ARC 403

Canadian

Sailing Directions

Western Arctic

2024/03

Fisheries and Oceans Canada
Pêches et Océans Canada

Canada

Pictograph legend


Anchorage


Current


Radio calling-in point


Wharf


Caution


Lifesaving station


Marina


Light


Pilotage

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Record of Changes

As the CHS acquires new information, relevant changes are applied to Sailing Directions volumes in order to maintain safety of navigation. It is the responsibility of the mariner to maintain their digital Sailing Directions file by ensuring that the latest version is always downloaded. Visit charts.gc.ca to download the most recent version of this volume, with all current changes already incorporated.

The table below lists the changes that have been applied to this volume of Sailing Directions. This record of changes will be maintained for the current calendar year only.

Date	Chapter / Paragraph	Description of Change
02/2024	C3/P112.1	Add caution for rock awash
03/2024	C7/P192	Removed paragraph 192 in chapter 7 which had mention of a discontinued beacon tower.

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PREFACE

The First Edition of *Sailing Directions, ARC 403 — Western Arctic*, 2011, has been compiled from Canadian Government and other information sources. In general, all hydrographic terms used in this booklet are in accordance with the meanings given in the *Hydrographic Dictionary* (Special Publication No. 32), published by the International Hydrographic Organization.

This edition introduces a new layout of the geographical areas.

General information for Northern Canada is grouped in one booklet: *Sailing Directions, ARC 400 — General Information, Northern Canada*. It contains navigational information and a brief description of the main port facilities as well as geographic, oceanographic and atmospheric characteristics. Booklet *ARC 400* also includes a geographical index for Northern Canada.

The geographical areas are described in a series of booklets; their limits are shown on the back cover of each booklet. For more information, consult the *Catalogue of Nautical Charts and Publications 4, Arctic*.

Tidal, water level and current information has been revised by the Tides, Currents and Water Level Section of the *Canadian Hydrographic Service*.

The photographs, except where credits are given, are by the *Canadian Hydrographic Service* or the *Canadian Coast Guard, Fisheries and Oceans Canada*.

Users' comments concerning the format, content or any other matter relating to *Sailing Directions* would be appreciated and should be forwarded to the Director General, *Canadian Hydrographic Service, Fisheries and Oceans Canada*, Ottawa, Ontario, Canada K1A 0E6.

Canadian *Sailing Directions* amplify charted details and provide important information of interest to navigation which may not be found on charts or in other marine publications. *Sailing Directions* are intended to be read in conjunction with the charts quoted in the text.

Remarks

Buoys are generally described in detail only where they have special navigational significance, or where the scale of the chart is too small to show details.

Chart references, in *italics* in the text, refer to the largest scale Canadian chart but occasionally a smaller scale chart may be quoted where its use is more appropriate.

Tidal information is not given; this information is available in *Canadian Tide and Current Tables*. Any known unusual changes in water level, however, are mentioned.

Names have been taken from the Geonames database kept by Natural Resources Canada. Where an obsolete name still appears on the chart or is of local usage, it is given in brackets following the official name.

Wrecks are described where they are relatively permanent features having significance for navigation or anchoring.

The bottom in shallow water, especially in unprotected areas of the north, is subject to **ice scouring**. Bottom features may change from year to year. Consult with local authorities about existing conditions before venturing into shallow waters.

Units and terminology used in this booklet

Latitude and **longitude** given in brackets are approximate and are intended to facilitate reference to the chart quoted.

Bearings and **directions** refer to True North (geographic) and are given in degrees from 000° clockwise to 359°. The bearings of conspicuous objects, ranges and light sectors are given from offshore. Courses always refer to the course to be made good.

Tidal streams and **currents** are described by the direction towards which they flow. The **ebb** stream is caused by a falling tide and the **flood** stream is caused by a rising tide. **Winds** are described by the direction from which they blow.

Distances, unless otherwise stated, are given in nautical miles of 1,852 m.

Speeds are given in knots, which means nautical miles per hour.

Depths, unless otherwise stated, are referred to chart datum. As depths are liable to change, particularly those in dredged channels and alongside wharves, it is strongly recommended that these be confirmed by the appropriate local authority.

Elevations and **vertical clearances** are given above chart datum.

Heights of structures, as distinct from the elevations, refer to the heights of structures above the ground.

Deadweight tonnage and **mass** are expressed in metric tonnes of 1,000 kilograms (2,204.6 pounds). The kilogram is used for expressing small masses.

Numbers in brackets following the population identify the census year. The number in brackets after the name of a light or light buoy is its *List of Lights, Buoys and Fog Signals* number. Numbers in brackets following data that is subject to change is the year the data was last verified.

Time, unless otherwise stated, is expressed in local standard or daylight saving time. Details of local time kept will be found in Chapter 2 of Sailing Directions booklet *ARC 400 — General Information, Northern Canada*.

Public wharf is a Government wharf that is available to the public. It may be shown on older charts as “Government Wharf” or “Govt Whf”. A fee is usually charged for dockage. Many of these wharves are reserved for use by local fishing fleets or by other agencies.

Conspicuous objects, natural or artificial, are those which stand out clearly from the background and are easily identifiable from a few miles offshore in normal visibility.

Prominent objects are those which are easily identified but are not conspicuous.

Small craft refers to pleasure craft and, in general, to small vessels with shallow draught.

Pictographs are symbols shown at the beginning of certain paragraphs to allow quick reference to information or to emphasize details. The Pictograph Legend is shown on the inside front and back covers of this booklet.

For information on Government of Canada publications, regulations and services mentioned in this book, visit:

http://www.marineservices.gc.ca/

References to other publications:

International Maritime Organization

Visit *https://www2.imo.org/b2c_imo/b2c/init.do* to order:

- *International Code of Signals*
- *IMO Standard Marine Communications Phrases*
- *International Aeronautical and Marine Search and Rescue Manual (IAMSAR)*

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service

- *U.S. Coast Pilot 9, Pacific and Arctic Coasts Alaska: Cape Spencer to Beaufort Sea: http://www.nauticalcharts.noaa.gov/nsd/coastpilot_w.php?book=9*

Units

°C	degree Celsius
cm	centimetre
fm	fathom
ft	foot
h	hour
ha	hectare
HP	horsepower
kHz	kilohertz
km	kilometre
kn	knot
kPa	kilopascal
m	metre
mb	millibar
min	minute
MHz	megahertz
mm	millimetre
M	International Nautical Mile
t	metric tonne
°	degree (plane angle)
'	minute (plane angle)

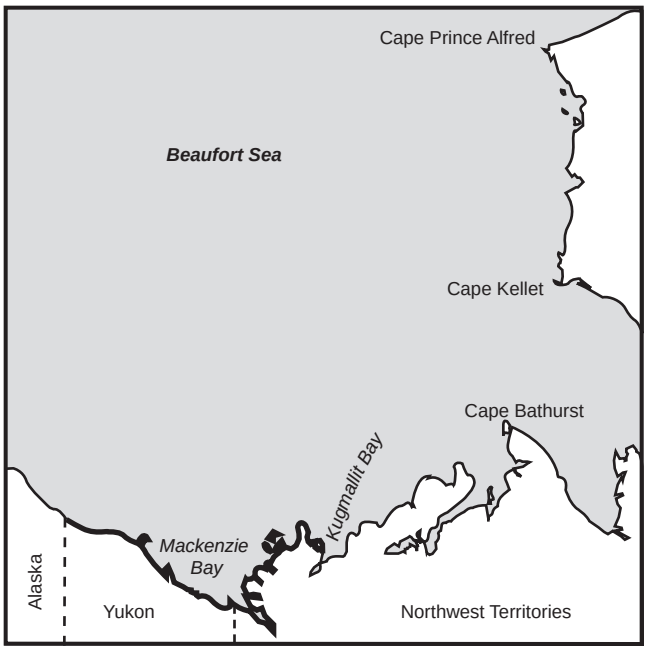
Directions

N	north
NNE	north northeast
NE	northeast
ENE	east northeast
E	east
ESE	east southeast
SE	southeast
SSE	south southeast
S	south
SSW	south southwest
SW	southwest
WSW	west southwest
W	west
WNW	west northwest
NW	northwest
NNW	north northwest

Various

CCG	Canadian Coast Guard
CHS	Canadian Hydrographic Service
DWT	deadweight tonnage
ETA	estimated time of arrival
ETD	estimated time of departure
HF	high frequency
HW	high water
LW	low water
MCTS	Marine Communications and Traffic Services
NAD	North American Datum
No.	number
SAR	Search and Rescue
USA	United States of America
VHF	very high frequency
VTS	Vessel Traffic Services

Beaufort Sea
Demarcation Point to Kugmallit Bay



General

Charts 6434, 6441, 7000, 7600, 7620, 7621, 7661, 7662, 7663

1 This chapter describes the **Beaufort Sea** and its shores east of Demarcation Point *(69°41'N, 141°18'W)* to Richards Island, on the west side of Kugmallit Bay.

2 *(For a description of the north coast of Alaska west of Demarcation Point, see United States Coast Pilot 9.)*

3 ***Northern Canada Vessel Traffic Services (NORDREG) Zone*** covers all Canadian waters described in this chapter to which the Arctic Waters Pollution Prevention Act applies, excluding Mackenzie Bay and Kugmallit Bay south of Latitude 70°N and east of Longitude 139°W. The primary objective of this system is to assist the master in the safe and expeditious conduct of the vessel by promulgating information on ice conditions, giving advice on routes and providing icebreaker support where available and considered necessary.

4 Traffic clearance requests and reports required by this system shall be addressed to *NORDREG CANADA*. Requests and reports may be passed through any *Canadian Coast Guard Marine Communications and Traffic Services (MCTS)* centre free of charge. All times shall be given in *Co-ordinated Universal Time (UTC)*.

