, this grade system replaced the *special service pilot system* that had existed up to that time and thus concluded a century-old contest between pilots and shipowners.

The special service pilot system was the last remnant of the free enterprise era of pilotage that existed prior to the first incorporation of the Quebec District pilots in 1860 when the exercise of the pilots' profession was truly free. Pilots were allowed to compete among themselves for clients and Masters were entitled to choose whichever licensed pilot they wished to employ. When the pilots sought their incorporation in 1860, they abandoned competition in favour of regulated despatching, i.e., the tour de rôle or roster system. However, the new Act retained the right of the Master to make his choice of the available pilots and it was only when this choice was not made that the tour de rôle was to apply. Later, this privilege was restricted to the three names appearing at the top of the tour de rôle and permission was granted to certain companies to have pilots assigned to them permanently. Later still, the right to choose was abolished but the special service pilot system was retained and enlarged.

The retention of the Master's privilege to choose his pilot was a constant source of dissension among the pilots because it hampered, and at times made impossible, an adequate distribution of the workload and made the pooling system inequitable. Trouble soon developed. The pilots who were most often chosen but received only an equal share because the dues were

compulsorily pooled rebelled against the system and made petitions to Parliament demanding the abolition of the Corporation and a return to free enterprise. Instead, by an 1869 amendment to the 1860 Act Parliament reaffirmed the right of Masters to choose their pilots, despite the injustice this created for the pilots concerned.

In the Lindsay Commission Report, the pilot member pointed out in his dissenting opinion that the real cause of the trouble at that time, i.e., 1913, was the existence of this system which played havoc both with despatching and with the distribution of revenues. In 1949, Mr. L. C. Audette, Chairman of the Audette Committee, advocated in a dissenting opinion the abolition of the special pilot system, pointing out its drawbacks and noting that the choice of a pilot was not decided by his competence but was a matter of influence. Surprisingly enough, the pilot members of the Committee disagreed. It must be borne in mind, however, that by that time the financial situation of the special pilots had greatly improved because true pooling had been abolished and replaced by the new procedure that still exists today whereby the share of each pilot is calculated according to the number of trips he has performed, subject to the maximum average rule. In addition, the special pilots received from their employers a bonus they did not place in the pool.

Retired pilot Séverin Langlois stated that he became a special pilot during his first year as pilot, although he had only a temporary licence at the time, because he had had occasion to render a service to the Master of a Norwegian ship who was about to request the appointment of a special pilot. He recalled that to become a special pilot was mostly a question of friendship. When a line needed another pilot, the recommendation of their senior special pilot used to be followed and, therefore, his influence was much sought by those who aspired to such an appointment. This system was disliked by the tour de rôle pilots who retaliated by never missing an occasion to report a special pilot when he was at fault. Pilot Langlois himself had been the butt of many such adverse reports, all of which turned out to be unfounded.

The unofficial remuneration that the companies paid their special pilots as an incentive to retain their services varied over the years. In 1959, it was $25 per passenger ship and $20 for others; at one time, it was $12 and when the shipowners tried to reduce it to $9 the special pilots went on a type of strike by refusing to serve and by applying strict tour de rôle. The proposed reduction was soon abandoned. The practice existed prior to 1918. The Robb Commission in its report frowned upon this unofficial payment, which was then $12, and the report condemned the practice as pernicious and illegal and recommended that it should be abolished.

Under this system an equal distribution of work was impossible. In 1958, for instance, while the fully active tour de rôle pilots did an average of 88 trips, 10 special pilots did an average of 109 trips each. They were so over-

worked that they had to resort to employing an apprentice pilot as a relief in the least difficult sections of the River in order to get essential rest.

