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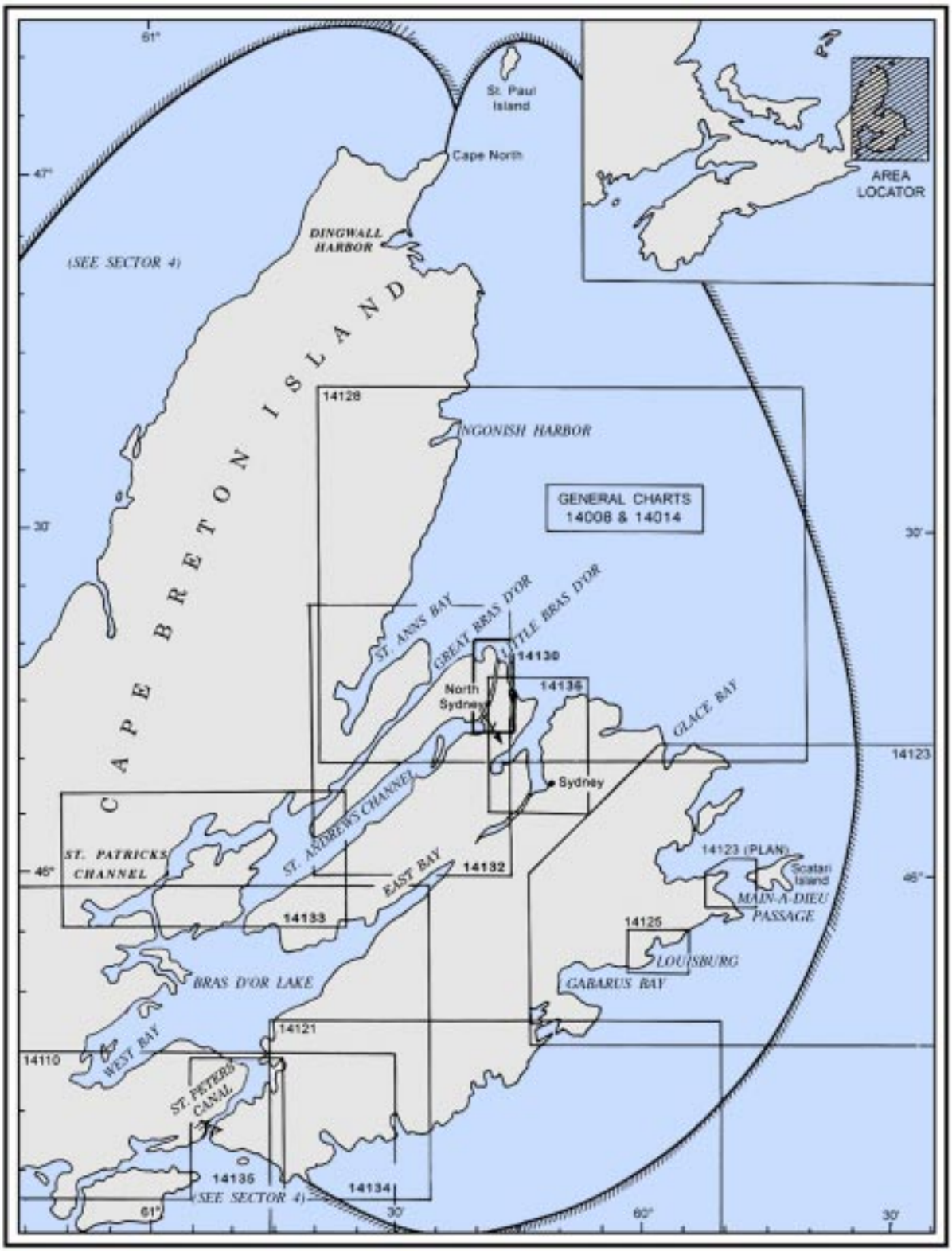

Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

SECTOR **5** — CHART INFORMATION

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SECTOR 5

CABOT STRAIT AND CAPE BRETON ISLAND

Plan.—This sector describes Cabot Strait and its general conditions and then the E and SE coast of Cape Breton Island from Cape North to Michaud Point. Bras d'Or Lakes are included with their approaches, at the latter part of the sector.

The general description of the E and SE coasts of Cape Breton Island is S from Cape North, to Scatar Island at the E extremity, and then SW to Michaud Point.

Bras d'Or Lakes are described first with the N approaches, then through the various channels to the southern lake and St. Peters Canal, the S entrance.

Cabot Strait

5.1 Cabot Strait, generally considered as the main entrance to the Gulf of St. Lawrence, lies between **Cape North** (47˚03'N., 60˚25'W.), the NE extremity of Cape Breton Island, and Cape Ray, at the SW end of Newfoundland. Except for St. Paul Island, there are no dangers in the strait which presents a clear channel with an overall width of approximately 56 miles. During poor visibility, the situation is changed considerably due to the steep-to nature of the surrounding depths off the above island and the S currents so common to this area. Vessels without electronic navigational aids and running in heavy fog must take great care when approaching the strait to prevent running into danger or other vessels.

Winds—Weather.—Winds blow with considerable strength from the NW and W in winter, shifting to SW and SE in spring and summer. Winter gales average more than 10 percent in January and February, but during summer gales are rare.

During autumn, tropical storms may reach this area and if the course of such a disturbance has been mainly over water, it can be a serious hazard to shipping in the strait and in the Gulf.

Fog in Cabot Strait has a frequency of 15 to 20 percent in summer and about 5 percent in winter. Snow is also a problem during the winter months as it is frequently heavy and reduces visibility to near zero.

Ice.—In an average year ice begins to appear in the strait early in January. At this time it is thin, but it increases gradually to as much as 1.2m in thickness. Occasionally, pieces of hummocked ice pass through the strait. From the beginning of February to after the middle of April it is more or less completely ice covered. Much of the ice is unnavigable, the remainder being penetrable by heavy built vessels. Vessels not specially built to encounter ice cannot navigate the strait safely during these months. Sealing vessels attempt the strait at all times, but are occasionally fast in the ice for up to a week.

The average date at which Cabot Strait becomes open to navigation is about the middle of April, having varied in recent years between March 19 to May 16.

Before the strait is open to navigation, there is nearly every year a great rush of ice out of the Gulf of St. Lawrence, causing a block of tightly packed rafted ice between St. Paul Island and Cape Ray. This block, which completely prevents the passage of ships, is known as "The Bridge." This usually occurs about the middle of April, or soon after, and may persist for several days. In exceptional ice years, it has been known to persist for periods up to 3 weeks. It is known that 300 vessels have been detained at one time by this obstacle, and many wrecks have occurred, in consequence, on the coast of Newfoundland. In severe ice-years the formation of The Bridge occurs later, at any time up to about the first week of May.

For many days after navigation is open, quantities of ice pass through the strait, particularly with N winds. In severe ice-years the passage of ice may continue until about the end of May.

Vessels entering Eastern Canadian waters between December 15 and the time these waters are clear of ice, can obtain ice information, routing, and icebreaker assistance by contacting "Ice Halifax" by VHF or R/T. This service is generally inclusive of the Gulf of St. Lawrence between 58˚W and 66.5˚W.

Tides—Currents.—Notwithstanding the bold nature of this coast, wrecks have occurred upon it in the dense fogs that accompany E winds. The wrecked vessels have generally been steering a supposedly safe course to pass N of St. Paul Island into the Gulf of St. Lawrence, but with no allowance having been made for current which so frequently runs SSE out of the gulf.

Investigations of currents in Cabot Strait have revealed a complex pattern with marked seasonal differences. In winter, there is a SE flow from the Gulf of St. Lawrence across the strait. The flow, stronger on the Cape North side of the strait with a mean rate of 0.5 knot, decreases to 0.25 knot off Cape Ray. Labrador Current approaches the center of the strait from the E, but is diverted N and S to join the outflowing current on both sides of it. This "blocking" of the inflowing Atlantic may be due to the prevailing NW wind over the Gulf of St. Lawrence during the winter months.

From about April to November, the outflow continues on the Cape North side of the strait, attaining a mean rate of 0.5 to 0.75 knot in August. On the Newfoundland side a weak inflow of less than 0.25 knot takes place 3 to 15 miles SW of Cape Ray, and the SE current on the S side of Cabot Strait, sometimes known as the Cape Breton Current or the Cabot Current, attains its greatest velocity near Cape North, at times reaching a velocity of 2 knots. The current continues to be felt along the sweep of the NE coast of Cape Breton Island, sometimes as far as Scatari Island, before it mingles with the waters of the Atlantic.

The volume of water which leaves the Gulf in this current, is largely if not wholly made up by the inward flow on the Newfoundland side of the strait, around Cape Ray.

Traffic Separation Scheme.—The Cabot Strait Traffic Separation Scheme is part of the system in use throughout the Gulf of St. Lawrence and River St. Lawrence. These separation zones are compulsory in their use.

Cabot Strait is divided into two separation zones, which allows for approach and departure S and SSE. The SSE lanes are separated by St. Paul Island and join the SE lanes off Rochers aux Oiseaux (Bird Rocks), N of Iles de la Madeleine.

Cape Breton Island

5.2 Cape Breton Island, a part of the Province of Nova Scotia, is separated from the mainland by the Strait of Canso, as described in paragraph 4.15. The chief centers are the city of Sydney, and the towns of North Sydney, Sydney Mines, and Glace Bay. The outer coastline is 665 miles in length, and together with Bras d'Or Lakes, the total coastline is 1,098 miles. The exports of the island include agricultural and dairy products, fish, coal, iron, and steel.

The salt water lakes of Bras d'Or bisect the island and are entered by two natural channels at the N end, or by St. Peters Canal, cut through in the S. They provide an inland waterway for small to moderate size vessels.

Tides—Currents.—After long NE or E winds, which raise the level of the Bras d'Or Lakes and neighboring harbors, it is not unusual to find a current with a velocity of 1 knot, running for several successive days along the coast from off St. Ann to near Cape North, where it meets the current out of the gulf and is turned to the E, causing strong rips. Fisherman affirm that it as often runs in the opposite direction, and also that at times there is a regular alternation of the flood and ebb tidal currents.

Aspect.—The E coast of Cape Breton Island from Cape North to St. Ann Bay, a distance of 47 miles, is bold, mountainous, and free from off-lying dangers. The hills near the coast reach a height of more than 425m, and are chiefly composed of granite, with clay slate in nearly vertical strata. They form good marks when proceeding a moderate distance offshore.

North End of Cape Breton Island

5.3 **Cape North** (47˚03'N., 60˚25'W.), a bold rocky headland consisting of slate, is steep-to and rises abruptly to a height of 305m. Violent local squalls are common off the headland and the cape is reported to give good radar returns up to 17 miles.

Cape North Light is shown from a white pyramidal tower, 15m high, situated on a square building on Money Point, about 1 mile SE of the cape.

A microwave tower, marked by obstruction lights, stands at an elevation of 431m, about 1 mile SSW of Money Point. This tower is a good mark from all seaward directions.

5.4 **St. Paul Island** (47˚13'N., 60˚09'W.) lies with its S end about 13 miles NE of Cape North. The island is rocky and bold, and rises in two parallel ranges of hills which attain a maximum elevation of 148m near the SE end. The N point is a detached pinnacle islet which appears from seaward to be joined to the main island. The peninsula just S of the northern point is 125m high, and from the E appears as a separate island.

The depths increase rapidly at only 0.5 mile offshore and soundings give little warning when approaching the island in thick weather. Although the island is bold and high, the high incidence of fog in this area has lead to the occurrence of many shipwrecks upon it.

The variable currents about the island add to the danger arising from fog, which prevails on S, E, and often SW winds.

Aspect.—A light is shown from a white tower, 14m high, on North Point. Another light is shown from a white round tower with red upper portion, 6m high, on South Point.

St. Paul Island—North Point Light from SE

Aspy Bay

Anchorage.—During offshore winds, small fishing vessels anchor in 18.3 to 21.9m, sand and gravel, about 0.2 mile off the outer rocks in Atlantic Cove, on the SE side of the island. Anchorage is also available in Trinity Cove on the SW side of the island.

In good weather, large vessels might anchor about 0.5 mile offshore in depths of 45 to 55m, however, they must be ready to weigh anchor at the first sign of deteriorating conditions.

The above two coves afford the only good landing places on the island.

East Coast of Cape Breton Island

5.5 Money Point (47˚02'N., 60˚23'W.), from which a light is exhibited, lies about 1 mile ESE of Cape North. Some above-water rocks extend about 0.1 mile off Money Point.