5 *(For further information concerning Vessel Traffic Services in the Arctic, consult Radio Aids to Marine Navigation, available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*

6 ***Mackenzie River Marine Safety Advisory Procedures*** should be followed by all vessels before entering and upon leaving Tuktoyaktuk Entrance Channel or any of the restricted channels in the Mackenzie Delta. In the Mackenzie Delta vessels should report to *Iqaluit MCTS* centre and maintain a continuous radio watch on the Mackenzie System emergency and calling frequency, 5803 kHz *(SSB)*; if contact cannot be made with *Iqaluit MCTS* centre on 5803 kHz, VHF 156.8 MHz *(Channel 16)* may be used either directly or through another ship or shore station.

7 *(For further information concerning Mackenzie River Vessel Traffic Services, consult Radio Aids to Marine Navigation (Pacific and Western Arctic), available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*

8 Most of Beaufort Sea, east of the International Boundary and inside the 200 m depth contour, was surveyed by survey vessels between 1969 and 1985 with **line spacing** of less than 1 mile.

9 **Caution**. — Outside the 200 m depth contour surveys were by **spot soundings** through the ice at intervals of about 3 miles. On Chart 7832, **track soundings** are in sloped figures and should be used with caution. *(For details of the hydrographic data on which a chart is based, see the Source Classification Diagram shown on most charts.)*

10 **Caution**. — Numerous submarine **pingo-like features (PLFs)** forming small **isolated shoals** exist in the caution areas outlined by magenta on *Charts 7600, 7620 and 7621*, and **undetected PLFs** may exist.

11 **Pullen Pingos**, **Kugmallit Pingos** and **McKinley Pingos** lie within the PLF caution areas. The least depth found *(1985)* in the caution areas is 9.4 m in *70°32'N, 130°43'W*, but there are numerous depths under 25 m.

12 A special survey with line spacing of 100 m was made 1981–1983 to provide a **shipping corridor** free of undetected PLFs through areas of potential PLFs. This corridor, shown on *Charts 7600, 7620* and *7621*, is recommended for vessels transiting the area.

13 **Caution**. — Several **PLFs** with less than 20 m over them lie in the corridor.

14 **Caution**. — **Oil exploration and exploitation** drilling units and abandoned **artificial islands** hazardous to navigation can be encountered in the coastal waters of the Beaufort Sea.

15 **Submerged well-heads** of wells where there are no artificial islands are also charted. Well-heads are installed about 5 to 10 m deeper than the seabed.

16 The **tidal range** in Beaufort Sea is less than 1 m. Tidal predictions for harbours in the western Arctic are given in *Canadian Tide and Current Tables, Volume 4*.

17 **Caution**. — In the shallow waters of Beaufort Sea, **water levels** are strongly influenced by meteorological conditions. Strong offshore winds can produce water depths up to 0.8 m less than charted.

18 Off the east and north coasts of Herschel Island *(69°35'N, 139°05'W)* and as far south as Stokes Point, the dominant **current** direction is NW; even here the wind, especially after a long period in the same direction, has the greatest effect on currents.

19 Under sustained strong winds **surface currents** can attain 2 knots. With a 20 knot wind the average current is about 1 knot on the surface.

20 *(For general **weather** conditions in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For present and forecast weather conditions, visit: http://www.weatheroffice.gc.ca/canada_e.html. For **climate** normals and averages for selected locations in this area, visit: http://www.climate.weatheroffice.gc.ca. For maps relating to general weather patterns, visit: http://atlas.nrcan.gc.ca/site/index.html.)*

21 *(For general **ice conditions** in Beaufort Sea, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For detailed information on present and forecast ice conditions in Northern Canada, visit: http://ice-glaces.ec.gc.ca.)*

22 The **magnetic compass** becomes erratic along the west coast of Banks Island and in the approaches to Amundsen Gulf. Elsewhere in Beaufort Sea it is reasonably stable. *(See Sheet No. 10 of the Geophysical Atlas Series published by Geological Survey of Canada.)*

Demarcation Point to Herschel Island

Chart 7661

23 **Demarcation Point** *(69°41'N, 141°17'W)* is in Alaska, 6.5 miles west of the Canada/USA boundary. The boundary monument *(69°39'N, 141°00'W)* is an obelisk 1.2 m high, on a bluff about 30 m inland from a steep sand beach.

24 The coast between Demarcation Point and Fish Creek, with the exception of the low spit fronting Clarence Lagoon, consists of steep, narrow sand and gravel beaches with tundra cliffs 6 to 10 m high, backed by a low coastal plain of tundra with small ponds and braided streams. Between Fish Creek and Herschel Island the shoreline is composed of sand and gravel beaches on the barrier spits, with a low tundra shoreline behind the spits. **British Mountains** rise behind the plain, reaching elevations of about 2,000 m 30 miles inland.

25 **Clarence Lagoon**, 11 miles ESE of Demarcation Point, is landlocked except for an entrance 0.2 mile wide. It has general depths of 2.4 m; the water is opaque and the bottom is rock and gravel. A beach, with a deserted building *(1994)* which might afford emergency shelter, is in the SW corner of the lagoon. **Clarence River**, **Craig Creek** and other unnamed streams feed the lagoon and drain the surrounding swamp.

26 **Anchorage** can be obtained 2.5 miles north of Clarence Lagoon in 20 m, sand and mud bottom.

27 **Backhouse River** enters the sea 5.5 miles ESE of Clarence Lagoon.

28 **Komakuk Beach** *(69°36'N, 140°10'W)* can be identified by 3 **conspicuous** white **domes**, one mounted on a tower and marked with an aircraft warning **light**; this is a *North Warning System (NWS)* installation.

29 Komakuk Beach *North Warning System* station is operated by the *Department of National Defence*.

30 **Caution**. — The Komakuk Beach *NWS* station is **not manned**. There is an emergency shelter

PAULINE COVE (1984)

with a telephone and a motion-activated camera but no supplies or services.

31 **Anchorage** can be obtained between 0.5 and 1 mile off Komakuk Beach in about 12 m with good holding. The anchorage is unprotected and when there is no ice offshore, onshore winds can create a heavy swell and breakers along the beach. Alternative anchorage can be found in Thetis Bay on Herschel Island, 25 miles east.

32 The former **landing beach**, composed of fine shingle and sand, has a gradient of about 1:7. A prepared road, no longer maintained, leads to the beach. An abandoned airstrip parallels the beach. The dumping ground area at the west end of the beach appears to be shallow for a short distance offshore. The composition and contours of the bottom can change from year to year because of ice action. **Fish Creek** enters the sea close east of the beach. *Northern Transportation Company* barges have berthed beam-to at the beach.

33 Ice permitting, the **usual course** for approaching the beach is 155°. In 1959, a bad ice year, a vessel had to run parallel with the shoreline, at a distance off of about 76 m, for almost 1 mile in 5 m of water in order to approach the beach from behind a ridge of hummocked fast ice 12 m high.

34 *(To view **climate** normals and averages for Komakuk Beach, visit: http://www.climate.weatheroffice.gc.ca/climate_normals/index_e.html.)*

35 **Nunaluk Spit**, to the east of Komakuk Beach, lies about 0.3 mile offshore and extends 10 to 12 miles parallel to the coast; it forms a lagoon into which **Malcolm River** and **Firth River** flow through extensive deltas. Access to the lagoon for vessels drawing less than 1 m is possible through the west or middle opening.

36 **Herschel Island** *(69°35'N, 139°05'W)* consists mainly of rolling hills, rising to an elevation of 183 m near its central part, separated by small stream valleys; the hills have small patches of dwarf willow on them.

37 The cliffs forming the NW coast of the island rise to 90 m and give good radar responses. The NE side of the island has mud cliffs, rising to about 60 m, known as **Bell Bluff**.

38 **Caution**. — A **shoal sounding**, reported in 1955, of 11 m is 3.2 miles north of Herschel Island. During a survey of this area in 1969 this shoal could not be located, but caution is advised.

39 *Herschel Island (Index No. 6525)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

40 **Ice** around Herschel Island usually breaks up in the last week of June; freeze-up is in the first week of October.

41 *(To view detailed **weather** information for Herschel Island, visit: http://www.ec.gc.ca.)*

42 **Collinson Head**, the east extremity of Herschel Island, has cliffs 80 m high.

43 *Collinson Head* **Racon**, identification *Morse* "N" (— •), operates during the navigation season from a square skeleton **tower** 6.8 m high at the top of the cliffs.

44 **Pauline Cove**, in the NE part of **Thetis Bay**, has the locality of **Herschel** on its south side on a low spit known as **Simpson Point**. Oil exploration companies have used Pauline Cove as a winter base for drilling fleets and have wintered a 150,000 dwt tanker and drillships in Herschel Basin, close south.

45 **Anchorage** in depths of 7 to 11 m can be found in Thetis Bay. Small vessels can obtain anchorage in Pauline Cove in depths of about 5 m, soft mud, but the holding ground is not very good and the cove is exposed to the SW.

46 A fine gravel beach on the north side of Simpson Point makes a good **landing beach** for small boats and seaplanes. There is deep water close to the beach at its west end, and in calm weather small vessels drawing up to 4 m can berth at the west end with a gangway ashore.

46.1 Mariners are advised that due to the dynamic environment of Simpson Point, shifting sand might

result in the movement of the point and soundings that are less than charted.

47 **Fresh water** can be obtained from small lakes in the hills NE of Pauline Cove.

48 **Workboat Passage**, between Herschel Island and the mainland, is shallow, particularly on its south side, but is used by tugs towing barges to Prudhoe Bay when ice conditions are bad north of Herschel Island. It is reported vessels drawing 2 m can navigate the passage safely at normal water levels.

49 **Avadlek Spit**, a sand spit almost blocking the west end of Workboat Passage, has **Welles Point** at its south end. **Beacon towers** with red daymarks and radar reflectors are on Welles Point and 0.3 and 1.5 miles NE.

50 There is a private **mooring buoy** 1.7 miles NE of the Welles Point beacon.

51 **Caution**. — Workboat Passage has **not** been systematically **surveyed** *(1991)*. Charted depths are based on **track soundings** obtained over several years.