Pilot Rousseau became a special pilot two years after obtaining his licence and remained one until the abolition of the system in 1960. When he first became a Director of the Pilot's Association in 1953, he was a tour de rôle pilot and he tried to have the special pilot system abolished. He stated that the Board was controlled by special pilots who, as a friendly gesture, allowed one of the tour de rôle pilots to act on the Board and that year he was the one selected. However, he had no influence whatsoever. He stated that at that time the special pilots had the best and fastest ships to pilot, they were not subject to the despatching routine and had a free hand. The less attractive pilotage assignments were shared by the tour de rôle pilots. He charged that the problem could not be solved at that time because the special pilots who controlled the Board of Directors were working hand in hand with the shipping interests which employed them.

He resented that system and tried to have it abolished. The procedure prescribed by the regulations governing the Association was to have a petition signed by a two-thirds majority of the members in order to pass an amendment that would be binding on the Board of Directors. He tried this but to no avail. He himself became a special pilot, he said, in order to benefit from the financial advantages of the system, although he still remained opposed to it and waited for his chance to have it abolished. The existence of that system was the main problem of the pilots in those years. An opportunity to solve it came when there was enough dissatisfaction among the pilots to bring about the election of a new slate of officers for the special purpose of abolishing the system.

Pilot Roland Barras, who was President of the Board that was defeated in that election, stated that when he was on the Board of Directors of the Association the Department seemed especially in favour of abolishing the system but, since the majority of the Board members and of the pilots were special pilots, the Board was not in favour. In 1959, out of 77 pilots 39 were special pilots (Ex. 590).

On October 21, 1959, at a meeting of the Advisory Committee, Mr. Cumyn, Director of Marine Regulations, brought up the question pointing out that the privilege of having special pilots had been extended to a much larger group of ships than was originally envisaged, with the result that a sizeable fraction of the entire traffic fell within this class. He pointed out that the system was abolished in Montreal in 1959 with the introduction of a system of grading. The pilot representatives on the Committee countered with the comment that the By-law of their Association would not permit an arrangement whereby some pilots received a larger share of the earnings than

others and they also cast doubt on the authenticity of the list of pilots' signatures, to the number of 42, who had signed a statement requesting the Department to abolish the system.

Captain D. R. Jones, the Superintendent of Pilotage, who drafted the minutes of this meeting, added "the impression was gleaned that this matter of special pilots would possibly be a major feature in the election of the pilots' representatives in the forthcoming winter, and as the present Board does not appear to enjoy the confidence of the body of pilots on this issue, the election may well produce a radical change in the membership of the Committee."

After the 1960 election, the new Board of Directors immediately appointed a special committee to study the matter and, acting upon its recommendations and with the assent of the majority of the pilots, in a letter written by their legal counsel dated February 12, 1960, they agreed to the proposal while pointing out to the Deputy Minister that their agreement was subject to the necessary tariff adjustments "to compensate for the loss of income privately received by the special pilots."

The Department implemented the first part of the agreement by a telegram, dated March 30, 1960, in which the pilots were informed by the Pilotage Authority that the special pilot system had been abolished and replaced by a grading system, but it failed to implement the compensation agreement. This almost resulted in a strike as will be reported later (Ex. 683).

Pilot Koenig charged that when the Corporation with pilot Rousseau as its first President took over in 1960 there was a campaign all winter in favour of abolishing the special pilot system. He claimed that the pilots' assent was obtained by misrepresentation, i.e., that they were led to believe that the bonus the special pilots had been drawing from the shipowners would not be lost but would be embodied in a tariff increase. He also charged that this argument which led many pilots to support the proposal was, in fact, a misrepresentation because the Board of Directors was not certain that the tariff would be increased.

The facts of the case, however, are different and, as will be seen later, there were serious reasons to believe, even assurances, that there would be full compensation through an adequate upward revision of the tariff.

The change was incorporated in the By-law by an amendment dated June 2, 1960 (P.C. 1960-756, Ex. 429) cancelling sec. 24 of the 1957 By-law dealing with special service pilots and replacing it with a new section which provided that pilots would be graded in three categories: Grade A for a small group of pilots, specially chosen by the Authority on the basis of seniority and good record, to take charge of the most difficult assignments; Grade B for the remaining fully qualified pilots; and Grade C for pilots of less than three years' service, who were limited to small vessels.