Aspy Bay indents the E shore of Cape Breton Island between Money Point and White Point, about 8.5 miles to the S. Wilkie Sugarloaf, a conspicuous conical mountain, rises to a height of 412m on the NW shore of the bay and marks the N side of the lowlands at the head of the bay.

Dingwall Harbor (46˚54'N., 60˚28'W.) (World Port Index No. 5930) is entered at the head of Aspy Bay and protected by two pairs of curved breakwaters which form an opening with a width of about 30m. The entrance is subject to rapid silting and the depth was reported as only 1.8m. The remains of former breakwaters, partly dry at LW, parallel the channel and extend E about 90m from the outer breakwaters.

A disused gypsum plant and wharf, in ruins, are situated on the N side of Dingwall Harbor. A government wharf is situated close N of the above-mentioned gypsum wharf. The government wharf is L-shaped and has an outer face, 47m long with a depth of 6.7m alongside. The fishing plant wharf on the S side of the harbor has about 46m of berthing space with a reported depth of about 3.4m alongside.

There are several other small wharves with depths of about 1.5m alongside.

Bird Islands consist of Hertford Island and Ciboux Island, both long, narrow, and composed of precipitous sandstone. They extend approximately 4 miles NE of Cape Dauphin and terminate in Ciboux Shoal, with a least depth of 4.6m. Shallow water continues to the NE for an additional 2 miles. Hertford Ledge, with 0.9 to 2.1m of water on it, extends from Hertford Island inshore towards Cape Dauphin, effectively blocking all but a narrow 10.1m channel.

Both the N and S breakwaters are marked at their respective heads by a light shown from a red mast. These lights are operated from May 1 to December 15.

A lighted bell buoy is moored a little over 0.75 mile E of the N breakwater. The outer limits of the dredged approach channel are marked by spar buoys and both sides of the inner channel are also buoyed.

Caution.—The harbor cannot be entered during strong winds from the E. The depths in harbor are subject to change and the navigational aids may be moved to best follow the channel. Local knowledge is necessary to enter. Ice restricts navigation from January to April.

White Point (46˚53'N., 60˚21'W.), formed by two islets close offshore, is steep-to. A government wharf is situated on the W side of the point, about 0.8 mile S of the two islands. It is 85m long, with a least depth of 6.1m alongside the outer face.

Cape Egmont (46˚51'N., 60˚18'W.), about 3 miles SE of White Point, is a comparatively low granite headland nearly bare of trees. At New Haven in Hungry Bay, about 1.8 miles SSW of Cape Egmont, there are small craft facilities. A lighted whistle buoy is moored about 0.6 mile E of New Haven.

Neils Harbour, about 1 mile S of New Haven, has small craft facilities protected by a small breakwater. A light, maintained from April 1 to January 1, is shown from a white square tower on Neil Head, the N entrance point. A lighted bell buoy is moored about 1 mile SE of Neil Head.

Ingonish Island (46˚41'N., 60˚21'W.), about 61m high, is rocky and surrounded by dangers. A spit and reef extends between the island and Jackson Point (MacLeads Point), on the mainland about 0.5 mile NW.

Ingonish Bay is divided into North Bay and South Bay by a long, narrow, and precipitous strip of land known as Middle Head. The mountains at the head of North Bay are the highest on this coast and Cape Smoky, the S entrance point of South Bay, rises steeply to a height of 289m. Violent squalls sometimes precipitate from these highlands and come down on the bay with great force.

There is a breakwater, 158m long with a depth of 4.9m at its outer end, extending SW from The Point, a spit about 0.3 mile SW of Jackson Point, in North Bay. A government wharf, 122m long with a depth of 1.8m at its outer end, lies close N of the breakwater. A drying shoal lies off the S side of the wharf. A light is shown from a mast on The Point.

Anchorage.—Small vessels can anchor SW of the breakwater in convenient depths, sand over hard mud. Larger vessels can anchor W of Jackson Point according to draft, however, there are some rocky patches and local knowledge is recommended. None of the anchorages W of Jackson Point are safe in E winds and vessels should clear the bay if the weather increases from this direction.

Caution.—Fisherman Rock, with a depth of 3.7m, lies about 0.1 mile SE of Middle Head and is a danger to vessels rounding this headland too closely.

5.6 Ingonish Harbor (46˚38'N., 60˚23'W.) (World Port Index No. 5940) is a fishing center which is separated from South Bay by a gravel beach which protects the harbor area. Access is through a channel marked by spar buoys which had a least depth of 4.9m, although it has been reported that due to shifting sands there may be less water than charted on the N side of the entrance channel.

The government wharf on the N side of the harbor, just within the entrance, is in ruins. The government wharf on the S side of the harbor had a reported depth of 7.9m alongside the outer face. There are several other wharves, including a fish plant wharf, with depths of 3 to 3.7m alongside.

Ingonish Harbor Light is shown from a skeleton tower on the beach on the S side of the harbor entrance. The light is maintained from May 1 to December 15. A lighted whistle buoy is moored about 1.3 miles NE of Cape Smoky.

The coast from Cape Smoky to Bentinck Point, about 12.5 miles SSW, slopes more gently to the sea and has a more fertile appearance with the mountains receding inland and leaving space for scattered farms.

With offshore winds good landing for boats can be had at the brooks at Wreck Cove, 6.5 miles S of Cape Smoky, and at Rocky Brook, 3 miles farther S. At Briton Cove, 2.75 miles SSW of Rocky Brook, there is a breakwater 96m in length with a depth of 1.5m at its head. Close S is another breakwater, 183m long, which forms a basin providing shelter for small craft. A lighted buoy, 0.25 mile SSE, indicates the approach.

St. Anns Bay

5.7 St. Anns Bay (46˚23'N., 60˚25'W.) indents the coast between Bentinck Point and Cape Dauphin, about 5.5 miles SSE. The W shore of the bay is fringed with shoal water to a distance of 0.4 mile and cliffs of white gypsum can be seen about 1.5 miles SW of Bentinck Point. Island Point, about 4 miles farther SSW, appears as an island, but is actually a small wooded peninsula joined to the mainland by stony beaches enclosing a pond.

Cape Dauphin is high, steep, and forms the termination of the peninsula on the E side of St. Anns Bay.

Aspect.—Ciboux Island Light is shown from a white tower situated on the summit near the N end of the island.

Anchorage.—Good anchorage is reported in St. Anns Bay in a depth of 22m, mud, about 0.5 mile off the SE shore with Beach Point Light bearing 220˚, distant 2.3 to 3 miles. Vessels are recommended to clear the anchorage in NE winds.

St. Anns Harbour

5.8 Beach Point (46˚17'N., 60˚33'W.), at the S extremity of a long, narrow, sandy spit extending from the W shore of St. Anns Bay, forms a natural breakwater that completely shelters St. Anns Harbour. A light is shown from a red framework tower, 6m high, at the head of the bay.

Tides—Currents.—The maximum rate of the tidal current in the entrance to the harbor is 3 to 4 knots. The sea breaks heavily on the bar in strong NE winds, particularly on the ebb. Springs rise 1.5m and neaps rise 1.2m.

Depths—Limitations.—There is a wharf at Beach Point with an L-head 12m long and a depth of 4.3m alongside.

There is an L-shaped wharf at Englishtown, about 0.6 mile S of Beach Point, 53m long, 29m wide. The depth alongside of the head of the pier is 3.7 to 5.8m. The berthing length across the outer face is about 45m. The S terminal of the ferry is close N.

On the E side of South Gut there is a wharf in ruins. Pontoons are moored to the shore.

Aspect.—St. Anns Mountain rises steeply from the shore to a height of 343m on the W side of the entrance and forms a good mark from the bay.

A buoyed channel, 45m wide, with a limiting depth of 4.6m, has been dredged through the bar NE of Beach Point. Vessels are recommended to have local knowledge before attempting it. The fairway passes close W of Bar Point.

Anchorage.—Vessels can anchor in a depth of 14.6m, mud, W of Port Shoal and out of the tidal currents running through the entrance. A more sheltered anchorage is off Seymour Point, in the W part of the harbor, where vessels can anchor as conveniently as in the cove NW of Monro Point.

Caution.—Port Shoal is a mud bank with a least depth of 2.1m located just within and on the W side of the entrance.

Shipyard Rock, with a depth 3.4m, lies off Seal Cove in the SW part.

McLeod Point, marked by a gypsum cliff, is located in the S part of the harbor and divides the head of the bay into South Gut and North Gut. A shoal, with a depth of 3.4m on its E side, extends about 0.35 mile NE of the point.

A cable ferry operates from Beach Point across the entrance to the harbor. When the ferry is docked, the cable has a maximum clearance depth of 7.6m. Each ferry dock displays a green or red light. Green is shown when ferry is docked; red shows when in transit.

Mariners are cautioned not to proceed across the ferry route unless green lights are visible.

Gales from the NE can be violent in this harbor anytime after mid-August.

Table Head to Sydney

5.9 Table Head (46˚20'N., 60˚22'W.), on the E side of Great Bras d'Or, about 2.5 miles ESE of Cape Dauphin, is precipitous, with shoal water extending 0.2 mile off. Table Rock, 6.4m high, lies on the shoal ground a little over 0.1 mile W of the head.

The shore SW of Table Head is composed of red cliffs and is moderately conspicuous.

Aspect.—The coast E of Table Head changes considerably, with the mountains and high shore to the NW giving way to moderate heights and lower coastal cliffs of sandstone and shale. Shoals extend up to 1.5 miles from the shore and in many cases are steep-to on their seaward sides, rendering approach to the coast difficult in fog.

Note.—Great Bras d'Or and its approaches are described in paragraph 5.21 with Bras d'Or Lakes. Little Bras d'Or is included with St. Andrews Channel in paragraph 5.22.

Point Aconi (46˚20'N., 60˚18'W.), the NE extremity of Boularderie Island, lies about 3 miles ENE of Table Head and consists of eroding cliffs formed by coal strata. A chimney, 106m high, about 2 miles SW of Point Aconi, is marked by white strobe flashing lights. A rocky shoal, on which is located Aconi Islet, about 12m high, extends nearly 1 mile NE of the point and continues S to the entrance of Little Bras d'Or.

Aspect.—Point Aconi Light is shown from a white round tower, 12m high. A lighted whistle buoy, marked "K6", is moored about 2.3 miles NE of Point Aconi on the approximate alignment of Little Bras d'Or approach range. The buoy is removed during winter.

Adler Point (46˚19'N., 60˚17'W.), the E entrance point of Little Bras d'Or, lies about 1.5 miles SSE of Point Aconi. Between Alder Point and Cranberry Point, about 4.5 miles SE, the coast is fringed by shoal water extending in places over 1 mile offshore. Numerous dangerous rocks, awash, or with only 1 meter or less water, lie offshore along this stretch of the coast and vessels are recommended not to approach the land within 2.5 miles without local knowledge.

Shag Rock, 2.7m high, lies about 0.4 mile offshore, about 1 mile ESE of Alder Point and marks the outer end of a dangerous rocky spit. Bonar Rock, 0.6m high, lies about 0.4 mile offshore, about 1.3 miles SSE of Shag Rock.

Approaches to Sydney Harbour

5.10 Low Point (46˚16'N., 60˚08'W.), consisting of low cliffs, forms together with Cranberry Point, about 3.5 miles to the W, the entrance to Sydney Harbour, an inlet located on the S shore of Spanish Bay.

The harbor is easy to access, being approached straight from the sea, and is capable of accommodating a large number of vessels; the least depth in the channel is 11.6m.

Aspect.—Low Point Light is shown from a white octagonal tower on Low Point.

The main approach range lights are shown from the vicinity of Dixon Point on the E side of North West Arm, and in line bearing 213˚34', lead into the harbor from seaward. The front light is shown from a white octagonal tower and the rear light from a white square tower. The lights are only visible when in alignment.

A light and whistle buoy is moored on the line of the main approach range, about 2.3 miles N of Low Point.

A lighted bell buoy is moored a little less than 1 mile NE of Cranberry Point and marks the N limit of the shoal water NE of Cran Rock.

Caution.—Cran Rock, with a depth of 5.8m, lies about 0.5 mile NE of Cranberry Point, with shoal water extending in the same direction for another 0.35 mile.

Petrie Reef, which nearly dries, lies about 1 mile SW of Low Point. Livingstone Shoal, with a least depth of 1.2m, lies about 2 miles SW of Low Point.

A number of submarine cables crossing Cabot Strait extend N and NE from a position 1.5 miles W of **Cranberry Head** (46˚16'N., 60˚07'W.)

Sydney Harbour (46˚09'N., 60˚12'W.)