52 The usual **route** leads between Welles Point and the sand bar south of it, then NE close along the east side of Avadlek Spit, then SE along the south shore of Herschel Island. From the north part of **Orca Cove**, past **Lopez Point** and **Thrasher Bay** to NNW of **Calton Point**, the route is indicated by **beacon ranges** in line bearing in succession, 110°, 355°, 110° and 342°. The easternmost range has a third **beacon** at its south end, on the west extremity of Calton Point. Each of the range beacons has a red **daymark**, 3 m high with a white vertical stripe outlined with reflective tape.

53 **Caution**. — A **sounding** of 1.4 m lies 0.25 mile NE of Calton Point; to avoid this patch the route leads close off the NE side of Calton Point, then SE into Mackenzie Bay.

54 A square skeleton **beacon tower** 6.1 m high, with red daymarks and a radar reflector, is on Calton Point. *Calton Point* **Racon**, identification *Morse* "G" (— — •), operates from the tower during the navigation season.

55 **Osborn Point**, the south extremity of Herschel Island, is a sandy spit which in 1976 appeared to be expanding toward the south and east. Two islands and a rock off the south tip of Osborn Point constrict the passage.

56 **Ptarmigan Bay**, entered from the SE end of Workboat Passage, is bounded on its east side by a very low sand and gravel spit, breached in two places *(1976)*. A prominent hill, 12 m high, is in the middle of the spit.

57 **Anchorage**, suitable for boats, can be obtained in about 1.5 m of water in the lee of the hill; the bay is not easy to enter in bad weather. Pauline Cove, 6 miles NE, or Phillips Bay, 20 miles SE, offer alternative anchorage.

58 **Fresh water** is obtainable at the head of Ptarmigan Bay.

Mackenzie Bay

Charts 7620, 7661, 7662

59 **Mackenzie Bay** *(69°20'N, 137°00'W)* lies south of a line drawn between the north extremity of Herschel Island and North Head, 100 miles east.

60 **Mackenzie Trough** leads SSE from the shelf-edge into the west side of Mackenzie Bay creating comparatively deep water close off the west side of the bay. **Pelly Lobe** forms the NE side of Mackenzie Trough. **Herschel Basin**, SSE of Herschel Island, is separated from Mackenzie Trough by **Herschel Sill**. Herschel Basin has been used as a winter base for mooring drillships and a 150,000 dwt tanker.

61 The dates of freeze-up and break-up in Mackenzie Bay are widely variable. The navigation season, usually opening in July and lasting until late September, is sometimes delayed by heavy ice until late August.

62 Along most of the west shore of the bay there is a coastal plain, rarely more than 0.5 mile wide. A rolling plateau behind the plain rises gradually to over 120 m; the plateau extends inland to the north face of the **Barn Range** and **Richardson Mountains**, which reach elevations of 1,400 to 2,000 m, about 30 miles inland.

63 The SE side of Mackenzie Bay between Tent Island and North Head, 67 miles NE, is encumbered with numerous islands forming the north and west part of Mackenzie Delta. In addition, numerous artificial islands have been constructed for oil exploration. **Mackenzie Delta** is a great fan-shaped labyrinth of alluvial banks and islands with innumerable meandering channels and shallow lakes. The islands on the west side of the delta are predominantly mud, the central islands are mainly sand and those on the east side are generally composed of gravel with some boulders. Most islands north of *68°45'N* are treeless; grasses, horse-tails, etc., grow on the seaward alluvial islands.

64 **Caution**. — The **shallows** formed by the alluvial deposits across the mouth of the Mackenzie Delta, between Shingle Point *(69°00'N, 137°25'W)*, on the west, and Cape Dalhousie, 175 miles ENE, extend several miles seaward. Great care must be taken in navigating these waters as not only are there many miles of **mud flats** covered with 1 to 2 m of water, but the **water level** is subject to rapid changes. Strong offshore **winds** can produce water depths up to 0.8 m less than charted.

65 Moose Channel, entered through Shoalwater Bay *(68°54'N, 136°45'W)*, West Channel, entered 10 miles farther east, Tiktalik and Reindeer Channels, entered respectively from the west and east sides of Shallow Bay and Middle Channel, entered close west of Kendall Island *(69°29'N, 135°18'W)*, provide access from Mackenzie Bay to **Mackenzie River**. Tiktalik and Middle Channels *(via close west of Kendall*

Island) are used the most by commercial shipping drawing up to 1.5 m. All channels except Moose Channel have been sounded; all channels are covered in the *Mackenzie River* series of small craft charts and described in *Sailing Directions — Great Slave Lake and Mackenzie River*.

66 *Mackenzie River Marine Safety Advisory Procedures* should be followed by all vessels before entering and upon leaving any of the restricted channels in Mackenzie Delta. Vessels should report to *Iqaluit MCTS* centre and maintain a continuous radio watch on the Mackenzie System emergency and calling frequency 5803 kHz *(SSB)*; if contact cannot be made with *Iqaluit MCTS* centre on 5803 kHz, VHF 156.8 MHz *(Channel 16)* may be used either directly or through another ship or shore station.

67 *(For further information concerning Mackenzie River Vessel Traffic Services, consult Radio Aids to Marine Navigation (Pacific and Western Arctic), available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*

Chart 7661

Workboat Passage to Tent Island

68 **Whale Bay** *(69°26'N, 139°02'W)*, 4 miles SSE of Workboat Passage, is enclosed by a bar. **Roland Bay**, 4 miles SSE of Whale Bay, has **Roland Creek** entering its west side.

69 **Stokes Point**, 5 miles SE of Roland Bay, is a low point which can be identified by three **conspicuous** white **domes**, one on a tower and marked with an aircraft warning **light**, and a building; this is the Stokes Point *North Warning System (NWS)* station. An abandoned airstrip is about 0.5 mile SW of the buildings. A temporary airstrip, used in 1976 by oil exploration companies, is abandoned.

70 A former **landing beach** is about 0.5 mile to the SE of the *NWS* station.

71 **Caution**. — Approach this landing beach from the north to avoid an extensive **shoal area** lying about 5 miles NE and east of Stokes Point with depths as shallow as 0.2 m.

72 The landing beach, composed of shingle and sand, is suitable for vessels with a maximum draught of 1.2 m; it is 150 m long by 75 m wide. The near shore gradient is about 1:12; farther offshore it is about 1:15. A road, no longer maintained, leads from the beach to the buildings and abandoned airstrip.

73 The beach should be approached on a course of 225°.

74 **Anchorage** can be obtained 0.6 mile off the beaching area in about 5.5 m, but the holding ground is poor, consisting of light silt.

75 **Caution**. — The Stokes Point *NWS* station is **not manned**. There is an emergency shelter with a telephone and a motion-activated camera but no supplies or services.

76 **Phillips Bay** *(69°17'N, 138°32'W)* is protected on its east side by a peninsula with **Kay Point**, elevation about 9 m, at its extremity.

77 A tripod **beacon tower** 12.2 m high, with red daymarks and a radar reflector, is 0.3 mile SE of Kaye Point. The tower has an elevation of 20.4 m. *Kay Point* **Racon**, identification *Morse* "K" (— • —), operates from the tower during the navigation season.

78 *Kay Point (Index No. 6515)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

79 **Anchorages** for boats drawing about 1 m can be found behind a narrow spit extending 1.5 miles SW from Kay Point. The inlet at the SW corner of Phillips Bay has depths of 0.9 to 1.8 m in its entrance and 1 m in its south part; it is only suitable in fine weather because the spit protecting it is usually underwater in heavy weather.

80 **Niakolik Point** is the low eastern extremity of a peninsula on the south side of Phillips Bay. **Spring River** flows into the west side of the bay, and **Babbage River** discharges into the SE part through numerous low islands formed by the alluvial deposits of the river. The main and eastern channel is narrow and boats must use caution when entering it; once inside, depths of 3 m can be found.

81 **Babbage Bight**, between Kay Point and **King Point** *(69°06'N, 138°00'W)*, is fronted by cliffs that attain their greatest elevation of 30 m at the NW end of a sand spit near King Point where they form a prominent landmark. Wave action is cutting back these cliffs and depositing the sand and gravel from them on a sand spit SE of King Point. The cliffs and spit appear to be retreating west at about 0.5 m per year.

82 The lagoon at King Point was at one time a harbour suitable for small vessels; Amundsen in *Gjoa* wintered here in 1905/06. In 1968 survey ship *Richardson* reported the entrance to the lagoon was closed and the sand bar across it had built up to a height of about 1 m. Application was made *(1985)* to build a deepsea port in this location.

83 Between King Point and Shingle Point, 15 miles SE, mud cliffs rise from a narrow shingle beach to elevations of 30 to 60 m. Notable features on this stretch of coast are three or four pingos between King Point and Sabine Point, 5.5 miles to the SE; these are 6 to 12 m high and stand at least 30 m above sea level.

Chart 7662

84 **Sabine Point** *(69°03'N, 137°44'W)* is low and inconspicuous; it may have been more prominent when seen and named by Captain John Franklin in 1826.

85 **Niaqunnaq**, part of ***Tarium Niryutait Marine Protected Area*** *(MPA)*, covers much of the portion of Mackenzie Bay south and east of Sabine Point. *Tarium Niryutait MPA* includes Okeevik *(described later in this chapter)* and Kittigaryuit *(described in Chapter 2)*. It is

prohibited, with certain exceptions, to remove, disturb, damage or destroy any living marine organism or any part of its habitat, or carry out any activity, including the depositing, dumping or discharge of any substance that is likely to result in the disturbance, damage, destruction or removal of a living marine organism or any part of its habitat within this MPA. *(For more information on Marine Protected Areas in Canada, visit http://www.dfo-mpo.gc.ca/oceans/marineareas-zonesmarines/mpa-zpm/index-eng.htm.)*

86 A square skeleton **beacon tower** 6.1 m high, with a red daymark, is between Sabine and Shingle Points. The tower has an elevation of 8.2 m. *Shingle Point* **Racon**, identification *Morse* "Y" (— • — —), operates during the navigation season from the tower.

87 **Shingle Point** *(69°00'N, 137°25'W)* is a sand spit extending 3 miles ESE from the coast and up to 1 mile offshore.