The new system gave more incentive to young pilots who could hope to become Grade A pilots eventually by further qualifying themselves and by maintaining a good record.

Another amendment in 1961 (P.C. 1961-425) provided that Grade A pilots would be assigned to any vessel, regardless of size, Grade B pilots to vessels not exceeding 10,000 tons and Grade C pilots were divided into two categories: within the first year after obtaining their licence they were limited to vessels not exceeding 2,000 tons (raised to 3,000 tons by P.C. 1965-1772, dated June 23, 1965) and in the second year, and subject to satisfactory service, to vessels not exceeding 4,000 tons. The tariff was amended by the inclusion of a surcharge of $25 on vessels reserved for Grade A pilots, i.e., those exceeding 10,000 tons.

Grade B is the basic grade of the full-fledged pilot from which he can not be demoted but, since Grade A is based on seniority and on good record, a demotion to B is possible, and, since permission for C-1 or C-2 pilots to handle larger vessels is based on satisfactory service, promotion can be delayed. From the institution of the grade system up to February 8, 1966, this power of the Authority was exercised in Quebec only twice (Ex. 1461 (z)):

(a) Following the grounding of M.V. *Tautra* on May 19, 1962, an inquiry was held under secs. 568 and 579 C.S.A. The pilot's promotion from Grade C-1 to Grade C-2 was delayed until September 22, 1963, and this, is turn, delayed his Grade B until September 22, 1964.

(b) As a result of the inquiry under secs. 568 and 579 C.S.A. into the grounding of M.V. *Irvingstream* in Quebec harbour November 25, 1962, the Grade A pilot was suspended for one month and demoted to Grade B.

In 1963, in the case of the pilot involved in the collision between C.C.G.S. *Cartier* and M.T. *Seven Skies* the Departmental Revision Committee recommended that, in addition to a certain period of suspension, the pilot be reclassified as Grade C-1. This recommendation was agreed to by the Pilotage Authority but when the time came for its implementation it was realized that this was not permissible under the present By-law (Ex. 1466 (k)).

As far as the Pilotage Authority is concerned, the Quebec District pilots receive whatever dues they have personally earned (this is not true in practice). Hence, under this system the remuneration of the pilots would increase with higher grades. The Class C pilots would be affected most because they are limited to assignments which pay smaller dues but the system also has the advantage of making it possible to shorten the apprenticeship period. The pilots have reported that experience has shown that the system is working satisfactorily.

In 1963, there were 10 Grade A pilots all, with a few exceptions, chosen from the senior pilots.

The grade system in the District of Quebec was to be abolished in 1967 by a judgment rendered by the Exchequer Court on Oct. 10, 1967, in the Gamache case (see below), confirmed by the Supreme Court of Canada on the legal ground that it was not within the powers of a Pilotage Authority to establish different classes of licence, a Pilotage Authority not being authorized under Part VI of the Act to limit licences as to competency. Hence, since then, the grade system in the District of Quebec does not legally exist and the provisions that are still in the By-law are as inoperative as if they had been formally repealed by a By-law amendment.

Pilot H. E. Gamache had instituted against the Pilotage Authority an action in an attempt to be reinstated to Grade A. Prior to the establishment of the grade system, he held a regular licence which was permanent and unlimited as to competency. When the grade system was adopted he was automatically granted a Grade B. Later, he was promoted Grade A by the local Supervisor whose decision was reversed by the Ottawa Pilotage Authority's advisers. He then sued the Pilotage Authority seeking his reinstatement to Grade A, and in an alternative conclusion he asked that the By-law provisions instituting the grade system be declared void as ultra vires.

The grade system had proved to be a definite improvement in Quebec and a necessary feature in a system of fully controlled pilotage which ought to be retained. After this judgment, the only possible way to maintain it legally would have been to have the Act amended by Parliament to provide either for the power to create grades to be added to the regulation-making powers of a Pilotage Authority, followed by new regulations to that effect, or, as an interim measure until a new Act is adopted, for giving specific statutory approval to the inoperative provisions of the Quebec By-law.