World Port Index No. 6000

5.11 Sydney Harbour consists of an inlet running SSW from the coast for about 5 miles to Point Edward, where it divides into North West Arm and South Arm. The navigable channel is restricted to 0.5 mile within the entrance, but remains straight and easy of access.

The town of Sydney Mines is on the W side of the entrance, about 1.5 miles within Cranberry Point. The port of North Sydney is on the W side, within North West Arm, and Sydney is on the E side of South Arm.

The principal imports are fish and fish products and North Sydney exports general freight, asphalt, and cement.

Ice.—The harbor starts to freeze about January 20 and is usually free of ice by April 1. Powerful icebreakers are stationed at Sydney and keep the port open for year round use.

Tides—Currents.—Spring tides rise around 1.5m and neaps rise about 1.2m. LWS usually maintain a height of 0.2m or more over datum in the approach channel.

Depths—Limitations.—The least depth in the entrance channel is 11.6m. North West Arm has general depths of 11 to 14m in the channel and South Arm has a least depth of 14.6m on the range line.

Northwest Bar, which dries, extends with shoal water about 0.4 mile into the channel on the NW side, about 3 miles above the entrance. Southeast Bar, which dries, extends with shoal water about 0.8 mile into the channel the same distance above the entrance. The navigable width between the two is just under 0.5 mile.

Northwest Arm Shoal, with a least depth of 7.3m, lies about 0.8 mile W of Point Edward.

At North Sydney there are several piers available. The public wharf, about 0.3 mile W of the Northwest Bar breakwater, is 143m long and 31m wide, with alongside depths of 7.3 to 7.9m. About 0.4 mile further WSW is the CN Marine Terminal (freight shed and loading elevator), which has a length of 244m and alongside depths of 5.5 to 8.8m.

Repairs are available 0.5 mile SW of the breakwater on Northwest Bar. There are five repair cradles, the largest of which is 38m long and 10.6m wide at the bilge. It can accommodate vessels with a draft of 3.6m forward and 4.4m aft, and a displacement of 550 tons. Hull and machinery repairs can be undertaken.

Port facilities for Sydney are shown below:

Berth	Length	Depth
Sydport—Main Jetty		
Outer Face	259m	10.9m
Inner Face	244m	7.5m
Basin	228m	6.0m
West Wall		
Quay N of Basin	183m	3.0-6.0m
International Piers		
Coal Pier	247m	14.4-15.0m
Steel Pier No. 3	213m	11.5m
Steel Pier No. 4	218m	11.5m
Public Wall		
West face	242m	9.2m
South face	91m	4.5m
Irving Oil	73m	7.0m
Petro Canada	23m	6.7m

Aspect.—A lighted bell buoy is moored about 1.3 miles SE of Cranberry Point on the alignment of the entrance range.

Southeast Bar is marked near its outer end by a light.

Lighted buoys are moored on the edge of the shoal water off Northwest Bar and Southeast Bar.

A lighted buoy is moored about 0.3 mile N of Point Edward.

Range lights, in line bearing 162˚32', are shown from the pier 0.5 mile SW of the International Piers. Both lights are shown from triangular skeleton towers and lead up South Arm.

Buoys and lights mark the shoal areas and several piers in South Arm.

Pilotage.—Pilotage is compulsory. Vessels bound for Sydney Harbour must report their ETA in GMT by radiotelephone or radiotelegraph to Pilots Cape Breton 24 and 12 hours before arrival at the Sydney Pilot grounds. A vessel's ETA must be confirmed or corrected not more than 6 hours later.

The position of the pilot boarding station for Sydney Harbour is 46˚20.5'N, 60˚07'W. The pilot boat is equipped with VHF radio and guards channel 16 and 11. In rough weather the pilot boat may direct the vessel in toward the lighted buoy N of Low Point, where boarding may be accomplished under better conditions.

The master of a vessel that is to depart or make a move within the compulsory pilotage area of Sydney must report to Pilots Cape Breton 4 hours prior to such ETD. The time used should be local.

Anchorage.—Good open anchorage is available off North Sydney S of the charted line marking the anchorage limits at Sydney Mines. This roadstead is open to the NE and may not be safe in strong winds from that quadrant.

There is sheltered anchorage off Fishery Cove in 11 to 12.8m, mud, protected by Southeast Bar. Good anchorage is also available nearly any place in South Arm, which is likewise protected by Southeast Bar. Several shoal areas exist in the upper reaches of South Arm and caution is advised.

Caution.—Vessels are cautioned not to anchor in the vicinity of the many submarine cables crossing the harbor. Anchorage is prohibited in the harbor entrance, to the N of Sydney Mines, as indicated on the chart, due to numerous cable crossings.

North Sydney

Sydney to Cape Perce

5.12 From Low Point the shore trends ESE with shoal water extending up to 0.75 mile offshore. The town of **New Waterford** (46˚16'N., 60˚05'W.) is a coastal town; two breakwaters provide an entrance 18m wide into a small boat harbor, which dries at LW. A public wharf, 30m long at the face, lies on the S side close within the entrance.

North Head (46˚14'N., 60˚02'W.), about 4.5 miles ESE of Low Point, is formed of low cliffs about 2.3m high. David Head Shoal, with a least depth of 4.9m, lies about 0.8 mile NW of North Head.

Indian Bay, entered between North Head and Brian Point, about 1.5 miles SE, is completely open to NE winds and swell, but anchorage can be taken in about 9.1m, with offshore winds and fair weather. Lingan Beach extends 1 mile NW from the S shore of the bay and leaves only a small boat entrance at its N end, having a depth of 2.1m under a road bridge to Bridgeport Basin, a shallow pond extending 2 miles to the W.

A power station, which is a large concrete structure, is conspicuous about 0.6 mile SW of North Head. White strobe lights are shown from two 158m high chimneys.

Table Head (46˚13'N., 59˚57'W.), about 12m high, is marked by the township of Glace Bay and is bordered by shoal water to a distance of 0.5 mile. A chimney stands on O'Neils Point, about 1 mile to the W.

Glace Bay, entered between Table Head and Macrae Point, about 3.5 miles ESE, has no safe anchorage because of shoal water and bottom characteristics. Reefs extend from Macrae Point to Wheland Point, about 1 mile WSW, on the SE shore.

5.13 **Glace Bay Harbor** (46˚12'N., 59˚57'W.) (World Port Index No. 6010) is located on the SW shore of Glace Bay and is entered between two breakwaters using a 30m wide channel dredged to 3.7m; silting occurs in the channel.

A power plant chimney, marked by red lights, lies 1.5 mile S of the harbor entrance. A second chimney, 109m high and marked by white strobe lights, lies 0.8 mile further S. Five radio towers lie close E of Wheland Point.

Two lights, in line bearing 208.5˚, lead to the harbor entrance. Both lights are shown from the S side of the harbor from triangular skeleton towers. A light is also shown from a tower on the outer end of North Wharf.

A lighted buoy is moored on the alignment of the approach range to Glace Bay Harbor.

North Wharf, on the NW side of the harbor, is 386m long and used primarily by fishing vessels. There are several smaller wharves on the SE side of the harbor.

Cape Perce (46˚10'N., 59˚49'W.), the NE extremity of the mainland area of Cape Breton Island, is a precipitous headland with cliffs of coal strata and sandstone rising to a height of 30m.

Schooner Rock, with a least depth of 1.5m, is the shallowest part of a reef which extends up to 0.4 mile from the N side of Cape Perce, and rocks with depths of less than 1.8m lie N and E of the headland.

Cow Reef, which dries 0.3m, lies 0.75 mile SW of Cape Perce. A lighted bell buoy is moored 0.5 mile to the E of this danger.

Flint Island to Scatarie Island

5.14 Flint Island (46˚11'N., 59˚46'W.), 1.75 miles E of Cape Perce, is formed of broken sandstone rising to a height of 17m, with precipitous shores. Part of the island is completely separated, except by a narrow reef, and shoal water lies up to 0.5 mile in all directions from the middle of the mass.

The passage between Flint Island and Cape Perce has a navigable width of about 1 mile with a least depth 14.9m. Tide rips frequently form over the uneven bottom SW of the island, and in the channel to the W the irregular tidal currents attain a rate of 2 knots.

Flint Island Light is shown from a white octagonal tower on the largest part of the island.

Morien Bay, entered between Cape Perce and Cape Morien, about 2.5 miles S, has flats of sand and mud at its head with shoal water extending 1 mile seaward of these areas. It is not a safe anchorage, being completely open to the E winds and swell.

Caution.—A danger area with a radius of 1 mile, lies with unexploded bombs, about 13.5 miles E of Flint Island.

Port Morien (46˚08'N., 59˚52'W.), for small vessels, is situated on the N shore of Morien Bay, about 3.5 miles SW of Cape Perce. It is protected by two breakwaters which enclose a small basin, 71m wide, and a public wharf. Depth in the basin is 3m. The submerged ruins of an abandoned coal pier, with a depth of 0.3m, lie about 150m SE of the breakwaters.

Port Morien Light (round mast, 3m high) is exhibited on the outer end of the wharf, from May 1 to December 15.

Ice appears in Morien Bay around mid-February and may persist until late April.

Cape Morien (46˚08'N., 59˚48'W.) is bold, with sandstone cliffs about 43m high on the SE side. It is the NE extremity of a peninsula separating Morien Bay and Mira Bay, and is connected to the mainland by a shingle isthmus and a road bridge.

Mira Bay, entered between Cape Morien and Moque Head, about 7.5 miles S, is entirely open to the E and not a safe anchorage. Mira River, at the head of the bay, can be navigated by small craft for about 23 miles to the lakes inland.

The buoyed channel, over the bar at the river mouth is shallow, about 0.3 to 0.6m, but is navigable by small boats under power, with local knowledge and under favorable conditions. Currents are fairly strong and continue 2 to 3 miles upstream; SW is reported to be 1 to 2 hours before HW. Thereafter, the river is navigable to lakes some distance inland. A bridge, with floodlit swing span, crosses the river near its mouth; signal lights, privately maintained, are shown from a tower at the N end of the bridge. Green light denotes bridge is open. Red light denotes bridge is closed.

The open bridge provides an entry width of 7.3m and the bridge operator is available (seasonal) on General Radio Service, channel 11.

A public wharf, 15m long, lies on the N shore of the river close within its entrance.

Mira Bay marks a change in the character of the coast and the topography of the region. The undulating land and the long ranges of sandstone cliffs, which form the N side of the bay, give way to small round hills rising among swamps, shallow ponds, and clumps of small trees.

Scatarie Island (46˚02'N., 59˚40'W.), the NE extremity of which is the E land off Cape Breton Island, is similar in appearance to the adjacent mainland. The island is not permanently inhabited, but is frequented by fishermen in summer. The highest summit, near its W end, reaches an elevation of 58m. A sharp-peaked hill, known as Steering Hummock, rises to a height of 45m just within West Point, the W extremity.

The S and SE coasts of Scatarie Island are indented by many coves, but these are exposed to a heavy and nearly constant swell which limits their use to only fishermen. Northwest Cove, on the N side of the island, provides a reasonably sheltered anchorage, but the holding ground is poor and it is dangerous in N winds. A submarine power cable terminates in the cove.

There is a breakwater, 62m long on the E side of the cove, with a depth of about 3m at its outer end. Eastern Harbor, at the E end of the island, lies between the NE point and Hay Island, but is shoal, rocky, and provides a very insecure anchorage within the reefs.

Scatarie Island Light is shown from a white tower, 14m high, on the NE extremity of the island. There are two white dwellings near the light and a fog signal is made from the lighthouse.

Cormandiere Rocks, 0.75 mile NE of the above light, are small but bold, and from 2 to 6m high. There is no safe passage between them and the island. Wattie Rock, with a depth of 6.4m, lies about 1.3 miles SSE of the same light.

5.15 Main-a-Dieu Passage (46˚00'N., 59˚48'W.), between Scatarie Island and the mainland to the W, is intricate because of the numerous shoals in its vicinity. Dense fogs are common and the passage is dangerous during bad weather as there is no shelter from the heavy seas which result from S and E winds. It is mostly used by fishing vessels and should not be attempted by large vessels except during very favorable conditions and only in daylight hours.

Great Shag Rock, lying about 0.4 mile NE of **Moque Head** (46˚00'N., 59˚49'W.), and Little Shag Rock, lying about 0.3 mile NNW of West Point, are both 3.7m high, lie on each side between Moque Head and West Point and must be clearly seen to make the passage safely. The channel is further obstructed by a 7.3m patch reducing the deep water fairway to a width of 0.25 mile W of Little Shag Rock.

Bar Reef, which dries over a distance of 0.35 mile, is located about 1 mile SSW of West Point, and has on it Barstone, a large rock about 2.4m high. Helen Rock, a submerged reef, lies up to 0.6 mile ESE of Barstone and is near the edge of the channel.