88 *Shingle Point (Index No. 6505)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

89 **Anchorage** in depths of 1.2 to 1.8 m can be found south of Shingle Point. The anchorage can be approached from the east between the mainland and **Escape Reef**, a narrow sand bank reported to be about 1.2 m dry at normal water levels. If approaching from the west, maintain a distance of 0.3 to 0.5 mile off Shingle Point sand spit.

90 An Inuit summer fishing camp is on the south side of the anchorage; it was once the home of many Inuit and had a trading post and school.

91 **Fresh water** is obtainable from a creek that enters the anchorage at the base of the spit.

92 **Trent Bay** lies between the mouths of **Running River** and **Blow River**. The flood plain in the delta area of Blow River is only about 1 m above sea level and littered with driftwood; it can be inundated during storms which occur in late summer and early fall.

93 The land on the SW side of the bay rises fairly steep from the shoreline to about 45 m and has deep ravines in places.

94 **Conspicuous buildings**, about 1 mile from the coast, are in a group at an elevation of about 50 m; the most prominent structure is a **dome**, with an aircraft warning **light**, mounted on a tower. The buildings and an abandoned airstrip belong to Shingle Point *North Warning System* station, operated by the *Department of National Defence*.

95 A **current**, apparently due to the outflow from the Blow River, appears to set constantly west between 0.5 and 2 miles offshore.

96 **Caution**. — **Water levels** in this area are greatly affected by persistent strong **winds**; strong SE'erly winds lower the water level by 0.6 to 0.9 m; strong NW winds can raise it by 1.5 m or more.

97 Observations over an eight-month period indicated **winds** predominantly from the SW and NW; strong winds *(in excess of 30 knots)* occurred in both quadrants, the greater percentage being from the SW.

98 *(To view **climate** normals and averages for Shingle Point, visit: http://www.climate.weatheroffice.gc.ca/climate_normals/index_e.html.)*

99 *(To view hourly **weather** data for Shingle Point A, visit Customized Search at: http://www.climate.weatheroffice.ec.gc.ca/climateData/canada_e.html.)*

100 **Anchorage**, reported to be good, can be obtained in 2.4 m on the south side of Escape Reef.

101 A former **landing beach** has a **gravel ramp** with deadman anchors embedded in it and depths alongside of 1.5 to 1.8 m. The ramp was used by barges, which berthed beam to. This ramp is no longer maintained. The ramp is approached on a course of 218° from a position 2 miles east of Escape Reef. Soundings in the approach gradually decrease from 2.4 to 1.2 m within 0.5 mile of the ramp, but the composition and contours of the bottom can change from year to year because of ice action.

102 **Fresh water** is obtainable from a lake 3 miles south of the station; a road, no longer maintained, connects the lake and beach.

103 **Shoalwater Bay** *(68°54'N, 136°45'W)* lies between the Blow River delta and Tent Island, 10 miles east; it is shallow, full of rocks and shoals and bordered by extensive mud flats.

104 **Whitefish Station**, on the west side of Shoalwater Bay and about 0.3 mile inside the mouth of the westernmost distributary channel of Mackenzie River, is an Inuit summer camp and a former whaling station; there are a few fish-drying racks but no permanent buildings. The approach channel leading to Whitefish Station is difficult to find; depths 0.1 mile offshore are no more than 1.5 m, but once inside the river, the channel is about 23 m wide and has depths of 2.4 to 3 m. Any boat entering the river can safely moor alongside its banks.

105 The **current** in the channel usually flows seaward but it can reverse and flow sluggishly upstream; the reversal does not necessarily coincide with tidal changes.

106 **Fresh water** is obtainable from a lake about 3 miles upstream; the water in the channel is brackish, and that in nearby lakes may also be brackish if recently flooded by storm waves.

Charts 7662, 6441

107 *(For information on the Mackenzie River channels mentioned below see Sailing Directions — Great Slave Lake and Mackenzie River. The Mackenzie River Marine Safety Advisory Procedures in effect on the river and in the navigable channels of Mackenzie Delta are described in Radio Aids to Marine Navigation (Pacific and Western*

Arctic), available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)

108 **Moose Channel** flows into the south side of Shoalwater Bay. When the water is high it is used by vessels bound for Aklavik from the west; it is unsurveyed and local knowledge is advised. Vessels with a draught greater than 1.2 m should not attempt this channel except during the few days in spring when the water is high. The coast in this part of the bay consists of steep banks of black earth with a general elevation of about 20 m rising in places to 75 m.

109 **Tent Island** *(68°55'N, 136°35'W)* is the east entrance point to Shoalwater Bay.

110 **Ministicoog Channel** enters Shoalwater Bay close south of Tent Island.

111 **West Channel** enters Mackenzie Bay about 9 miles ESE of Tent Island and is bounded by mud banks about 5 m high; it trends about 46 miles SE to the junction of Peel and Aklavik Channels.

112 Mariners should make a **report** to *Iqaluit MCTS* centre before entering and upon leaving West Channel.

Charts 7662, 6434

Shallow Bay

113 **Shallow Bay** *(68°52'N, 135°57'W)* has a bottom varying from hard sand to soft mud.

114 **Caution**. — **Navigation** in Shallow Bay should not be attempted without local knowledge due to the changing conditions of the navigable channels.

115 **Tiktalik Channel**, on the SW side of Shallow Bay, connects with West Channel.

116 Mariners should make a **report** to *Iqaluit MCTS* centre before entering and upon leaving Tiktalik Channel.

117 **Reindeer Channel**, on the north side of Shallow Bay, connects with Middle Channel 23 miles east.

118 A **channel** through the shoal water of Shallow Bay leading into Reindeer Channel is marked by unlighted port and starboard hand **buoys** *(1990)*.

119 Mariners should make a **report** to *Iqaluit MCTS* centre before entering and upon leaving Reindeer Channel.

Chart 7662

Tent Island to North Head

120 The SE side of Mackenzie Bay between Tent Island *(68°55'N, 136°35'W)* and North Head is very shoal; numerous channels of the Mackenzie River enter it.

121 On the SE side of the bay, **Langley Island**, **Ellice Island** and **Pitt Island** of the **Olivier Islands** are very low with general elevations of 1 to 2 m.

122 A tripod **tower** 18.3 m high, with a radar reflector, is near the centre of Pitt Island. *Pitt Island* **Racon**, identification *Morse* "K" (— • —), operates from the tower during the navigation season.

123 **Artificial island *Ikattok J-17***, 6 miles north of Pitt Island, is abandoned and reported *(1987)* to be awash. **Artificial island *Sarpik B-35***, 14 miles north of Pitt Island, is abandoned and has 1 m over it.

124 The unnamed sounded channel leading from Mackenzie Bay south of Olivier Islands *(69°08'N, 136°15'W)* and Ellice Island is not recommended because its approaches have not been sounded.

125 **Garry Island** *(69°29'N, 135°42'W)* has a **conspicuous bluff** at its west end which has been detected on radar at 12 miles. A radio **tower** with air obstruction **lights** is on the island.

126 **Artificial islands *Adgo F-28*, *Adgo J-27*, *Adgo P-25*** and ***Adgo C-15***, south of Garry Island, are abandoned and reported *(1987)* to be awash. ***Adgo H-29*** is abandoned and 2.8 m above water *(1987)*. ***Adgo G-24*** is abandoned and 2.6 m above water *(1987)*. ***North Ellice L-39*** is 3 m above water *(1989)*. ***Netserk B-44***, 4 miles NW of Garry Island, is abandoned and has 1.4 m over it. ***Netserk F-40***, 9 miles NNW of Garry Island, is abandoned and reported *(1987)* to have 4.6 m over it.

127 The sounded route to Mackenzie Bay from **Middle Channel** enters Mackenzie Bay east of Garry Island *(see Chart 6435)*.

128 **Kendall Island** *(69°29'N, 135°18'W)* has a maximum elevation of 30 m at its northern extremity. An abandoned settlement on its extreme NW peninsula has six log cabins *(1958)*. **Rae Island**, 3 miles NE of Kendall Island, is 30 m high and **radar conspicuous**.

128.1 **Caution**. — **Shoal water**, with depths of 1 m or less, surround Rae Island.

129 **Beluga Bay** lies between Kendall Island and North Head; Pelly and Hooper Islands lie in its entrance.

130 **Pelly Island** has high overhanging banks on its west side and steep mud cliffs about 10 m high at its north extremity. Seen from the west, Pelly Island appears as two separate islands until the low land in its centre becomes visible; a long gravel spit extends east from the island.

131 *Pelly Island (Index No. 6497)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

132 A tripod **beacon tower** 9.1 m high, with red daymarks and a radar reflector, is at the north end of Pelly Island. *Pelly Island* **Racon**, identification *Morse* "Y" (— • — —), operates at the beacon during the navigation season.

133 **Artificial island *Pelly B-35***, 2 miles east of Pelly Island, was abandoned in 1985. ***Immerk B-48***, 5 miles east of Pelly Island, is abandoned and reported awash *(1987)*.

Unark L-24, 18 miles east of Pelly Island, is abandoned and reported *(1983)* to be 2 m high.

134 **Okeevik**, part of *Tarium Niryutait Marine Protected Area (MPA)*, covers the west portion of Beluga Bay between Garry Island, Kendall Island and Pelly Island. *(For more information on Marine Protected Areas in Canada, visit http://www.dfo-mpo.gc.ca/oceans/marineareas-zonesmarines/mpa-zpm/index-eng.htm.)*

135 **Hooper Island**, highest at its west end, is **radar conspicuous**. Sand spits extend 2 miles east and south of the island.

136 *Hooper Island (Index No. 6495)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

137 **Pullen Island**, named after Lt. *(later Vice Admiral)* W.J.S. Pullen of HMS *Plover*, who discovered it in 1850, has an elevation of 38 m; its vegetation is moss.

138 *Pullen Island* **light** *(2503)* is on the summit of the island. *Pullen Island* **Racon**, identification *Morse* "G" (— — •), operates at the light during the navigation season.