Neither course was taken. When the Act was amended on July 9, 1969, by 17-18 Eliz. II c. 53, the provision (sec. 7), which gave effect retroactively and for a certain time to the ultra vires By-law provisions enacted by the Pilotage Authority, applied only to the By-law provisions that existed when the amendment was passed, but did not revive provisions that had ceased to exist. A special provision to that effect would have been necessary.

Despite the fact that the grade system has not legally existed since October 10, 1967, when its governing provisions in the District By-law were declared null and of null effect by this judgment of the Exchequer Court, confirmed on this point by the Supreme Court of Canada, the Pilotage Authority has continued to grade the pilots and despatch them accordingly as if the judgment had never been rendered (Ex. 1538(c)). The complainant, pilot Gamache, was reinstated in Grade A, the relief he had first sought and which was denied to him by the Courts because this could not be legally

done. Although this Commission considers that the grade system is necessary and has recommended that the proposed new Pilotage Act provide for it, it can not but condemn the decision deliberately taken by the Pilotage Authority to act illegally. This placed the Pilotage Authority in a vulnerable position and was the very reason for the sudden proliferation of Grade A pilots: their number increased from 23 in 1966 to 34 in 1968.

*COMMENTS*

The grade system has proved a significant factor in making pilotage more reliable and efficient but it is still in the experimental stage and can be improved upon. To make the system fully effective, Pilotage Authorities need the complete surveillance and reappraisal powers described in General Recommendations 26-38 (Part I, pp. 556-581). The foregoing study has also indicated four situations which should be covered in regulations.

Downgrading should be automatic after an absence of a certain duration (since the pilots' *expertise* can be maintained only by constant experience), and the longer the absence the lower should be the grade on returning to active pilotage. Periods spent in lower grades should be long enough for the Authority to reappraise a pilot's performance but should offer the opportunity for accelerated promotion.

The By-law is not clear how the grade system applies to temporary pilots. The regulations should state that it does apply and that, if a temporary licence is revoked because the need for it no longer exists, the intervening period until another licence is granted should be treated as a period of absence accompanied by the degrading and reassessment this entails. The type of licence held should have no effect on the application of the grade system since the only difference between the two licences is the lack of a vacancy in the District establishment.

The regulations should also provide measures for meeting a temporary shortage of Grade A pilots which occurs for any reason (illness, abnormal demand, etc.). Temporary replacements should be from a group of Grade B pilots selected for their skill and experience. In a system in which the number of Grade A appointments is restricted, the Grade B group contains a number of experienced pilots fully qualified to handle larger ships who have not been promoted because there was no Grade A vacancy. It is unreasonable either to delay a ship unduly until a Grade A pilot can be made available or to assign the first Grade B pilot on the roster in lieu, regardless of the extent of his experience.

As long as the right to a Grade A promotion remains restricted for considerations others than tenure of licence, qualifications, experience and good record, these other considerations (among them the number of Grade A pilots and the factors to be applied in fixing that number) should be estab-

lished by regulation. Since a lower grade is a limitation on a pilot's competency and earning capacity, he should not be denied a promotion by decisions based on the sole discretion of the Pilotage Authority. The absence of such legislation is liable to result in conflicting decisions, cause dissatisfaction and rivalry among the pilots and even be a source of litigation as has already occurred in the Quebec District. For further comments, vide Part I, p. 264.

(v) *Special cases*

The choice of a pilot by a shipowner is no longer permissible except in very exceptional circumstances.

On one occasion, an agent tried to have a pilot of his choice for a special assignment but to no avail. On October 5, 1961, the March Shipping Agency Limited requested permission for one of their former special pilots, pilot Léon Pouliot, to be assigned to their S.S. *Canuk Trader* for a trip to Chicoutimi Harbour to load a cargo of scrap metal. For further details, see pp. 147 and 321.