Main-a-Dieu Light is shown from a white circular tower, 9.1m high, on West Point.

A lighted bell buoy is moored about 0.5 mile S of Moque Head and close S of Mad Dick Rock, with a depth of 0.6m.

A light and whistle buoy is moored about 1 mile ESE of Barstone and about 0.5 mile seaward of Helen Rock.

Caution.—An isolated shoal, with a depth of 7.3m, lies E of the S approach to Main-a-Dieu Passage, about 2.8 miles SE of West Point.

5.16 Main-a-Dieu Harbor (46˚00'N., 59˚51'W.), about 0.8 mile W of Moque Point, is a semi-circular cove on the NW side of **Main-a-Dieu Bay**, with depths of 2.4 to 4.3m, mud bottom. A breakwater extends from both the E and W side of the harbor entrance and there are several small wharves in the cove. The approach to the harbor is buoyed, but is difficult and dangerous at times and it is advisable not to enter without local knowledge. Harbour Rock, with a depth of 2.1m, lies in the middle of the entrance and can be passed on either side.

Ice.—Ice forms in Main-a-Dieu Harbor in late January and may remain until mid-April. Field ice is present in the bay until March or April, depending on the winter.

Depths—Limitations.—The public jetty at the head of the harbor is cross-shaped and has about 46m of berthage alongside. The outer part of the wharf, 30m long, has two sides, 15m in length, with depths 2.4 to 3.4m alongside.

Southeast Coast of Cape Breton Island

5.17 Cape Breton (45˚57'N., 59˚47'W.), the SE extremity of Cape Breton Island, is low, rocky, and covered with grass. The cape is steep-to on its NE side, but a rocky patch with a depth of 2.1m lies about 0.8 mile to the SE. Ile aux Cannes, just N of the cape, is 19m high. A reef, with an above-water rock near its extremity, extends about 0.2 mile SE from the island.

Between Cape Breton and Cape Gabarus, 15 miles to the SW, the land is of moderate height and the coast is indented with coves and small harbors. The hills in the background are about 61m high.

Portnova Islands, a closely compacted group, lie on the outer end of a spit with general depths of less than 11m, that extends about 1 mile S from Cape Breton. The highest island has an elevation of 14m and is precipitous. Chameau Rock, which dries 0.6m, lies midway between these islands and the cape, and is surrounded by shoal water. A rock, with a depth of 4.1m, lies about 0.2 mile SW of the Portnova group.

A lighted whistle buoy is moored about 1 mile SE of Portnova Islands.

Tides—Currents.—A current of up to 1 knot, running WSW, is often experienced about 3 miles off Cape Breton and the coast SW. Closer to the shore its effects are not so frequently felt.

Aspect.—The coast between Cape Breton and Lorraine Head, about 6 miles SW, is indented by three small coves used as fishing harbors. These are namely Baleine Cove, Little Lorraine, and Big Lorraine, all of which require local knowledge to enter.

Wildcove Shoal, with a depth of 4.6m, and White Rock, with a depth of 5.5m, lie about 0.8 mile SE of Big Lorraine Harbor.

Little Lorraine Light is shown from a white round tower, red top, 5m high, on the W entrance point of the harbor. This light is in operation from May to December only.

A lighted bell buoy is moored about 0.5 mile SW of the entrance to Baleine Cove.

Lorraine Head (45˚55'N., 59˚55'W.), a rocky bluff, 20m high, is the SE extremity of a large headland forming Big Lorraine to the E and Louisburg Harbor to the W. Lorraine Rock, with a least depth of 2.7m, lies about 0.2 mile SE of the head.

Off-lying Shoals.—Curdo Bank, with a least depth of 18.3m, rock, lies 8.5 miles SE of Cape Breton.

Scatarie Bank, with a least depth of 21.9m, rock and coral, lies about 24 miles E of Cape Breton. The bottom W of this shoal is very irregular.

5.18 Louisburg (Loiusbourg) (44˚55'N., 59˚58'W.) (World Port Index No. 6020) is entered between Lighthouse Point, cliffy, about 1.5 miles SW of Lorraine Head, and Rocky and Battery Islands, about 0.3 mile to the S. The harbor is divided into Southwest Arm and Northeast Arm, the latter containing the facilities at Louisburg and also the best anchorages in the port. In general, the harbor is used by small to moderate sized vessels and coasters. It provides the only shelter from E winds on the SE coast of Cape Breton Island.

Ice.—In general, local ice formation in the Louisburg harbor area is of minor significance. On occasion, during the period February to April, loose gulf pack ice may drift across its approaches.

Tides—Currents.—Mean spring tides rise about 1.5m and mean neap tides rise about 1.2m. Winds can affect the tidal rise to some extent.

Depths—Limitations.—In general, vessels up to 5,000 dwt can be taken to the wharf. Drafts to 9.1m can be taken to the anchorage at HW.

The least depth in the fairway to the anchorages in Northeast Arm is 9.1m. The channel is restricted to a width of about 122m in the approach to the harbor and continues in a sharp turn which may require assistance to some single screw vessels when negotiating.

The following piers and jetties listed from the SW to NE are situated at Louisburg:

Berth	Length	Depth
National Sea Products (45˚55'N., 59˚58.6'W.)	91m	3.7-5.5m
Public Pier (0.5 mile ENE)		
SW/NE sides	161m	—
T-Head	61m	8.2m

At the E end of town is a quay wall, 213m long, with a depth of 4m alongside.

Harbour Shoal, with a least depth of 7m lies approximately 0.5 mile SSE of Lighthouse Point and S of the normal approach. The sea breaks on this shoal in heavy weather.

Depths of 3.3m and less lie on the S side of the channel close NE and N of Island. This shoal bank is steep-to and vessels must exercise caution not to be set down on it.

No attempt should be made by boats or vessels to pass between Rochefort Point and Battery Island, as this area is very shallow with large boulders, and it breaks heavily in any swell.

Battery Shoal, with a least depth of 5.2m, lies on the W side of the channel in the entrance to Northeast Arm. Depths of less than 9.1m surround this danger to a distance of up to 0.1 mile.

Aspect.—The Fortress of Louisburg, about 1.3 miles SW of the entrance has been restored. The spire in the middle of the fortress is conspicuous.

Three oil tanks, each about 19m high, are situated about 0.1 mile W of the National Sea Products jetty; two of these tanks are conspicuous from seaward.

The entrance range lights lead into the harbor from seaward. These lights are shown on the W side of Southwest Arm from triangular skeleton masts.

Pilotage.—Pilotage is compulsory. Pilots board 5 miles to seaward of the harbor entrance.

Regulations.—Underwater exploration or salvage operations are prohibited without permission of the harbormaster.

Anchorage.—The best anchorage is in Northeast Arm in about 10.1m, mud. There is some swell after E gales, but the holding ground is good and the sea is smooth. The W shore of the arm is not well sheltered.

Caution.—During the winter, all buoys are replaced by spar buoys more able to withstand the pressure of ice. These spars cannot be depended upon in respect to their charted positions, as heavy drift ice will occasionally cause them to shift.

Gabarus Bay to Michaud Point

5.19 White Point (45˚52'N., 60˚00'W.), low and rocky, with small cliffs, is about 7m high and is fringed by reefs. Simon Point, about 1.3 miles W, is bordered by shoal water extending nearly 0.5 mile offshore and which is steep-to on its seaward side.

Gabarus Bay, entered between White Point and Cape Gabarus, about 5 miles SW, is generally free of dangers except for some rocks near the shore. Among these is Kennington Rocks, of bare slate and 8.5m high, which lie off Kennington Cove on the N shore of the bay. Harbour Rock, a low ledge above-water, lies near the head of the bay, and a rocky shoal, with a depth of 5.4m, lies about 0.5 mile NE. The N shore is generally high and steep.

Rouse Point (45˚51'N., 60˚08'W.), on the S side of Gabarus Bay, nearly 3 miles NW of Gabarus Point, is a wooded peninsula about 27m high with slate cliffs. It is steep-to, except on its E side, where a reef extends seaward for about 0.1 mile. Harbour Point, about 0.5 mile W of a small peninsula with low slate cliffs, and it forms the E side of Gabarus Cove, in the SW corner of the bay. A breakwater, in a state of disrepair, extends about 108m SW from the W side of Harbour Point. The only suitable berth, 24m along the outer inside face, has a least depth of 3.7m. Foul ground lies close off the N side of the breakwater. The ruins of an old breakwater lie close N of the present one.

Aspect.—Rouse Point Light is shown from a white rectangular building situated on the point.

Gabarus Light is shown from a white square tower on Harbour Point.

Anchorage.—In Gabarus Cove, within Harbour Point, there is a fair weather anchorage for small to medium sized vessels in about 7.3m, sand and clay. It is unsafe here or in any other part of the bay in E or NE gales.

Cape Gabarus (45˚49'N., 60˚04'W.) is low and rocky with a reef extending 0.3 mile offshore to the NE. Green Rock, 11m high, lies surrounded by reef, about 0.5 mile ESE of the cape. A lighted bell buoy is moored about 0.7 mile NE of this rock.

Caution.—Numerous ledges and rocks, above and below-water, including several islets, lie on a shallow shelf which extends up to 1.5 miles offshore between Cape Gabarus and Winging Point, 3 miles SW. Vessels should keep seaward of this area and no attempt should be made to pass inshore of any of the buoys along this part of the coast.

From Cape Gabarus to Michaud Point, the 30 miles of coast is low, rocky, and barren in appearance. There are many lakes and ponds near the shore, protected by gravel beaches and some rocky islands and ledges. Occasionally, there are reddish clay cliffs 21 to 27m high, but from seaward there are few distinguishable features.

A current of up to 1 knot, running WSW, is often experienced about 3 miles off this coast. It is not so frequent closer to shore.

Guyon Island (45˚46'N., 60˚07'W.), about 1 mile S of Winging Point, is low and bare of trees. Shoals extend up to 0.4 mile E of the island, and a rock, awash, lies about 0.5 mile W of it. A light is shown from a white tower near the center of the island.

A lighted whistle buoy is moored about 2.8 miles E of Guyon Island.

Fourchu Bay (45˚46'N., 60˚11'W.), which lies between Guyon Island and Fourchu Head, affords no shelter and is dangerous to approach without extensive local knowledge. The shores of the bay are low and marshy, a general trait of the SE coast. Numerous rocks, shoals, and reefs lie throughout the bay, and Gabarus Round Rock, 6.7m high, lies on a shoal about 1.5 miles SW of Guyon Island.

Fourchu Head (45˚43'N., 60˚14'W.), low and connected to the mainland by a breakwater, forms the S side of the entrance to Fourchu Inlet. Fourchu Rock, 10.7m high, lies about 1.5 miles ENE of the head is narrow, covered with moss, and conspicuous, and has several shoal patches in its vicinity. Flat Ledge, which dries 0.6m, lies 0.75 mile ENE of the head and divides the entrance to the inlet into two channels.

Fourchu Harbor, at the head of Fourchu Inlet, is entered by a buoyed channel. The channel varies in width from 24 to 100m, with rocks and shoals on either side and a least reported depth of 1.5m, which leads over the bar and into the harbor.

The L-shaped public pier in Fourchu Harbor is 52m long, with a berth 28m long, and a depth of 3m alongside the pier head. Two lights, in line bearing 255˚, lead into the inlet but local knowledge is required in the approach.

Fourchu Head Light is shown from a white circular tower with two red horizontal bands on Fourchu Head. A lighted bell buoy, marking the W approach, is moored about 0.5 mile E of the light.

Pot Rock, with a least depth of 3m, lies 1.25 miles SE of Fourchu Head and breaks in heavy weather. A lighted whistle buoy is moored close S of Pot Rock.

Caution.—A submerged power cable lies between Guyon Island and Belfry Gut, about 3 miles NNE of Fourchu Head.

From Fourchu Head the coast trends SW for about 2.5 miles to Framboise Cove, an open bight which affords no shelter because of its low coast and marshy interior. Framboise Shoal (Haliburton Shoal), with a least depth of 5.2m, lies with two heads across the entrance of the cove and several other shoal patches lie within. Large vessels should keep clear of this area.

Capelin Cove, about 8.5 miles SW of Fourchu Head, has general depths of 3 to 5m and affords shelter to boats in NW winds.

St. Esprit Island (45˚37'N., 60˚29'W.), partly wooded and 9m high, is joined to the mainland by a partly drying reef of rocks and shoals. Although there is a boat passage between the island and the shore, no vessel should attempt it. A light is shown from a skeleton tower on the NE end of the island.