139 A **mast** with red air obstruction **lights** *(not shown on the chart)* is reported to be conspicuous.

140 **Artificial island *Pullen E-17***, close east of Pullen Island, is abandoned and reported *(1989)* to have an elevation of 2 m.

141 **Harry Channel** enters Beluga Bay about 7.5 miles east of Kendall Island.

142 **Caution**. — Although Harry Channel is navigable by small craft in its upstream sections, its exits to Beluga Bay are obstructed by **sandbars**.

143 **North Head** *(69°43'N, 134°27'W)* is the north extremity of **Richards Island**.

Beaufort Sea
Kugmallit Bay to Cape Prince Alfred

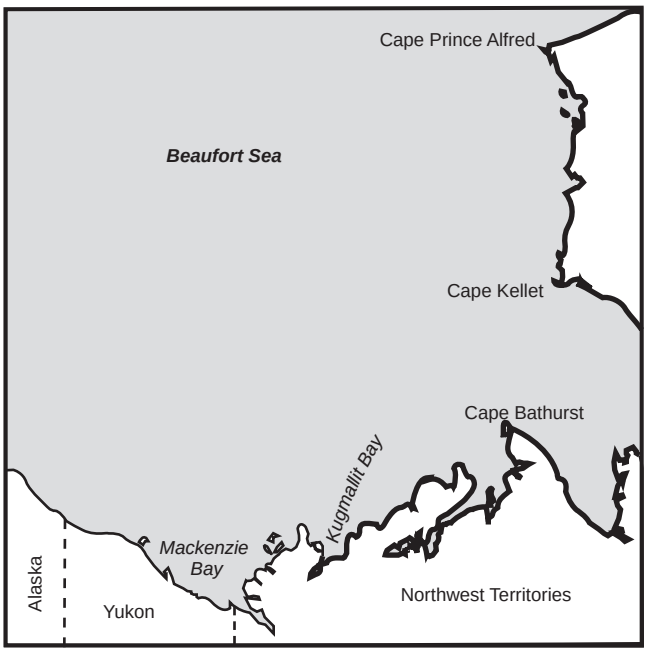
General

Charts 6431, 7600, 7620, 7621, 7663, 7664, 7685, 7832

1 This chapter describes the SE part of Beaufort Sea and the adjacent shoreline.

2 *(For general information on coastal routes through the Northwest Passage, see Chapter 5.)*

3 *Northern Canada Vessel Traffic Services (NORDREG) Zone* covers all Canadian waters described in this chapter to which the *Arctic Waters Pollution Prevention Act* applies, excluding Mackenzie Bay and Kugmallit Bay south of Latitude 70°N and east of Longitude 139°W. The primary objective of this system is to assist the master in the safe and expeditious conduct of the vessel by promulgating information on ice conditions, giving advice on routes and providing icebreaker support where available and considered necessary.



4 Traffic clearance requests and reports required by this system shall be addressed to *NORDREG CANADA*. Requests and reports may be passed through any *Canadian Coast Guard Marine Communications and Traffic Services (MCTS)* centre free of charge. All times shall be given in *Co-ordinated Universal Time (UTC)*.

5 *(For further information concerning Vessel Traffic Services in the Arctic, consult Radio Aids to Marine Navigation, available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*

6 *Mackenzie River Marine Safety Advisory Procedures* should be followed by all vessels before entering and upon leaving Tuktoyaktuk Entrance Channel or any of the restricted channels in the Mackenzie Delta. In the Mackenzie Delta vessels should report to *Iqaluit MCTS* centre and maintain a continuous radio watch on the Mackenzie System emergency and calling frequency, 5803 kHz *(SSB)*; if contact cannot be made with *Iqaluit MCTS* centre on 5803 kHz, VHF 156.8 MHz *(Channel 16)* may be used either directly or through another ship or shore station.

7 *(For further information concerning Mackenzie River Vessel Traffic Services, consult Radio Aids to Marine Navigation (Pacific and Western Arctic), available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*

8 Most of Beaufort Sea, east of the International Boundary and inside the 200 m depth contour, was surveyed

by survey vessels between 1969 and 1985 with **line spacing** of less than 1 mile.

9 **Caution**. — Outside the 200 m depth contour surveys were by **spot soundings** through the ice at intervals of about 3 miles. On *Chart 7832*, **track soundings** are in sloped figures and should be used with caution. *(For details of the hydrographic data on which a chart is based, see the Source Classification Diagram shown on most charts.)*

10 **Caution**. — Numerous submarine **pingo-like features (PLFs)** forming small **isolated shoals** exist in the caution areas outlined by magenta on *Charts 7600, 7620 and 7621*, and **undetected PLFs** may exist.

11 **Pullen Pingos**, **Kugmallit Pingos** and **McKinley Pingos** lie within the PLF caution areas. The least depth found *(1985)* in the caution areas is 9.4 m in 70°32'N, 130°43'W, but there are numerous depths under 25 m.

12 **Caution**. — In the area between these caution areas and the coast from Kugmallit Bay to Nuvorak Point the sea bottom is uneven; **undetected shoals** may exist.

13 A special survey with line spacing of 100 m was made in 1981–1983 to provide a **shipping corridor** free of undetected PLFs through areas of potential PLFs. This corridor, shown on *Charts 7600, 7620* and *7621*, is recommended for vessels transiting the area.

14 **Caution**. — Several **PLFs** with less than 20 m over them lie in the corridor.

15 **Caution**. — **Oil exploration and exploitation** drilling units and abandoned **artificial islands** hazardous to navigation can be encountered in the coastal waters of the Beaufort Sea.

16 **Submerged well-heads** of wells where there are no artificial islands are also charted. Well-heads are installed about 5 to 10 m deeper than the seabed.

17 The **tidal range** in Beaufort Sea is less than 1 m. Tidal predictions for harbours in the western Arctic are given in *Canadian Tide and Current Tables, Volume 4*.

18 **Caution**. — In the shallow waters of Beaufort Sea, **water levels** are strongly influenced by meteorological conditions. Strong offshore winds can produce water depths up to 0.8 m less than charted.

19 Under sustained strong winds **surface currents** can attain 2 knots. With a 20 knot wind the average current is about 1 knot on the surface.

20 *(For general **weather** conditions in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For present and forecast weather conditions, visit: http://www.weatheroffice.gc.ca/canada_e.html. For **climate** normals and averages for selected locations in this area, visit: http://www.climate.weatheroffice.gc.ca. For maps relating to general weather patterns, visit: http://atlas.nrcan.gc.ca/site/index.html.)*

21 *(For general **ice conditions** in Beaufort Sea, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For detailed information on present and forecast ice conditions in Northern Canada, visit: http://ice-glaces.ec.gc.ca.)*

22 The **magnetic compass** becomes erratic along the west coast of Banks Island and in the approaches to Amundsen Gulf. Elsewhere in Beaufort Sea it is reasonably stable. *(See Sheet No. 10 of the Geophysical Atlas Series published by Geological Survey of Canada.)*

Kugmallit Bay

Chart 7663

23 **Kugmallit Bay** *(69°35'N, 133°25'W)* is entered between North Head and Toker Point, 34 miles to the east. The entrance to East Channel of the Mackenzie River lies in its SW corner and Tuktoyaktuk Harbour is in its SE corner. The shores of Kugmallit Bay are low and indented by numerous shallow bays. On the south and east shores isolated pingos rise to elevations of about 50 m making conspicuous landmarks.

24 **Caution**. — An extensive area of **shoals** with a least depth of 0.4 m lies 6 to 8 miles east and ENE of Pullen Island; in heavy weather the sea breaks over them. **James Shoal**, an extensive shoal with a least depth of 2 m, lies 4 to 9 miles NNW and north of Toker Point. Shipping generally passes north of James Shoal, but a passage between James Shoal and **shoals** extending 4.5 miles north of Toker Point is frequently used, especially in a severe ice season when the Arctic pack is grounded on James Shoal.

25 **Artificial island *Arnak L-30*** is abandoned and reported *(1987)* to have 3.5 m over it. ***Arnak K-06*** is abandoned and has 2.5 m over it. ***Kugmallit H-59*** is abandoned and reported *(1987)* to have 2.7 m over it.

26 Along the coastal areas, **currents** from Mackenzie Bay to Baillie Islands are predominantly NE, caused by periods of strong NW winds and the effect of the Coriolis force on the Mackenzie River discharge. However, the dominant influence on the mean daily current is the wind associated with the passage of large pressure centres over the area; as a consequence the daily current is far from predictable.

27 **Caution**. — In Kugmallit Bay **tidal irregularities** in both time and range can be caused by local wind conditions; the effects of distant gales are also noticeable. Strong offshore **winds** can produce water **depths** up to 0.8 m less than charted.

28 Kugmallit Bay normally clears of **ice** during the first week of July. Freeze-up usually begins during the second week of October. Wide variations in break-up and freeze-up

can occur. In an abnormal season, navigation may not begin until early August. The wind plays an important role in the ice concentration which can change within a few hours from the reported conditions.

Kugmallit Bay — West Side

29 The east side of Richards Island between North Head and the entrance to East Channel is composed of steep sand and clay banks, about 15 m high, backed by rolling hills of sand and gravel.

30 **Hansen Harbour**, 7 miles SE of North Head, is suitable only for boats. **Reindeer Islands**, to the north, have elevations of about 15 m.

31 **Mason Bay**, 12 miles SSE of North Head, has depths inside of 20 m but its entrance channels on both sides of **Hadwen Island** are suitable only for boats. **Wallace Bay**, on the west side of Mason Bay, is unsounded.

32 **Crumbling Point**, the north extremity of **Summer Island**, is **radar conspicuous**.

33 **Kidluit Bay** *(69°31'N, 133°47'W)*, which provides shelter for boats, has a bar at the entrance with 0.9 m over it; inside there is a depth of 1.5 m. **Gull Island** lies in the mouth of the bay. A few ruins of Inuit houses and some graves are near the east point of the bay.

34 **Corral Bay** is separated from Kidluit Bay by a narrow isthmus.