The Pilots' Committee was consulted and they did not agree with the request, pointing out that pilot Pouliot had not been in Chicoutimi for quite some time, that he had no particular knowledge of the St. Fulgence Channel and that his special experience with the *Canuk Trader* was not exceptional because all the pilots had had opportunities to navigate many ships of that type. Therefore, the request was denied without even being referred to the Ottawa headquarters. Captain Slocombe stated that, if it had been referred to Ottawa, the request would not have been concurred in because from what they knew of the vessel it was just an ordinary 10,000-ton tramp vessel with which all the pilots are quite familiar and that the tour de rôle should not be interfered with lightly but only in very outstanding and special circumstances. This was not such a case in his opinion.

He added that, as a rule, if the pilot first on turn feels that he is not able to perform a certain assignment in the prevailing conditions but that, on the other hand, another pilot feels quite confident he would be able to do it, the Authority might consider assigning the other pilot, provided this would not upset the feelings of the remaining pilots. If the assignment were to provoke a quarrel among the pilots, it should not be given. One of the functions of the Pilotage Authority is to try to keep a Pilotage District running smoothly and to provide the best advice to mariners. This can not be done if the pilots are quarrelling.

*COMMENTS*

This Commission can not agree with the way this case was handled. The size of the ship and the physical limitations of the St. Fulgence Channel made the trip very difficult with possible serious consequences not only to the ship but to the harbour of Chicoutimi and the public interest. This was fully recognized by the Pilots' Committee. It was a case of exception and should

have been dealt with as such. First, the ship should have been designated a class A vessel for this occasion persuant to subsec. 11(b) of the By-law Schedule; second, it should have been entrusted to one of the most competent pilots in the circumstances, i.e., a Grade A pilot with extensive experience in the navigation of the St. Fulgence Channel. The Pilotage Authority shows a profound lack of understanding of its rôle and responsibility when in despatching pilots it gives precedence to such grounds as the "feelings of pilots" over safety of navigation and the efficiency of the service.

*GENERAL COMMENTS*

The Quebec pilots should be highly commended for their active participation in the realistic and practical reorganization of the method of recruiting apprentices and for their progressive training.

Apprenticeship is a necessary feature of the Quebec pilotage organization. The required local knowledge and skill to navigate large ships safely within the Quebec Pilotage District can not be acquired and retained except by continued experience. At present, qualified mariners regularly trading in these waters are not in sufficient numbers to provide a reasonable pool on which the District could rely for the selection of its pilots.

The nature of pilotage on the St. Lawrence River and the type of traffic to be served require the pilots to be mariners highly qualified in the navigation of all types of vessels and thoroughly familiar with modern developments and technology (vide Part I, Gen. Rec. No. 31). The requirement imposed on potential candidates for apprenticeship to obtain their marine qualification through formal schooling was a realistic step aimed at making the basic qualification of future pilots the best marine education available.

The active part played by the pilots through their Admission and Promotion Committee shows a rare sense of professional responsibility on the part of the Quebec pilots as a group. Full advantage should be taken of this voluntary and most efficient cooperation. Since the responsibility for ensuring the required standard of qualifications rests with the Pilotage Authority, it is considered, however, that the Pilotage Authority should not relinquish its training function which it discharges effectively at present through the permanent Board of Examiners it has created for the purpose of organizing and directing apprenticeship and assessing the apprentices' progress and qualifications. The Pilotage Authority should be prepared to require this Board to exercise closer surveillance and control over the apprentices' studies and activities if the benevolent assistance it now receives from the Pilots' Committee tends to diminish, e.g., it should be required to organize the winter courses, both for pilots and apprentices, if these are no longer organized by the pilots or do not meet desired standards.

The necessary arrangements should be made so that the Board of Examiners is in a position to appraise before licensing not only the theoretical

knowledge of the candidates but also their ability and skill. The number of apprentices is never very large and it appears that it could easily be arranged to have these candidates employed under surveillance, e.g., as navigators on board Coast Guard vessels or other Government-owned vessels, sufficiently long to permit them to acquire the necessary experience and to allow for a satisfactory appraisal.