Note.—The E boundary of the Strait of Canso and Eastern Approaches Vessel Traffic Services (VTS) Zone is established by a line from the S shore of Cape Breton Island at 45˚38.4'N, 60˚29.3'W, bearing 181˚ to the Territorial Sea Boundary. The VTS Zone regulations are mandatory.

Caution.—Numerous coastal dangers lie from about 2 miles E of St. Esprit Island, SW to the vicinity of Michaud Point, and only small vessels with local knowledge should attempt to make an approach hereabouts.

Bad Neighbour Shoal, with a least depth of 1.2m, lies 1.5 miles SW of St. Esprit Island, but it only breaks in bad weather. A lighted whistle buoy is moored about 0.8 mile S of the shallowest part of Bad Neighbour Shoal.

Black Breaker Rock, with a least depth of 2.7m, lies midway between St. Esprit Island and Michaud Point, and about 0.8 mile offshore.

L'Archeveque Cove, 3.5 miles W of St. Esprit Island, provides shelter for small craft but nearly dries in the approach. Buoys mark the channel from about 1 mile offshore, however, local knowledge is recommended.

Grand River, entered between Black Point, low and sandy, and Red Head, 21m high, about 4.8 miles W of St. Esprit Island, is available only to small craft with local knowledge. The river mouth is narrow and obstructed by a bar with a depth of 0.9m, but the channel within and a wharf on the E shore carry depths of 1.8m. The current is rapid in the river and its entrance. On the E shore of the river, near the mouth, there is a wharf 61m long extending to a depth of 1.8m.

Basque Islands, three in number, lie 1.5 miles ENE of Michaud Point and are low and surrounded with shoal water. Basque Shoal, with a least depth of 6.4m, lies about 1.5 miles ESE of Michaud Point and breaks in heavy weather.

All vessels should give Basque Shoal and Michaud Point a wide berth especially in thick or heavy weather.

Michaud Point and the coast westward of it are described beginning in paragraph 4.12.

Bras d'Or Lakes

5.20 The Bras d'Or Lakes are actually an inland sea located within the confines of Cape Breton Island and divided into two main bodies of water that are completely protected by relatively high rolling hills. There are two natural entrances to the lakes from the N, and a ship canal and lock system from the S.

During the navigational season, approximately May 1 to December 1, the various passages and channels are buoyed and lighted. All buoys are removed before heavy ice sets in and relaid after the break up.

Tides—Currents.—The tidal rise at the N entrances to Bras d'Or Lakes is 0.9 to 1.5m, but within the entrance it decreases rapidly to 0.4m and then 0.2m in the lakes. The arms and the S lake are independent of the tide, but fluctuate 0.3m or so due to weather conditions.

Depths—Limitations.—Bras d'Or Lakes are navigable throughout by vessels not exceeding 5.2m of draft. This draft is controlled by the sills of St. Peters Canal, which have a depth of 5.5m. The canal also restricts lengths to 82.3m for vessels transiting the locks.

Vessels of moderate size can enter by Great Bras d'Or and navigate in most of the N lake channels. Pilots have taken drafts up to 8m over the bar at HW during good weather conditions, but extensive local knowledge is necessary for vessels of this size.

Pilotage.—Pilotage is compulsory for merchant vessels. Vessels must report their ETA by radiotelephone or radiotelegraph to Pilots, Cape Breton, at least 12 hours before ETA at the pilot station. Such ETA transmissions must be confirmed or corrected not more than 6 hours prior to the new ETA. Time is required in GMT.

Vessels proceeding to Great Bras d'Or and requiring a pilot board them at the **Sydney Pilot Station** (46˚20.5'N., 60˚07'W.).

Vessels proceeding to St. Peters Canal and requiring a pilot board them at the Strait of Canso Pilot Boarding Station in Chedabucto Bay. The pilot boats are equipped with VHF.

Caution.—Fish cultures are established in various coves throughout the lake system. These cultures are suspended from rafts and may be moved without prior notice.

Great Bras d'Or

5.21 Great Bras d'Or is the principal of the two N channels, one on either side of Boularderie Island, leading to Bras d'Or Lakes. The channel is entered between Cape Dauphin and **Table Head** (46˚20'N., 60˚22'W.), and is buoyed over a bar with irregular depths of 0.6 to 3.4m, extending NE from Carey Point on the W side of the narrows. The least charted depth in the buoyed channel is 10.6m.

Tides—Currents.—The normal rate of the current is 4 to 5 knots. In the spring after a NE gale, the level of Bras d'Or Lakes may be raised considerably, increasing the rate to 6 knots and forming rips and eddies, especially off Carey Point.

The tidal currents do not set straight through the channel and generally are the reverse of the tide. The out-going current sets to the N after passing Carey Point and generally flows on the rising tide. The in-going current sets towards the E side of the channel and flows on the falling tide.

The entrance to Great Bras d'Or should be made at slack water and should not be attempted without local knowledge.

Aspect.—Range lights, best seen on the chart, stand on Noir Point and help lead through the buoyed channel.

Black Rock Point Light is exhibited from a white square tower, 10.8m high.

A sectored light is shown from a red skeleton tower situated close SW of Black Rock Point Light. The white sector indicates the preferred channel out of Great Bras d'Or.

Within the entrance, Great Bras d'Or runs in an almost straight line to the SW and is generally deep throughout with depths greater than 10m in the fairway. The long reaches allow

a considerable swell and anchorage is insecure, due to the currents, except in the sheltered coves.

An unbroken range of hills, in places 300m high, continues along the NW side from Cape Dauphin to Big Harbor, 15 miles to the SW. High cliffs rise along the W side of Kelly Cove and continue for 1.5 miles to Point Jane.

Anchorage.—Kelly Cove, on the W side of Kelly Point, just within the entrance, has depths of 3.7 to 7.9m and is sheltered from all but SW winds. Good anchorage in 9.1 to 11m, sand, can be obtained off the entrance out of the main tidal currents.

There is a government wharf at New Campbellton, on the E side of the cove, which is 24m long, with a depth of 4.3m alongside its outer face which is 20m long.

There is another government wharf close S of Duffus Point, Boularderie Island. It is made of two L-shaped ends, together having an outer face 84m long, with depths of 3.4 to 4.6m alongside. A light is shown on the head of this wharf.

A bridge and causeway, marked by obstruction lights, crosses Great Bras d'Or close NE of Seal Islands. The navigational span has a vertical clearance of 36m. Strong tidal currents were observed on both the rising and falling tides in the vicinity of the bridge.

A power transmission cable crosses Great Bras d'Or close N of **Munro Point** (46˚10'N., 60˚34'W.). The overhead clearance of the cable is about 35m.

Seal Islands (46˚14'N., 60˚30'W.) are two low and wooded islets separated from the hilly shore NW by a narrow cove closed at its N end by the bridge causeway. Seal Reefs, with a least depth of 0.7m, lie off the E side of Seal Islands and partly extend under the main span of Seal Island Bridge on the NW side of the ship channel. Buoys mark the NE and SW limits of the reef adjacent to the channel.

Lime Rock, with a least depth of 0.6m, lies on the E side of the channel, about 0.2 mile SW of McLean Point. A lighted buoy is moored close N of the rock.

Otter Harbour (46˚13'N., 60˚32'W.) is located on the W side of Great Bras d'Or, about 1.5 miles above Seal Islands. It is sheltered by Otter Island, 6m high and wooded to the S, and by Harbour Point and the islands off it to the N. There is good anchorage for small to moderate size vessels in depths of 9 to 10m, mud, but the available space is only 0.2 mile across.

A light is shown from a square skeleton mast on a white shed situated on an islet in the middle of the head of the harbor. The white sector indicates the preferred channel. The light is maintained from June 1 to October 31.

Man of War Point (46˚11'N., 60˚33'W.) lies on the E shore of Great Bras d'Or, about 1.8 miles SSW of Otter Island.

Big Harbour and Bevis Point, about 3.5 miles SW of Man of War Point, are both located on the W side of Great Bras d'Or. A government wharf lies just N of Ross Ferry, opposite Big Harbour, which is 35m long, with an L-head 15m long and a depth of 4.3m alongside.

Anchorage.—Secure anchorage is available towards the N shore in depths of 13m near the entrance, decreasing to 7m at a position about 0.5 mile farther W, where the harbor divides into two shallow arms.

Mackenzie Point (46˚07'N., 60˚39'W.), lying about 2 miles SW of Big Harbour, shows a light from a skeleton mast close to the shore.

Kempt Head (Kemp Head) (46˚04'N., 60˚40'W.), about 2.5 miles SSW of Mackenzie Point, is the SW extremity of Boularderie Island and divides Great Bras d'Or from St. Andrews Channel. Coffin Shoal, with depths of less than 1.8m and with a rock, awash near its center, lies about 0.5 mile offshore between the head and Coffin Point, about 1 mile NNE.

A lighted buoy marks a shoal with a depth of 6.4m about 1.5 miles NNW of Kempt Head.

The description of Great Bras d'Or continues in paragraph 5.27.

Little Bras d'Or

5.22 Little Bras d'Or, about 5 miles long, is narrow and tortuous. It leads along the E side of Boularderie Island to St. Andrews Channel, but is restricted at its S end by a highway bridge with a vertical clearance of 6.4m.

The N entrance, 1.5 miles S of **Point Aconi** (46˚20'N., 60˚18'W.), which is marked by a light, is closed by breakers when there is a heavy sea, especially when the tidal currents are setting against the wind. There is a depth of 3.8m on the range line in the entrance channel and several places of similar depth within, however, the channel is very narrow and the deepest water is not always near the center. The fairway is not buoyed except near the entrance, and once within there are few aids to navigation.

In general, Little Bras d'Or is only used by coasters and fishing vessels proceeding to Crawley Brook or the Alder Point fish plant, and by small craft and fishing boats proceeding to and from St. Andrews Channel. Local knowledge is strongly recommended.

Tides—Currents.—Tidal currents run in a similar fashion to those of Great Bras d'Or, except that the constant narrowness of the Little Bras d'Or produces a severe tidal effect at maximum ebb that precludes anything but powerful small craft during that time.

Depths—Limitations.—At the mouth of Crawley Creek, on the W side of the entrance there is a government wharf 57m long with an L-head 32m in length, with a depth of 2.7m on the N face and 2.4m on the S face.

The public wharf on the E side of the entrance has a U-shape, with alongside depths of 0.7 to 3.2m.

South of the entrance there are many wharves along the shores of Little Bras d'Or, however, most of them are in ruins or poor condition.

The highway bridge at the S end of Little Bras d'Or has a vertical clearance of 6.4m and is marked by two white lights on each side which indicate the N and S channels.

Aspect.—Two pairs of range lights lead into Little Bras d'Or. The outer approach lights are shown from the shore on the W side of the entrance, and in line bearing 212˚, lead in from the sea buoy. Each light is shown from a triangular skeleton tower.

The inner range lights, in line bearing 183˚, lead into the passage and intersect the approach range about 0.3 mile W of Alder Point. Each light is shown from a skeleton tower. The

front light is about 1 mile S of the entrance and the rear light is about 0.4 mile S of the front light.

A lighted bell buoy is moored nearly 0.6 mile NNE of Alder Point, approximately on the alignment of the approach range lights. A light buoy is moored close N of the intersection of the approach and channel range lights.

Buoys mark the entrance between the last mentioned lighted buoy and the submerged head of the ruined breakwater.

Caution.—The inner range lines are occasionally altered to conform with shifts in the channel.

The course change at the intersection of the range lines must be carried out with dispatch, as the water shoals rapidly to the W.

St. Andrews Channel

5.23 Burchells Point (Chapel Point) (46˚15'N., 60˚18'W.), a long, curving, sandy ridge, lies on the E side of the channel at approximately the delineation of Little Bras d'Or and St. Andrews Channel. A wharf, reportedly in a state of disrepair, lies close SE of the point. Small craft can anchor in 2 to 3m, in a cove E of the point.

A shoal, with a least depth of 1.5m and marked by buoys on its W side, lies about 0.8 mile SW of Burchells Point. The channel lies between this shoal and a buoy marking the shoal water off Codnor Point, about 0.5 mile WSW. Depths of less than 9.1m extend about 0.4 mile S of Codnor Point, and about 0.3 mile S of Groves Point, lying about 1 mile SW of Codnor Point.

St. Andrews Channel, to the SW of Groves Point, lies along the SE side of Boularderie Island and is generally deep throughout with depths of over 183m in places. The shore banks are mostly steep-to and fall off rapidly to deep water making anchorage in most parts of the channel difficult for anything but small craft.

A conspicuous radio tower is situated on Mount Cameron, about 0.9 mile E of the S end of Long Island.