35 **Hendrickson Island**, 3 miles east of Kidluit Bay, is low and swampy; from the east it can be identified by three knolls, the largest of which is at the south end of the island.

36 A tripod **beacon tower** 9.1 m high, with a red daymark visible from the north and a radar reflector, is on the north extremity of Hendrickson Island. The tower has an elevation of 10.6 m.

37 The coast of Richards Island south of Kidluit Bay is difficult to approach except by canoe as depths do not exceed 0.6 m within 1 mile offshore.

Charts 7663, 6431

38 **Caution**. — Transferring information between *Chart 6431* and *Chart 7663* should be done by means of **range and bearings** to features common to both charts.

39 **East Channel** *(69°20'N, 133°55'W)* of the Mackenzie River enters **Kittigazuit Bay**, the SW corner of Kugmallit Bay.

40 The **approach channel** leading through Kittigazuit Bay into East Channel is narrow, shallow and changes its configuration periodically due mainly to ice action.

41 *Kittigazuit Bay* ***light buoy*** *(1816)*, a boat-type fairway buoy with a radar reflector, marks the outer entrance of the approach channel. The channel is marked by **buoys**, which may be moved several times during the navigation season to indicate the best channel, and by **beacon ranges**.

42 *(The Mackenzie River Marine Safety Advisory Procedures, for the Mackenzie River and its approach channels, are described in Radio Aids to Marine Navigation (Pacific and Western Arctic), available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*

Kugmallit Bay — South Side

43 **Kittigazuit**, on the east side of Kittigazuit Bay at the entrance to a small harbour, is the site of an abandoned trading post.

44 **Anchorage** with good shelter for shallow-draught small craft can be found in the harbour.

45 **Whitefish Station** is a summer fishing camp used by Inuit hunting beluga whales, known locally as whitefish. The narrow entrance channel to the station leads between two sand and gravel bars and has a depth of 0.6 m *(2006)*.

46 **Whitefish Pingo**, 2 miles ENE of Whitefish Station, is **conspicuous** from the east and prominent from other directions.

47 **Canyanek Inlet** is 3 miles east of Whitefish Pingo. Its entrance is reported to be crooked with a depth of about 0.9 m and impassable in any swell. **Naparotalik Spit**, close east of the entrance, is a narrow arm of land with twin points; from the eastern point a sand bank extends 0.5 mile to the north.

48 **Kittigaryuit**, part of *Tarium Niryutait Marine Protected Area (MPA)*, covers the west half of Kugmallit Bay from Summer Island south, including Hedrickson Island, Kittigazuit Bay and the islands at the entrance to the East Channel, Mackenzie River. *(For more information on Marine Protected Areas in Canada, visit http://www.dfo-mpo.gc.ca/oceans/marineareas-zonesmarines/mpa-zpm/index-eng.htm.)*

Charts 7663, 7685

Approaches to Tuktoyaktuk Harbour

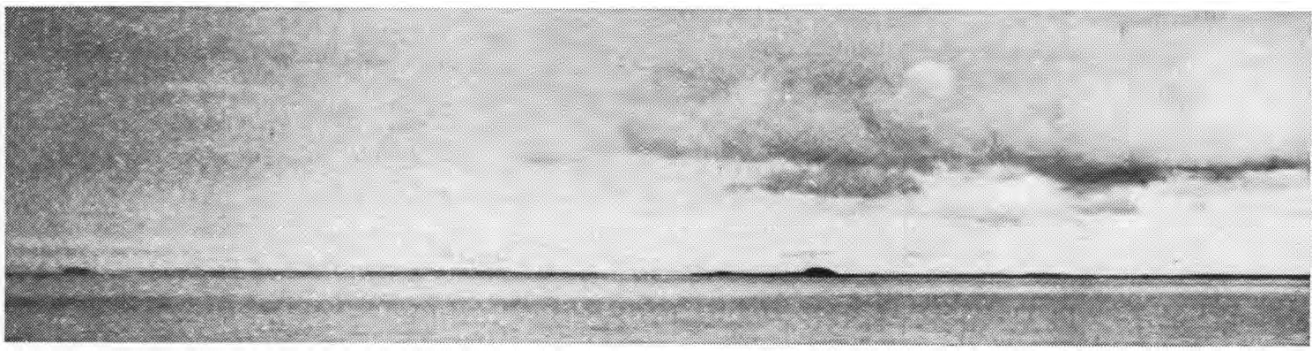
49 **Peninsula Point** *(69°24'N, 133°10'W)* is a spit at the west extremity of a narrow island. Close to the spit is a prominent headland with a high, dark, seaward face.

50 The east shore of Kugmallit Bay between Peninsula Point and Toker Point, 16.5 miles NNE, is low, swampy and bare of vegetation except for moss and grass. The only prominent features are pingos.

51 **Ibyuk Pingo** *(69°24'N, 133°05'W)* has a serrated summit split by gullies into three distinct peaks which are **conspicuous** from seaward. This pingo is a useful leading mark for the outer approaches to the harbour.

52 **Split Pingo**, 0.6 mile NNW of Ibyuk Pingo, can be distinguished by its twin rounded peaks.

NORTH PEAK FROM WESTWARD (Prior to 1961)



53 **Bare Pingo**, 1.7 miles north of Eastern Entrance to Tuktoyaktuk Harbour, is one of a group but can be identified by its steeper slopes and a conspicuous patch of bare ground near the top of its seaward side.

54 **Stick Pingo**, 0.9 mile NNE of Bare Pingo, has a rounded summit on which there is a post which helps to identify it.

55 **Shore Pingo**, 1.2 miles north of Stick Pingo, is prominent.

56 A tripod **beacon tower** 12.2 m high, with red daymarks and a radar reflector, is on the summit of Shore Pingo.

57 **Triple Pingo**, 1.5 miles NE of Shore Pingo, is one of a group of knolls but has a serrated crown with three distinct peaks that distinguish it from the others.

58 **North Peak** *(69°36'N, 132°56'W)*, 3.8 miles north of Triple Pingo, is a valuable and unmistakable landmark with steep slopes and a split crown showing two distinct peaks.

59 **Lake Pingo** and **Toker Pingo** lie, respectively, 0.7 mile WNW and 2 miles north of North Peak.

60 **Toker Point**, 2 miles NE of Toker Pingo, is low, flat and featureless except for a pingo 0.4 mile west of it with an elevation of 11 m. A tripod **beacon tower** 9.1 m high, with red daymarks and a radar reflector, is on Toker Point. The tower has an elevation of 14 m. A shallow inlet close east of Toker Point has an entrance encumbered by sand bars and two small islands. Two cabins are inside the east entrance point. At the south end of the inlet an island rises steeply to an elevation of 11 m. A bearing of 190° through this island and a pingo with an elevation of 22 m, 0.8 mile southward, forms a transit which serves to identify Toker Point.

61 **Caution**. — A **shoal** with a least depth of 1.8 m lies 3.7 miles north of Toker Point.

62 **Tininerk Bay**, 3 miles SW of Toker Point, is a shallow lagoon almost closed by a long sand spit extending from its north entrance point and by several detached sand bars.

63 **Anchorage** for small craft can be obtained 0.5 mile SSW of **Tibjak Point** in 3 m over mud bottom with some shelter from easterly winds.

64 A tripod **beacon tower** 9.1 m high, with red daymarks and a radar reflector, is on Tibjak Point. The tower has an elevation of 13 m.

65 The coast 2 miles south of Tibjak Point is distinguishable for some distance by its steep, black, eroding bank.

Chart 7685

66 **Topkak Point** *(69°30'N, 133°00'W)* and **Beluga Point** are the entrance points of a **shoal** bay.

67 A square skeleton **beacon tower** 6.1 m high, with a red daymark and radar reflector, is on the west extremity of Topkak Point. The tower has an elevation of 8.2 m.

68 The coast between Beluga Point and Tuktoyaktuk Harbour is formed of sand, gravel and boulders, backed by a steep eroding bank of earth.

69 A tripod **beacon tower** 9.1 m high, with red daymarks and a radar reflector, is on an unnamed pingo 0.75 mile SSW of Beluga Point. The tower has an elevation of 18 m.

Tuktoyaktuk Harbour

70 **Tuktoyaktuk Harbour**, relatively deep and sheltered, is the best harbour between Herschel Island to the west and Cape Bathurst to the east. Close to East Channel of Mackenzie River, the harbour is a transfer point for freight from the south destined for settlements in the western Arctic. The entrance, between **Tuktoyaktuk Peninsula** and Flagpole Point, 1 mile west, is divided into two narrow channels by Tuktoyaktuk Island. Western Entrance is used only by small craft; Eastern Entrance is the main channel.

71 **Ptarmigan Point** *(69°27'N, 133°00'W)*, at the NW entrance to Tuktoyaktuk Harbour, is the site of an unmanned *North Warning System (NWS)* station. A **radome** with an air obstruction **light**, mounted on a lattice tower, is **conspicuous**.

Two smaller domes at ground level and a building are prominent.

72 Mariners should **report** to *Iqaluit MCTS* centre on Mackenzie System emergency and calling frequency 5803 kHz *(SSB)* before entering or leaving Tuktoyaktuk Harbour entrance channels. *(See Radio Aids to Marine Navigation (Pacific and Western Arctic), available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*

73 **Caution**. — Strong **tidal streams** and **cross-currents** are experienced off Topkak Shoal, in the close approaches to Tuktoyaktuk Harbour, and in Eastern Entrance.

74 *Tuktoyaktuk (Index No. 6485)* is a reference port in *Canadian Tide and Current Tables, Volume 4*.

75 **Caution**. — Under the influence of strong winds, extreme **water levels** of 2.3 m above and 0.8 m below chart datum have been recorded.

76 Complete **ice** cover in Tuktoyaktuk Harbour usually occurs during the first week of October with variations up to two weeks. The harbour normally clears during the last week of June with variations up to two weeks. The average thickness attained by winter shore-fast ice is 203 cm with a record maximum thickness of 224 cm *(1976)*.

77 **Caution**. — Temperature inversion causing **refraction** frequently occurs in the region; this and humid weather greatly hinder the sighting and identification of landmarks. The effective range of radars can also be considerably reduced by these conditions.