It is considered that the grade system is a necessary requirement.

It is also considered that apprentices should be given a reasonable remuneration which should form part of the cost of operating the District; their training should be closely followed and intensified and they should not be allowed to take other employment, except with the permission of, or as directed by, the Pilotage Authority.

The concept that an apprentice should not be remunerated, indeed should pay for his training, is outdated and belongs to the past era of free enterprise when any young man could become an apprentice, provided he found a Master whom he could interest and to whom he could be indentured.

The situation has changed basically since that time. An apprentice is no longer a man with little education but an experienced mariner with a Master's, or at least second mate's, Certificate. Now, only a selected few are accepted and in no greater number than necessary to meet expected requirements for pilots. When a candidate is accepted as an apprentice, he becomes an asset to the organization and the responsibility for his specialized training is not left to him alone but is regulated by the Authority, who weeds out unsuitable apprentices as their lack of interest or inaptitude becomes apparent.

Today, an apprentice has a reasonable guarantee of becoming a pilot. It is considered this guarantee should be further affirmed by deleting the maximum age limit so that a successful apprentice may be assured of a pilot's appointment as soon as there is a vacancy and also in order that the District investment in his training should not be wasted.

One of the main prerequisites to ensure the availability of qualified apprentices when a pilot vacancy occurs is to provide them with adequate remuneration. For a great number of years, this has been done in an indirect way by some users of the service, i.e., the members of the Shipping Federation, who, by a unique gesture, have provided voluntary financial support for apprentice pilots. The members of the Shipping Federation are the main employers of pilots and they realized that without a minimum financial incentive it would not have been possible to retain the best pilot material, since these qualified mariners would not lack opportunities for other remunerative employment.

Since the training of apprentices benefits the whole pilotage service, the cost of training them and ensuring their availability should not be left to the mercy of voluntary contributions in the form of an extra charge sought from

those ships in which apprentices happen to serve. The remuneration of apprentices and the cost of their training should be a charge against the service and, hence, a District expense.

Since apprentices will no longer have an incentive to make more trips in order to increase their income, it will be necessary for the Authority to supervise their training closely to ensure they acquire the necessary specialized theoretical education combined with intensive, diversified experience.

Therefore, apprenticeship should be a full-time occupation. The Pilotage Authority should assume the responsibility for providing the apprentices with the required specialized theoretical education by setting up courses or taking advantage of existing ones. Attendance must be compulsory. A practical training plan should be devised to give as complete as possible practical experience in pilotage in District waters and in fields connected with pilotage, *inter alia,* by:

(a) requiring that when the apprentices are not otherwise employed they accompany pilots on board vessels on all types of assignments, in winter as well as in the normal navigation season, and to all the harbours, ports or landings within the District;

(b) making arrangements for experience on the bridge of Coast Guard vessels which normally operate in the District, including ice-breakers in winter;

(c) providing the apprentices with the opportunity to acquire practical knowledge of all the related services, i.e., in the Harbour Master's office as assistant to the Harbour Master, at the pilot stations in Quebec City and Les Escoumins, as assistant to the Supervisor, with the Marine Traffic Control system both at the Quebec Control Centre and the Montreal headquarters and with the Ice Information Service.

The initiative taken by the Harbour Master in Quebec, who has accepted apprentices on his staff to familiarize these future pilots with the harbour, its features, organization and difficulties, is a commendable example. It is considered that a permanent agreement should be made by the Pilotage Authority with the National Harbours Board.

Re providing apprentices with practical experience on board a Government ship plying the River, a precedent was established by the Department of Transport with the Coast Guard Training College, which was created to produce corps of efficiently trained deck officers and marine engineers to man Canada's Coast Guard vessels, whereby the students are given practical training on board D.O.T. vessels. The students, who have all expenses paid and also receive a monthly salary, are required to sign a seven-year contract when they enter the College.