The NW shore of St. Andrews Channel is formed of an almost continuous bluff ranging from 3 to 23m high, while the SE shore is sloping with numerous coastal sand bars. The prevailing SW-NE winds can affect this arm of the lakes system considerably, with the available fetch allowing a considerable sea.

Point Clear Light (46˚05'N., 60˚36'W.) is shown from a triangular skeleton tower.

Anchorage.—Long Island (46˚11'N., 60˚25'W.), on the E side of St. Andrews Channel, is separated from the shore by a narrow, steep-sided passage in which only small craft can obtain anchorage. The easiest entrance is from the N, but local knowledge is recommended as the bottom is irregular with deep holes.

Island Point Harbour is entered close W of Island Point, at the N end of a narrow ridge about 5 miles SW of the S end of Long Island. Small craft only can anchor here in sand and mud; the anchorage is not safe in NE winds.

Danger.—A reef, with a least depth of 0.9m, extends about 0.5 mile offshore at Beaver Cove on the E side of the channel, about 1.8 miles ESE of Point Clear.

St. Patricks Channel

5.24 MacKay Point (46˚04'N., 60˚44'W.), and Red Point, about 1.8 miles NE, form the S and N entrance points, respectively, of St. Patricks Channel, the W channel of the N lakes. This channel trends approximately 20 miles to the SW and is roughly divided near its center by a constricted passage known as Little Narrows.

St. Patricks Channel is navigable throughout by vessels of moderate size and contains the only commercial facilities in the Bras d'Or Lakes region. The shores which are moderately high rise to hills of considerable elevation a short distance inland, however, during bad weather the channel is subject to heavy wind squalls.

There are no tidal currents and little tidal rise, but the water level is affected by prevailing winds, being highest during NE winds and lowest during SW winds. The range rarely is more than 0.3m.

There are good anchorages in Baddek Bay, Cow Bay, and Nyanza Bay on the N side, and in Washabuck River on the S side. The channel throughout also provides fair anchorage with good holding ground.

Spectacle Island, 5.8m high, lies 0.5 mile N of MacKay Point and roughly divides the entrance of St. Patricks Channel in half. The island is a bird sanctuary. Shoal water more or less surrounds the island and extends to the NE for 0.5 mile, with a reef closer to its N shore. Bone Island lies close to the shore, about 0.5 mile W of Spectacle Island, and has shoal water extending around it and to the NNE for 0.4 mile.

An isolated shoal, with a least depth 8.5m, lies near the middle of the channel, about 0.5 mile NNW of the NW extremity of Spectacle Island.

A lighted buoy lies at the N end of the shoal water N of Bone Island. Buoys mark a narrow channel with a depth of 9.1m between Bone Island and Spectacle Island.

Baddeck Harbor (46˚06'N., 60˚45'W.) (World Port Index No. 5950) lies between Kidston Island, narrow, wooded, and 15m high, and the mainland NW. The preferred entrance is the channel NE of Kidston Island. Baddeck is a pulpwood and lumber shipping port.

Aspect.—Kidston Island Light is shown from a white square tower on the NE point of the island. A light is also shown on the SW end of the island from a white circular tower with red bands.

Depths—Limitations.—The harbor is usually closed by ice from the middle of January to the middle of April. The government wharf, about 101m long, has depths alongside the E side at LW of 4.6m at the shore end and 7.2m at the outer end and outer face. A warehouse stands on the jetty. A ramp and yacht club wharf, 20m long with depths of 0.2 to 2.2m along the face, are situated at the inner end of the wharf on the E side.

The white steeple of the United Church in the middle of Baddeck is conspicuous.

Pilotage.—Pilotage is compulsory for merchant vessels and pilots are boarded off Great Bras d'Or.

Anchorage.—The recommended anchorage at Baddeck is in a depth of 8m, good holding ground of mud and sand, with the lighthouse on Kidston Island bearing about 135˚. Vessels should moor. Anchorage is also available near the head of Baddeck Bay according to draft. Care should be taken to avoid

a submarine cable which is laid across the SW part of the harbor.

Stony Shoal, which dries at LW, lies 1 mile WSW of the W extremity of Kidston Island. It is marked on its S side by a lighted buoy and is dangerous to approach.

Crow Point, about 1.5 miles SW of Kidston Island, is connected to the mainland by a narrow, above-water ridge. Shoal water, marked by a buoy, extends up to 0.25 mile off the point, and there are shoals along the length of the S side of the channel inside a line drawn between the lighted buoy N of Bone Island and Birch Point, about 4.5 miles WSW.

Murphy Point, about 2.5 miles WSW of Crow Point, is 15m high side. McIvor Cove, on the SE side, has a depth of 3m and is only available to small craft.

A rock, with a depth of 1.8m, lies about 0.3 mile NE of Murphy Point and a buoy is moored about 0.1 mile farther NE.

A government wharf is situated at Washabuck Center, about midway between Crow Point and Murphy Point. The wharf projects 67m from the shore and has an L-head 12m long, with a depth of 3m alongside. It should be approached from the NW as a sand bar extends over 0.2 mile from the shore to the NE.

Washabuck River, entered by a deep but narrow, buoyed channel, is located between Murphy Point and Birch Point and provides a snug anchorage in its outer part with depths of 7 to 12m, sand and mud. Islets and reef border the entrance channel and caution is necessary. There is a pier, with a depth of 2.7m at its head, situated in the upper part of the river, about 2 miles SW of the entrance.

Brian Point (46˚04'N., 60˚52'W.) extends approximately 0.5 mile NE from the mainland and is mostly low and tree-covered.

Cow Bay, on the N side of St. Patricks Channel, opposite Brian Point, is entered over a shingle bar with a least depth of 6.7m. There is good anchorage off the N shore of the bay in depths of about 12m, mud.

Nyanza Bay is entered between Cow Point and Cranberry Point, about 1.5 miles W of Brian Point, and is very shallow off the mouths of the two rivers that enter it. A channel, close W of Cow Point, leads NNE from the entrance to a wharf, at the town of Nyanza, which is about 79m long with a depth of 4.6m at its head. There is good anchorage in depths of 9.1 to 12m, mud, about 0.3 mile S of the pier.

5.25 MacIvers Point (46˚02'N., 60˚56'W.), broad and about 15m high, is connected to the mainland by a narrow isthmus and restricts St. Patricks Channel to a width of 0.5 mile between itself and Hume Island to the NW.

MacIvers Bank, with a least depth of 2.1m, rock, extends up to 1 mile SW of MacIvers Point. Bell Rock, which dries 0.6m, lies about 0.5 mile W of the same point, with a bank having 6.1m lying between. The channel is restricted by these dangers and their surrounding shoals, however, a buoyed fairway, with a least charted depth of 9.4m, has been established leading SW from MacIvers Point.

Two pairs of range lights are used to navigate the channel W of MacIvers Point. The first pair, in line bearing 195.5˚, is shown from two skeleton towers near Hazeldale.

The MacIvers Point range lights, in line bearing 066.5˚, astern, lead through the second part of the channel and are shown from two masts on the shore.

Donald Williams Point (Green Point), wooded, is located on the W side of St. Patricks Channel, about 2.5 miles SW of MacIvers Point. The channel between MacIvers Bank and the shoals off Donald Williams Point, opens up to a wide deep basin with a width of almost 2.5 miles.

Little Narrows, which is only about 90m wide at its narrowest point, is entered between Donald Williams Point and the shore SE, and separates St. Patrick Channel from Whycocomagh Bay, to the SW. There are depths of 9.4m, but pilotage is required for merchant vessels.

Eel Shoal, with a least depth of 1.2m, lies from 0.75 to 2.5 miles ENE of Donald Williams Point and divides the entrance to Little Narrows into two channels. The N or main channel is buoyed and carries depths of 10 to 14m. The S channel is also buoyed, but has a least charted depth of 6.7m.

Aspect.—Two lights situated on the S shore of Little Narrows, about 0.8 mile S of Donald Williams Point, when in line bearing 206.5˚, lead through the N channel.

Little Narrows Light is shown from a white circular tower on the SE shore of the narrows, about 1 mile SW of Donald Williams Point.

The large galvanized buildings of the Gypsum Company and the scars of the strip mining operation in the hills SE are conspicuous and form a good mark from MacIvers Point.

Depths—Limitations.—Little Narrows Gypsum Company pier projects from the SE shore, about 1 mile NE of **Little Narrows Light** (46˚00'N., 60˚59'W.): length of the berth on NE side of pier is 110m; maximum draft alongside of 8.1m; and deck elevation is 1.2m. The pier is used only for loading gypsum. Vessels up to approximately 10,000 dwt can be accommodated at the wharf.

Caution.—A cable ferry crosses Little Narrows approximately at its narrowest point. The cable, which is fixed to both shores, drops to a 3.7m loop at the center when the ferry is docked on either side. When the ferry is underway the cable is pulled tight and is situated just below the surface, making passage impossible.

Vessels approaching the narrows should proceed at slow speed to avoid damage to the ferry and piers from wash. The ships whistle should be sounded in time to warn the ferry not to get underway.

There is a government wharf close SW of the ferry wharf on the SE shore of the narrows. The pier is in a state of disrepair, but reported usable. It has a berth of 12m at the pier head and a depth of 4.9m alongside. A dangerous sandbar juts into the channel about 240m SW of this wharf.

An overhead power cable, with a least vertical clearance of 36m, crosses the narrows near the S entrance. A submerged cable also crosses the narrows close S of the government wharf.

The channel buoys are lifted after each navigational season. The ranges may be slightly altered when the buoys are relaid.

5.26 Whycocomagh Bay (45˚58'N., 61˚07'W.), the head of St. Patricks Channel, is entered from Little Narrows and is available to small vessels with drafts to about 3.7m.

The channel widens after passing through Little Narrows and maintains considerable depth until about 3.5 miles WSW of the Narrows. The entire N shore of the channel is high and steep, rising to over 229m in several places, only 0.3 mile from the water's edge.

Whycocomagh Light is shown from a skeleton tower on Lovett Point, on the N shore of the channel, about 4 miles W of Little Narrows.

A prominent church (45˚58'N., 61˚07.9'W.) is situated on the W shore of the inlet leading to Whycocomagh village.

Indian Island, about 84m high and wooded with a rounded peak, lies at the head of the bay and is steep on its E side. The island and Salt Mountain, a conspicuous dome 240m high, about 1.3 miles to the NE, can produce a strong draft into the bay on E winds, which on occasion has caused considerable damage in the harbor.

Depths—Limitations.—There is a government wharf on the E side of Whycocomagh Bay. The wharf is L-shaped, with a 21m long outer face and a depth of 4.6m alongside. Part of the berthing head is in ruins and not safe. The buoyed channel has depths of 3 to 3.7m, but may silt. Pilotage is compulsory for merchant vessels.

Anchorage.—There is a sheltered deep anchorage on the SW side of **Indian Island** (45˚57'N., 61˚07'W.), at the head of the bay. Shallower anchorage can be found on the S side of MacInnis Island.

Southern Part of Great Bras d'Or

5.27 The S part of Great Bras d'Or is actually a junction of the N lakes area, with St. Andrews Channel to the NE, the N part of Great Bras d'Or to the N, St. Patricks Channel to the NW, and Barra Strait to the S. The channel is wide and deep with only Burnt Shoal, MacPhee Shoal, Big Shoal, and Barra Shoal of primary concern. The W shore is high and steep, the E more sloping and sandy.

Burnt Point (46˚04'N., 60˚44'W.), about 0.5 mile S of MacKay Point, is bordered by shoal water. The land W of the point rises rapidly and then levels off at a height of 206m about 1 mile SW. Burnt Shoal has a depth of 6.1m and lies unmarked about 0.8 mile ENE of the point. An 8.2m patch lies 0.5 mile farther NNE.

Maskells Harbour (46˚01'N., 60˚47'W.), an excellent refuge for small craft, is entered between Ponys Point, about 2 miles SSW of Burnt Point, and Gillis Point, about 0.4 mile further SW. A reef, marked at its N end by a buoy, extends about 0.2 mile NE of Gillis Point leaving a channel with a depth of 6.7m between it and Ponys Point. A light is shown from a white square tower attached to a dwelling on Gillis Point.

On the N shore, 0.3 mile inside the entrance, is a long steep-to shingle spit which protects the harbor within. There are depths of 7m in the channel, up to 0.2 mile W of the spit, and small craft can anchor in depths of 7.3 to 7.6m, mud, within this area and be protected by high, wooded hills to the N.

Blacksmith Point, about 2 miles SSW of Gillis Point, is low and rock-strewn with salt ponds backing the shore. Shoal water, with depths of less than 9.1m, extends up to 0.5 mile E and 0.75 mile SE of the point.