78 **Caution**. — **Topkak Shoal**, which dries 0.3 m and has depths under 2 m within 0.2 mile of Tuktoyaktuk Island range line, is 3 miles NNW of Tuktoyaktuk Island. **Beluga Reef**, 0.7 mile SW of Beluga Point, is awash.

79 **Tuktoyaktuk Island**, in the entrance to the harbour, is flat-topped and has a dark, sloping bank of sliding earth along its north side; rising to an elevation of 15 m this bank serves to identify the island. The beach on the north side of the island is sand and gravel; at the west end of the island boulders predominate and extend offshore to the 2 m contour.

80 The **wreck** of a wooden barge on a gravel beach at the NE extremity of Tuktoyaktuk Island consists of only a few frames and the keel *(1991)*.

81 **Eastern Entrance**, at the east end of Tuktoyaktuk Island, is the principal entrance to the harbour. The inner part of the channel passes between **Survey Reef** and **Surprise Reef**.

82 **St. Roch Island** lies 0.1 mile south of Survey Reef. **Fort Ross Islands**, 0.2 mile SW of St. Roch Island, are joined by a sandy boulder-strewn spit. A sand spit extends 0.1 mile east from the southern island.

83 **Fort Hearne Island** is on the east side of the channel opposite Fort Ross Islands. Shoal water extends from the west side of a small unnamed island lying 0.1 mile south of Fort Hearne Island.

84 The main shipping channel approaching and through Eastern Entrance is marked by four **light ranges**, a **lighted** fairway **buoy** and by port and starboard hand **buoys** with radar reflectors.

85 **Caution**. — If much **ice** is about, there is a likelihood of the **buoys** being moved **out of position**.

86 *Tuktoyaktuk Island range* **lights** *(2507, 2508)* are on Tuktoyaktuk Island. The lights in line bearing 144½° lead to the intersection with Tuktoyaktuk Peninsula range.

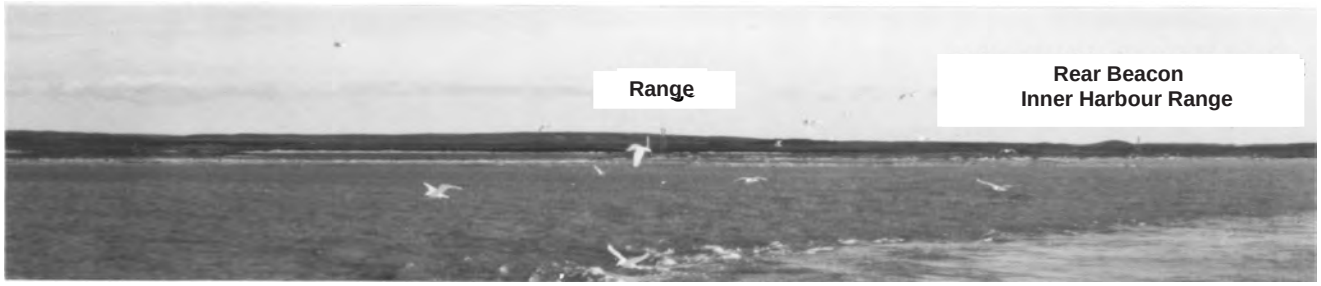
87 *Tuktoyaktuk Island Range* **Racon**, identification *Morse* "C" (— • — •), operates from the rear range tower during the navigation season.

88 *Tuktoyaktuk Approach* ***light buoy*** *"TC" (2506)*, 5 miles NNW of Tuktoyaktuk Island, is a fairway buoy with a radar reflector; it marks the turning point onto Tuktoyaktuk Island range.

89 *Tuktoyaktuk Turning* ***light buoy*** *"15" (2509)*, a port hand buoy with a radar reflector, is 0.7 mile north of Tuktoyaktuk Island, close to the intersection of Tuktoyaktuk Island and Peninsula ranges.

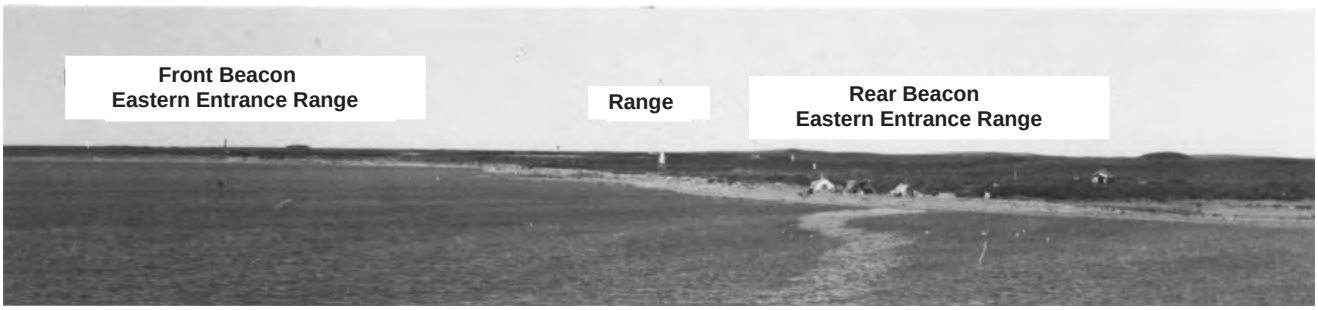
90 *Tuktoyaktuk Peninsula range* **lights** *(2510, 2511)* are on the west shore of Tuktoyaktuk Peninsula. The lights, in line bearing 099°, lead to the intersection with Tuktoyaktuk Eastern Entrance range.

TUKTOYAKTUK PENINSULA RANGE BEARING 099° (1991)



TUKTOYAKTUK EASTERN ENTRANCE RANGE OPEN OF BEARING 134° (1991)

TUKTOYAKTUK INNER HARBOUR RANGE OPEN OF BEARING 358½° (1991)



91 *Tuktoyaktuk Eastern Entrance range* **lights** *(2514, 2515)* are on shore east of Surprise Reef. The lights in line bearing 134° lead to the intersection with Tuktoyaktuk Inner Harbour range.

92 *Tuktoyaktuk Inner Harbour range* **lights** *(2512, 2513)*, on the mainland NE of Tuktoyaktuk Island, in line astern bearing 358° lead from the intersection with the last-described range through the buoyed channel into the north part of the harbour.

93 **Caution**. — Due to very **shoal water**, masters of vessels drawing more than 3 m are advised to reduce speed when 15 miles north of the harbour to reduce squat.

94 The most useful **landmarks** are North Peak, Toker Pingo, Triple Pingo, the dome near Ptarmigan Point and Ibyuk Pingo.

95 **Caution**. — Stay well clear of any abandoned **artificial islands**; they erode rapidly and may become **shoals**.

96 The usual approach course is 170½° with Ibyuk Pingo right ahead; at the intersection of this track and Tuktoyaktuk Island range line, marked by Tuktoyaktuk Approach light buoy, alter course to 144½° to bring the range in line. This range is not very sensitive; take care to avoid being set to the east as the leading line passes close to Topkak Shoal.

97 At the intersection of Tuktoyaktuk Island and Peninsula ranges, marked by Tuktoyaktuk Turning light buoy, alter course to steer on the latter range in line bearing 099°. Then, as they come into line, alter course to steer on Tuktoyaktuk Eastern Entrance range, bearing 134°, and Tuktoyaktuk Inner Harbour range, bearing 358° astern, which will lead into the harbour.

98 **Caution**. — A 3 m **depth**, position approximate, is reported *(1979)* close south of the 134° range line.

Tuktoyaktuk Harbour — West Side

99 **Flagpole Point** *(69°27'N, 133°02'W)*, the NW extremity of the small peninsula on which the hamlet of Tuktoyaktuk is situated, is a low gravel point with a steep west face 3 m high. The *RCMP* detachment buildings are on the point.

100 **Western Entrance** lies between a sand spit extending east from Flagpole Point and boulder-strewn **shoals** extending from the NW extremity of Tuktoyaktuk Island; it is about 38 m wide and used only by boats. After a severe storm in September 1970 a considerable amount of shoaling occurred; depths in this channel are likely to change after any such storm. Local knowledge is advised to navigate this entrance.

101 *Tuk Western Entrance* **beacon range**, on the west end of Tuktoyaktuk Island, in line bearing 165½°, clears the boulder-strewn **shoals** extending NW from Tuktoyaktuk Island.

TUKTOYAKTUK HARBOUR (2 PHOTOS) (June 1, 1987)

102 **Conn Island** lies in mid-channel, SE of the hamlet. A 0.6 m shoal area extends south from the island.

103 **Caution**. — **Shoals** in the harbour and **spits** extending into the harbour are marked by **buoys**.

104 **Anchorages** affording good shelter, with good holding ground in mud, can be obtained in several places in Tuktoyaktuk Harbour. The most frequently used is in that part of the harbour bounded by Tuktoyaktuk Island, Fort Ross Islands and Ptarmigan Point.

105 Ptarmigan Point and its conspicuous structures have been previously described. A shallow winding bay, close west of Ptarmigan Point, is suitable only for boats, and obstructed by **overhead cables** with a vertical clearance of 2 m.

106 **Cache Point**, 0.6 mile SSE of Ptarmigan Point, has *Northern Transportation Company* warehouses, machine shops and storage yards on it. The wharves and marine facilities are described later in this section.

107 **Caution**. — A 20 cm **submarine** water **pipeline** crosses the harbour 0.1 mile north of Cache Point.

108 **Nallok Point**, 0.8 mile SSE of Cache Point, falls sharply to the water and terminates in a narrow sand spit.

109 *Canadian Marine Drilling Ltd. (Canmar)* camp and wharf are midway between Cache and Nallok Points.

110 *Gulf Canada Resources* buildings and tanks and *Arctic Transportation Ltd.* wharf, 70 m long, and buildings are on the point 0.3 mile SW of Nallok Point.