MacPherson Point, about 10.7m high, lies 1.25 miles S of Blacksmith Point and is bordered by shoal water to a distance of 0.3 mile. Grass Cove lies N of the point, between the above shoals, but the pier within is in ruins.

Barra Shoal (45˚58'N., 60˚48'W.), rock, with a least depth of 4.6m, lies directly across the entrance of Barra Strait and a little over 0.75 mile SE of MacPherson Point. Vessels can pass W or E of this shoal, although the latter channel is wider and deeper.

Black Point (46˚01'N., 60˚40'W.), low and rocky, is backed by salt ponds and lies at the S end of two silted coves. There is a steep hill, rising to about 213m, 1.25 miles S of the point.

MacPhee Shoal (Macphie Shoal), with a depth of 5.5m, rock, lies unmarked about 1 mile N of Black Point.

Big Shoal, the shallowest part of which, with a depth of 1.2m, lies about 2 miles W of Black Point, covers an area of nearly 1 square mile and is divided into two shoal heads. The shallowest part of this bank is marked close NW by a buoy. Vessels should not attempt to pass between these aids.

Christmas Island (45˚59'N., 60˚45'W.) is a long curving spit of low land connected to the shore at its E end and enclosing a pond. Much of the spit is marshy, but some rocks border its NW side. A large white church and steeple may be distinguished on the mainland just S of the island.

Anchorage.—There is good anchorage, except in NE winds, in about 15m, mud, about 0.5 mile SW of the W extremity of Christmas Island. The Neilban Cove rail and highway bridge lies about 0.3 mile SSW of the anchorage area.

Barra Strait

5.28 Barra Strait is a natural formation which leads between Great Bras d'Or and Bras d'Or Lake, the S and largest body of water in the Lakes area. The shores of the strait are high and bold, with the E side rising to over 152m just a short distance inland. The channel is deep in the fairway, except for the shoals bordering **Uniacke Point** (45˚58'N., 60˚48'W.) and Kelly Point which restrict the width of the N entrance to about 0.3 mile.

Tides—Currents.—The flood current sets SSE and the ebb current sets NNW in the vicinity of the rail bridge. This puts both currents diagonally across the channel at a rate of about 3 knots at mid-tide.

Depths—Limitations.—A public (Transport Canada) L-shaped jetty, total length 191m, which was being reconstructed in 1993, extends from the shore of Iona village, close N of **Uniacke Point** (45˚58'N., 60˚48'W.). The depth alongside the head of the jetty is 4.6m.

There is a church in the town of Iona close W of the root of the pier.

Aspect.—The Canadian National Railway Bridge, constructed of steel with six spans supported by stone foundations, crosses Barra Strait from Uniacke Point to Kelly Point. The swing span, near the Kelly Point side of the strait, forms a ship channel 31.7m wide with a minimum depth of 8m on the W side of the pivot pier. A groin, the outer end of which is submerged and in ruins, extends to the SW of the pier and serves to break the force of the tidal current setting across the opening. A buoy is moored about 90m SW of the submerged head. A bascule bridge extends across Barra Strait about 70m N of the railroad bridge. The bascule opening is in line with the swing span of the railroad bridge. The design clearance of the bascule bridge in the closed position is 9m.

White lights are shown from each side of the ship channel.

A white light is shown from the center of the swing span on the bridge. Immediately below this light, a red light is shown when the span is closed and a green light is shown when the channel is open.

During the navigation season, the swing span operates from 0700 to 2300, except for continuous operation during the months of July and August.

Caution.—The flood, or S current, enters the channel at the swing span diagonally to the channel axis and then is deflected off toward the SW. Considerable caution is necessary when proceeding with the current as vessels have been carried into the pivot pier by not maintaining enough speed for good steerageway.

No signal is made from the bridge to indicate when vessels may pass through, and the bridge may remain closed until a vessel is close to it.

Derby Point (45˚56'N., 60˚48'W.), the SE entrance point of Barra Strait, is formed of cliffs about 15m high. A light is shown from a skeleton tower, 6.5m high, situated just within the point.

Hector Point, a little over 0.75 mile WNW of Derby Point, is bold and cliffy, and rises to 91m a short distance inland.

Kelly Point and Hector Point, in line bearing 223˚, leads SE of Barra Shoal. Uniacke Point, bearing 238˚, leads between Barra Shoal and the shoals off Kelly Point. Kelly Point and Derby Point Light, in line bearing 187˚, indicates the turning position for the bridge channel.

Bras d'Or Lake

5.29 Bras d'Or Lake is the largest of the Bras d'Or system, and is entered from the N by Barra Strait or from the S by St. Peters Inlet. The lake measures approximately 12 miles across in a N-S direction and 37 miles from the extremities of the East and West Bays. The depths in the lake are very irregular with numerous shoals in the coastal regions, however, the central part is generally deep and clear, the depths ranging from 14.6 to 73m, with a maximum charted depth of 157m with exception of Cod Shoals and Kelly Shoals. There are many islands in the W and S parts of the bay.

Cod Shoals (45˚55'N., 60˚49'W.) extend for 1.5 to 3 miles S of Barra Strait, and are extensive rocky banks, with a least depth of 6.2m. Hector Point and Uniacke Point, in line bearing 026˚, lead 0.5 mile W of these shoals and through the channel between them and McKinnons Shoal, which is a rocky bank with a least depth of 5.4m extending 1.5 miles SE of McKinnons Point.

A yellow ODAS lighted buoy (45˚51'N., 60˚49'W.) is situated about 3 miles S of Cod Shoals.

5.30 West Side of Bras d'Or Lake.—McKinnons Harbour (45˚55'N., 60˚56'W.) is approached between McKinnons Point, about 4.5 miles WSW of Hectors Point, and Campbell Island, low and wooded, about 1 mile further to the SW. The harbor is not accessible. The entrance channel, 1.4 miles W of McKinnons Point, has filled and is crossed by a narrow pebble beach.

A triangular skeleton tower is situated on the W side of the entrance to McKinnons Harbor.

North Basin and Denys Basin are two landlocked inlets entered through the narrow, tortuous channel between McKinnons Point and Campbells Island. Local knowledge is necessary for safe navigation. A depth of 7.3m can be carried through the channel, and in part of the basins where there is good anchorage. A convenient position in Denys Basin is N of Allans Cove in 5m, mud, 0.25 mile from the shore. River Denys enters the head of Denys Cove, and a depth of 2.4m can be found up the river for 2 miles.

Good shelter is available in Blues Cove, at the W extremity of North Basin. A wharf extends 37m from the S side, the outer 10m has depths of 2.1m on either side.

There is some current in and out of the narrow parts of the channel leading to the basins, but it seldom exceeds 0.5 knot, and the direction depends mainly on the wind. Rising water and ingoing flow may be expected with N winds; falling water and outgoing flow may be expected with S and SW winds.

Malagawatch Harbor (45˚52'N., 60˚57'W.), entered between Malagawatch Point, about 2.5 miles SE of Campbells Island, and Militia Point, 2.5 miles further SW, runs to the NW towards Denys Basin, from which it is separated by a low narrow neck of land. The harbor is entered between Gillis Shoal and Sheep Island. The channel width is about 0.3 mile. At the first narrows, 1 mile above the entrance, the channel is only 135m wide. Inside the narrows the harbor opens into a basin, with general depths of 7.3 to 11m. There is anchorage on the N side of the basin in depths of from 7.6 to 12.8m. Local knowledge is necessary to enter this harbor. From the N side of this basin, a narrow channel with a depth of about 7m leads to the inner harbor.

Gillis Shoal (45˚51'N., 60˚55'W.) has a least depth of 3m, and is surrounded by deep water. The best route into Malagawatch Harbor is S of this shoal. Pellier Point Reef, with a depth of 2.4m, extends nearly 0.4 mile E of Pellier Point. A small rocky patch, with a depth of 8.2m, lies 0.75 mile ESE of Pellier Point.

Pellier Harbour lies between Pellier Point and the peninsula of Milita Point, and can be entered either side of Militia Island. The channel to the NE of the island is preferable. A depth of 6.4m can be carried into the small harbor, but local knowledge is necessary.

5.31 West Bay is entered between Militia Point and **Poor Islet** (45˚47'N., 60˚56'W.), 3.5 miles to the S, and contains many islands and shoals. The depths throughout are irregular. A range of steep, wooded hills, 180 to 270m high, runs along the whole of the N shore.

The dominant features of the S shore are cliffs of red sand and clay, with some sandstone, alternating with shingle beaches which enclose ponds or unite peninsulas with the mainland. Inland 0.5 to 1 mile, a range of wooded hills rises to an elevation of 180m. A number of settlements are situated on the slopes of the hills or between them and the shore.

Paddle Shoal, with a least depth of 2.8m, lies 1.75 miles SW of Militia Point. Outer Shoal, with a depth of 6.2m, lies 0.5 mile S of Paddle Shoal. Nameless Shoal has 3.2m and lies 0.75 mile S of George Island, with George Shoal, with a least depth of 2.6m, extending 0.4 mile S of the island. Middle Shoal, with a least depth of 4.6m, lies 0.7 mile S of Nameless Shoal.

MacLeod Shoal, with a depth of 6.8m, lies between Middle Shoal and the reef extending from MacLeod Point. A buoy is moored 0.2 mile NW of MacLeods Point and marks shoals close off shore. Pringle Shoal, with a least depth of 2.6m, lies 0.5 mile N of Pringle Island and close SW of MacLeod Shoal. A buoy is moored on the N side of Pringle Shoal. Ross Shoal, with a least depth of 5m, lies about 0.7 mile WNW of Pringle Shoal.

Caution.—A shoal was discovered, with a least depth of 4.6m, lying approximately 0.5 mile W of Pringle Shoal, and covering a considerable area in the vicinity.

5.32 North Side of West Bay.—Little Harbour, entered about 1.3 miles WNW of Militia Point, has an entrance barely 90m wide, with depths of 5 to 8.2m. A narrow isthmus separates this basin from Malagawatch Harbor. A rocky bank, with a least depth of 5m, lies 0.5 mile S of the entrance to Little Harbour.

Entrance may be made in mid-channel, between sand bars extending from each side.

Anchorage.—Good small craft anchorage is available in two coves opening to the S, on the E, and on the W side of the harbor, in depths of 2 to 5m.

A group of wooded islets, about 15m high, with cliffs of sand, clay, and boulders, and connected by shingle beaches or separated by narrow channels, lies along the N side of West Bay in the approaches to Clarke Cove. Their positions can best be seen on a chart. There is good anchorage between them and the N shore.

Clarke Cove (45˚49'N., 61˚02'W.), north of Cameron Island, is a good anchorage. There is a government wharf 23m long and 6m wide, with a depth of 1.8m at the outer face. A second wharf is in ruins. A narrow buoyed channel passes between Cameron Island and George Island. A second unmarked channel, leading between Cameron Island and Green Island, is constricted at the entrance by a reef extending 0.3 mile S of Cameron Island, but widens beyond. A light is exhibited from a skeleton mast on the government wharf.

A conspicuous microwave tower, 266m high, marked by red aircraft warning lights, is situated about 1 mile W of the Wharf at Clarke Cove.

Anchorage.—Besides Clarke Cove, there is a confined but safe anchorage midway between the N end of Mac Raes Island and the S part of Cow Island, in 12m, mud. Tailor Shoal, with a depth of 5.2m, lies 0.5 mile SE of Mac Raes Island.

5.33 Crammond Islands (45˚45'N., 61˚05'W.), including Floda Island, form a separate group located 1.5 miles SW of Mac Raes Island. These islands present cliffs of red sand and clay to seaward, and are 15 to 20m high to the tops of the trees. Anchorage is poor around these islands because of the depth of water, but there is a secure small craft harbor between the two Crammond Islands.

The small craft harbor is on the SE side of the channel between the two islands and is protected by a sand bar. The preferred entrance is from the N, in mid-channel, after allowing for a rocky bar extending NE from the W island.

Smith Shoal, with a depth of 1.6m, lies 135m SE of the E Crammond Island. It is marked by a conical buoy. Mid Shoal, with a depth of 4.2m, is nearly 1 mile NW of the N end of Crammond Islands.

Dumpling Island, 0.6 mile NW of the Crammond Islands, is surrounded by a reef which extends 0.3 mile W towards MacKenzies Point (Widow Point).

The channel between the Crammond Islands and the coast to the W is deep and clear, except for an 8m shoal lying 0.4 mile S of Dumpling Island; another shoal of 8.4m, 0.75 mile farther S, off Spruce Point; and one of 4.6m in Malcolm Cove.

MacLeod Creek, Ross Pond, and North Cove lie W of MacKenzies Point peninsula. The channel leading to MacLeod Creek and Ross Pond is buoyed, but both of these small inlets are very shallow.

The head of West Bay, between Spruce Point, about 1 mile S of the E extremity of MacKenzies Point, and Ballam Head, about 2 miles further S, provides reasonable shelter for boats, but there is no secure anchorage. Reefs extend from the N shore, W of Spruce Point. Magnus Islet lies on a partly drying reef, connected to the shore, and also extending in a tongue for two third of the distance across the cove at the head of the bay. There is a wharf at the village of West Bay, which extends to a depth of 4m at the outer face.

Ballam Shoal, with a least depth of 4.6m, is a rocky bank extending for 0.75 mile ENE of **MacIntosh Point** (45˚42'N., 61˚07'W.), and across the mouth of the cove to Ballam Head.

Black River flows into West Bay, 1.5 miles E of MacIntosh Point. There is a confined small vessel anchorage off its mouth, sheltered by MacRae Islet, but it is surrounded by shoal water and requires knowledge of its intricacies to enter.

5.34 South Side of West Bay.—MacIntosh Cove (43˚44'N., 61˚02'W.), 3 miles NE of MacIntosh Point and immediately E of McInnes Point, is a good small vessel anchorage, but the area of water over 5m in depth is only 0.1 mile wide. A small islet lies N of the E point of the cove, with a reef connecting it to the shore, and shoals with a least depth of 5.5m extend for 1 mile W of the islet. There is a narrow passage between these shoals and the islet. The beach 0.6 mile NE of MacIntosh Cove encloses a small pond, and a reef with depths of less than 9.1m extends about 1 mile offshore.

McInnes Shoals, rock, at a depth of 5m, lie about 0.8 mile WNW of McInnes Point.

Pringle Island, 3 miles NE of MacIntosh Cove, forms Pringle Harbour between it and the mainland. It is a good harbor for small craft. A wharf 6.1m wide extends to a depth of 3.7m at the outer end of the village of The Points.

MacLeods Point lies 1 mile NE of Pringle Island, with a reef, with a depth of 4m, midway between. Another reef extends 0.3 mile N of the point. There is a small boat harbor S of the peninsula forming the point.

Poor Point (45˚47'N., 60˚56'W.) lies 1 mile E of MacLeods Point. Depths of 1.8m and 0.6m lie 0.25 mile W and N, respectively, of the point. A lighted buoy is moored about 595m N of the point.

Morrison Harbour, about 1.8 miles E of Poor Point, is a small boat anchorage on the E side of Morrison Head, a small peninsula, 11m high, with red cliffs. Shoal water borders the peninsula for 0.2 to 0.4 mile offshore. A rocky bank, with a depth of 8.2m, lies 0.6 mile NE of Morrison Head.

Macrae Point (45˚45'N., 60˚51'W.) is 2.25 miles ESE of Morrison Head, with a rocky bank having a depth of 5.8m lying midway between them. A shoal, with a depth of 4.1m, lies 0.4 mile NW of the point, and a 7.8m patch lies 0.9 mile E of the point.

5.35 East Side of Bras d'Or Lake.—The coast between Derby Point, at the SE end of Barra Strait, and **Benacadie Point** (45˚54'N., 60˚43'W.), 4 miles to the SE, forms Pipers Cove, a small bay with very uneven depths. A bank, with a least depth of 7.2m, lies 1 mile SE of the light on Derby Point; there are patches, with depths of 7.4 to 8m, about 0.5 mile further to the S and SE.

Benacadie Pond, a narrow indentation immediately E of Benacadie Point, is shallow, with a drying bar across the entrance.

East Bay (45˚56'N., 60˚33'W.), entered between Benacadie Point and Middle Cape, 4 miles to the SE, extends in a NE direction for 16 miles. The first 4 miles within the entrance are clear of shoals, but the depths throughout are very irregular. The long fetch, the deep water, and the nature of the bottom make anchorage unsafe except in the small places mentioned below.

5.36 Northwest Side of East Bay.—Amaguadees Pond, a large area of water with depths of 2 to 4.6m enclosed by a beach of gravel over clay, lies on the N shore, 3 miles E of Benacadie Point. A wharf, known as Castle Bay wharf, with a depth of 3.4m alongside the 50m length, is situated near the NE end of the beach.

Christmas Pond, 1 mile NE of Amaguadees Pond, is a small boat harbor enclosed by a sand and shingle beach extending NE from **Dhu Point** (45˚55'N., 60˚38'W.). The approach is E or W of Christmas Island, which lies 1.25 miles NW of Dhu Point, and then SW to the entrance, which has a limiting depth of 1.5m. Anchorage for small craft is available at the head of the pond.

McPhee Island (45˚56'N., 60˚33'W.), 2.5 miles E of Christmas Island, is joined to the mainland at Eskasoni by a long sand and shingle beach. West Eskasoni Harbour, close W of McPhee Island, is a small but secure harbor for small craft; the long sand and shingle beach forms the N side of the harbor.

Crane Cove is reached through a narrow, shallow, winding channel which leads through the Indian Islands and N of McPhee Island. This channel is buoyed at the entrance and requires local knowledge. A public wharf at Crane Cove is 37m long with a depth of 1.2m alongside.

There is a small, shallow anchorage inside the harbor formed by Cossit Point, 3.5 miles NE of McPhee Island. Shoal water extends 0.4 mile to the SE of the end of the point, and also extends in a bank on the E side of the narrow entrance channel. There is a wharf in the cove NE of Cossit Point, 64m long, with a pier end 12m long. The bank E of the channel into the cove, with a depth of 1.8m, lies 0.3 mile offshore from this wharf. A spar buoy marks the E limit of the bank, and a channel runs between the buoy and the shoal water extending off McAdam Point.

5.37 Head of East Bay.—Shoals extend off both shores abreast of **Campbell Point** (46˚00'N., 60˚25'W.), and only a tongue of deeper water continues towards the causeway which terminates the head of the bay. There is a very narrow area of water over 5.5m deep extending to within about 0.4 mile of the causeway.

Southeast Side of East Bay.—At MacDougall Point, about 5 miles SW of Campbell Point, there is a large pond enclosed by a shingle beach. Shoal water extends 0.2 mile from the point.

Marble Point (45˚56'N., 60˚32'W.), about 1.8 miles SW of MacDougall Point, has a similar pond about 0.5 mile NW of it; a long reef runs 0.25 mile NNE from the point. Marble Hill, 1 mile E of the point, is 180m high.

Lochmore Harbour, about 2.8 miles SW of Marble Point, is formed by a long shingle beach. The harbor is entered from the NE end of the curving beach. There is a depth of 1.6m over the bar. The small harbor provides good shelter for small craft. The hills inland rise to a height of 210m.

Red Islands (45˚49'N., 60˚46'W.), 6 miles SW of Middle Cape, consist of one large and one very small island. The connecting reefs form a horseshoe shape, and enclose a small boat harbor open to the S. Two rocky patches, each with a depth of 7.6m, lie 0.5 mile N and 1 mile NE of the islands. The islands, although treeless and with no distinguishing features, show good contrast against the wooded hills.

Campbells Cove is a narrow, shallow inlet on the mainland S of the Red Islands. A disused lighthouse stands on Murdocks Point, the W entrance point of Campbell Cove. South of the cove are a number of peninsulas and islands, connected by shingle beaches, and forming Johnstown Harbour and Hay Cove, which lie within Campbells Island and Evans Island. The approach channels are intricate, but with local knowledge they are navigable for small vessels.

St. Peters Inlet

5.38 St. Peters Inlet, located at the S end of Bras d'Or Lake, terminates at its SW extremity with St. Peters Canal. The channel, which is intricate, is buoyed during the navigation season, however, all vessels except small craft are advised to take a pilot, and his services are compulsory for merchant vessels.

Kelly Shoals (45˚46'N., 60˚49'W.), with a least depth of 1.6m, cover a large area off the entrance to St. Peters Inlet, midway between Red Islands and Macrae Point. Deep water surrounds the shoals, but the passage between them and Macrae Point, about 1.5 miles SW, is preferable to the channel on the E side. Buoys mark the W and S limits of the shoals. The passage on the SW side of the shoals is the preferred passage.

Cape George (45˚44'N., 60˚48'W.), 1.5 miles S of Kelly Shoals, rises to a wooded cliff and is the W entrance point of St. Peters Inlet. A shoal, with depths of 5.5 to 7.3m, lies 0.75 mile N of Cape George.

Cape George Light is exhibited from a white, square structure, 8m high.

MacNabs Cove and Soldiers Cove lie on the E side of St. Peters Inlet, outside the entrance to the channel leading to St. Peters Canal. They are entered by passing through narrow channels between shoals. The entrance to both these coves is to the E of Chapel Island. Anchorage in 6 to 7m may be found in MacNabs Cove, and in 7 to 13m in Soldiers Cove.

5.39 Channel leading to St. Peters Canal.—The best water is found by keeping over towards Cape George and passing W of Chapel Island, until off Trap Point. The S end of Chapel Island is marked by a white church with a spire. The entrance to the channel lies between the buoy moored off the edge of the shoal extending from Dock Point, and Gregory Island, a small island close W of Doctor Island.

Gregory Island Light (45˚43'N., 60˚48'W.) is exhibited from a white circular tower, 3m high.

The ship channel curves round between Gregory Island and the mainland, and then between Doctor Island and MacNabs Point. It is clear of detached shoals, and 14.6m can be found in the narrow fairway at this point. Shoals extending from either side reduce the width of the channel to 0.1 mile in places. The passage is again narrow and intricate from about 0.5 mile SW of MacNabs Point, with a least depth of 7.3m. From this point the channel passes SE of MacNabs Island then through a narrow passage S of French Cove. It then passes close E of Carter Point and close around the S end of Beaver Island in a least charted depth of 7.3m. The channel is considerably restricted to a width of about 90m just N of Helens Island (Marjorie Island), where there are charted depths of 6.1m in the channel and shoaling close to the channel edges. In the approach to St. Peters Canal, the channel remains constricted, with many turns; the channel is buoyed. The approach to the canal is dredged to 5.5m and is buoyed. It was reported that two 5.2m depths were discovered in the narrows between Beaver Island and Sandys Point. At the N entrance to St. Peters Canal, there is a rock with a depth of 4.1m. The turn to enter the canal is very sharp.

Overhead power cables with a maximum safe overhead clearance of 25m cross the channel in Beaver Narrows N of Helens Island.

Beaver Island Light (45˚41'N., 60˚50'W.) is exhibited from an aluminum tower on the SE point of the island.

Helens Island Light (45˚40'N., 60˚51'W.) is exhibited from a mast, 6.7m high, on a small islet about 1 mile SW of Beaver Island light.

All buoyage in the channel of St. Peters Inlet is laid as in the entire Bras d'Or Lakes system, that is from N to S with red to starboard. Buoys are removed after the navigation season, approximately December 1.

5.40 St. Peters Canal (45˚39'N., 60˚52'W.) connects the inlet with St. Peters Bay. It is about 0.5 mile in length, 16.8m wide at the water level, with a limiting depth of 4.1m. There is one tidal lock 91.4m long and 14.45m wide, with 5.5m over the sills. The maximum length of vessel that can be accommodated in the lock is 82.3m.

The mean lake level of St. Peters Inlet at the N end of the canal is slightly more than 0.6m below the level of HWS in St. Peters Bay. Winds may cause a fluctuation of about 0.6m in level in that part of St. Peters Inlet, but tidal influence is imperceptible.

St. Peters Canal from S

Vessels should be prepared to land men to handle lines, as it is difficult to maintain steerage way in the canal. There is a wide basin at the S end where ships waiting to transit the canal to the N may secure alongside.

A swing bridge crosses the canal near the N end. It is manually operated and has a vertical clearance of 6.1m when closed.

Two overhead power cables, with a least vertical clearance of 32m, cross the canal close N of the lock.

There is a speed limit of 6 knots in the canal.

Ice.—St. Peters Inlet freezes over from January 15 until April 25, approximately.

Pilotage.—Pilotage is compulsory for merchant vessels and recommended for all others except small craft. See Bras d'Or Lakes, paragraph 5.20, for information on boarding pilots.

Regulations.—There is no fee for locking through, but the master of any registered vessel will be required to supply information to the Lockmaster on registry, size, tonnage, cargo, crew, and ports of departure and destination.

Control lights are exhibited close to each entrance to the lock. No vessel shall enter the lock unless a green light is shown. A flashing light indicates the lock is being prepared.

St. Peters Bay is described in paragraph 4.13.

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