111 **Tern Island**, 0.6 mile SSW of Nallok Point, divides the entrance to a sheltered bay. A *Canadian Coast Guard* buoy depot building is on the north shore of the bay. The channel south of Tern Island is marked by **buoys**.

112 **Caution**. — Three power station **submarine cables** extend 61 m from the north shore of the bay about 0.1 mile north of Tern Island.

113 **Reindeer Point**, 1 mile south of Tern Island, projects SE to within 0.1 mile of the east shore of the harbour.

Tuktoyaktuk Harbour — East Side

114 **Aveltkok Inlet**, the northern of three inlets which indent the east side of the harbour, has steep banks on each side of its entrance.

115 **Fresh Water Creek**, entered east of Fort Hearne Island, and north of **Kiktoreak Point**, was at one time the main source of potable water for Tuktoyaktuk.

116 **Mayogiak Inlet**, entered 0.7 mile south of Kiktoreak Point, has a limiting depth of 1.8 m in its entrance.

117 **Saviktok Point** is the south entrance point of Mayogiak Inlet. The *Esso* supply depot and an abandoned airstrip are SE of the point. The depot has living quarters, warehouses and machine shops.

118 **Kriterk Point**, which rises steeply, and **Malrok Point** project from the east side of the south part of the harbour.

Tuktoyaktuk

119 **Tuktoyaktuk** hamlet was established in 1934 as Port Brabant; it has a population of 870 *(2006)*. A *North Warning System* station and base stations for oil exploration companies are here. *Fisheries and Oceans Canada* has a warehouse here as well; *Natural Resources Canada* has a lab for the *Polar Continental Shelf Program*.

120 Tuktoyaktuk is a transfer base for supplies brought by river barge from Hay River for reshipment to settlements as far east as Spence Bay.

121 *(For **climate** normals and averages for Tuktoyaktuk, visit: http://www.climate.weatheroffice.gc.ca/climate_normals/index_e.html.)*

122 Satellite-based **telecommunications**, including the internet, connect Tuktoyaktuk with other northern communities and to cities to the south. **Transportation** to Tuktoyakuk from Inuvik is by ice road in winter; by boat in summer or by aircraft year-round.

123 Mail arrives five days a week. *Hotel Tuk Inn* and *Pingo Park Lodge* offer accommodation, and there is a well-stocked general store. A *Canadian Imperial Bank of Commerce* conducts business here.

124 The *Rosie Ovayouk Health Centre* provides basic health care; dentists and other health-care professionals visit regularly. An air ambulance service is available to evacuate serious cases. A detachment of *RCMP* officers provide police services. *Canada Border Services Agency (CBSA)* provides a seasonal *Commercial Vessel (C/VESS)* service through *CBSA* Inuvik.

125 A gravel airstrip 1,524 m long, operated by *Government of NWT*, is on the west side of the harbour. *Aklak Air* has scheduled flights up to three times a day.

126 An aeronautical rotating white **light** is shown from near the airstrip.

127 An **aeromarine radiobeacon** close north of the airstrip transmits on 380 kHz with identification *Morse* "YUB" (— • — — • • — — • • •).

128 A T-shaped Public **wharf**, at the hamlet, is 15 m wide across the outer end with a depth of 2.1 m alongside this face. Mechanical equipment is available for off-loading barges.

129 Diesel fuel, gasoline and water are available, and *Northern Transportation Company Limited* has repair facilities.

130 A float for servicing aircraft is about 50 m south of the public wharf.

131 The *Northern Transportation Company* transshipment site is at Cache Point. A jetty 70 m long and 15 m wide with depths of 1.2 to 4.6 m alongside is on the SE extremity of the point. The NE side of the jetty may prove untenable for small vessels during NE winds. Fresh water is available at this jetty.

132 **Ramps** for unloading heavy cargo from landing craft are on both sides of the jetty.

133 A **ramp** and a **wharf**, operated by *Canadian Marine Drilling Ltd. (Canmar)* are between Cache and Nallok Points. The ramp has a 10 m long face and the wharf, to the south, is 125 m long.

134 The ruins of berthing **dolphins** are on the south side of Saviktok Point.

135 A **crib** structure, at the shore 0.1 mile SE of Saviktok Point, is the remains of a former bunker fuel wharf.

136 *Esso Resources Canada Ltd.* wharf, 0.1 mile south of the former bunker wharf, has a berthing length of 78 m along its north face and 50 m, with a depth of 5 m, alongside its west face; its south face consists of a rock rip-rap wall.

137 A barge ramp is 0.1 mile south of the *Esso* wharf.

138 **Caution**. — **Mooring buoys** south of Cache Point and south of Nallok Point can accommodate vessels up to 122 m long. **Anchorage is prohibited** in both mooring areas. **Mooring buoys** are also south of Kiktoreak Point, west of Saviktok Point and north and west of Kriterk Point.

139 **Haul-out areas** for tugs and barges are in the small bay SW of Cache Point.

140 Vessels **wintering** in Tuktoyaktuk generally moor to the buoys south of Cache Point. Vessels wintering here have reported no damage due to ice pressure but it is advisable to keep stern posts and rudders clear by cutting out the ice surrounding them once a week.

Kugmallit Bay to Liverpool Bay

Charts 7663, 7664

141 Between Toker Point *(69°39'N, 132°50'W)* and Cape Dalhousie, 75 miles NE, the north coast of Tuktoyaktuk Peninsula is low and, apart from several pingos, quite flat. Liverpool Bay lies to the east and SE of Tuktoyaktuk Peninsula. The peninsula is a grazing reserve for reindeer. Since 1970 there has been a considerable amount of oil exploration in the vicinity.

142 The coast is fronted by many long sand banks generally running parallel to it. Erosion is reported to be constantly taking place thus depths are changing. Inshore depths can be expected to differ significantly from normal during gales.

143 **Shelter** for vessels of moderate draught can be found in Hutchison and McKinley Bays.

144 Off the NE part of the peninsula **visibility** is rarely more than 5 miles, even on a fine day; this condition, which is due to the mixing of cold and warm air, prevails throughout the navigation season.

145 **Caution**. — **Pingo-like features** in addition to those charted may exist in the area outlined by magenta on the chart *(see Caution on Chart 7663)*.

146 **Caution**. — A **shoal** with a depth of 7.3 m was reported *(1960)* to lie 8 miles north of Relief Islet *(70°09'N, 130°49'W)*. Although surveys made between 1969 and 1972 failed to confirm its existence, mariners should exercise caution in this area.

Chart 7663

Kugmallit Bay to McKinley Bay

147 **Paaraluk Bay** *(69°37'N, 132°43'W)*, entered east of **Mingnuk Point**, is shallow, with a very narrow entrance.

148 **Kukjuktuk Bay**, entered 4 miles east of Toker Point, has **Niutungiak Peninsula** extending from its east side.

149 **Tuft Point** *(69°43'N, 132°34'W)* and **Warren Point** are the west and east extremities of a long sandy spit. Strong west winds have been known to raise the water level and completely cover the east end of the spit. A **breakwater**, position approximate, is constructed west of Tuft Point in support of oil exploration operations. A dredged basin south of the breakwater is used as a winter haven and for assembling caissons.

150 *Tuft Point* **light** *(2517)* is 2 miles ENE of the point. A cabin is close east of the light.

151 A tripod **beacon tower** 12.2 m high, with red daymarks and a radar reflector, is 3 miles WSW of Warren Point. The tower has an elevation of 18 m. *Warren Point* **Racon**, identification *Morse* "C" (— • — •), operates from the tower during the navigation season.

152 **Beluga Shoals**, which have a drying patch, extend 5 miles north of Warren Point. **Breakers** on the shoals indicate their general east limit.

153 **Hutchison Bay** *(69°45'N, 132°09'W)* is entered between Warren Point and **Bols Point**, 6 miles east. **Sakvalunat Point** is a peninsula extending from the south shore. Fir trees are reported to grow along the banks of small rivers flowing into its south side although the tree line is considered to be many miles SE.

154 **Artificial island *West Atkinson L-17***, abandoned and reported to have 2.1 m over it *(1987)*, lies in the entrance to Hutchinson Bay.

155 **Anchorage** has been obtained close south of Warren Point in a depth of 2.4 m with mud bottom and good holding ground. The anchorage offers shelter from west winds, and small craft have safely ridden out hurricane force winds.

156 The lagoon south of Warren Point has sand hills rising to about 8 m on its south shore. The west side of the lagoon is formed of low sand spits which dry about 0.9 m; as with Warren Point, these spits have been known to be completely submerged during strong west winds.

157 Approaching from the west, pass well north of Beluga Shoals, then steer south for the middle of the entrance to the bay taking care to give a wide berth to the abandoned artificial island until Warren Point bears NW; then steer west into the anchorage.

158 **Fresh water** is obtainable from nearby lakes.

159 **Caution**. — The coast between Bols Point and **Drift Point**, 8.5 miles NE, is fronted by a **sand bank** extending 2 miles offshore.

McKinley Bay

160 **McKinley Bay** is the site of an oil exploration company support and supply base approached through a dredged channel. **Atkinson Point** *(69°57'N, 131°27'W)* is formed of prominent sand hills 12 m high. A few graves of a former Inuit settlement are on the point. From Atkinson Point above- and below-water sand spits, on which the sea breaks, extend across the west half of the entrance to McKinley Bay. The east side of the bay has generally low sandy shores fronted by numerous sand bars, making landing by small craft difficult. A **peninsula** 12 miles NE of Atkinson Point, and some **pingos** 2 miles farther east, are **radar conspicuous**.

161 *Atkinson Point (Index No. 6476)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

162 *Atkinson Point* **light** *(2518)* is on the grass-covered point.

163 *Atkinson Point* **Racon**, identification *Morse* "Y" (— • — —), operates at the light during the navigation season.

164 **Artificial island *Kannerk G-42***, 7 miles NE of Atkinson Point light, is abandoned and reported *(1987)* to have 3.2 m over it.

165 An approach **channel**, a **turning basin** and a **mooring basin** have been dredged *(1993)* in the bay to a least depth of 9 m. A **shoal area** composed of dredged materials lies along the east side of the channel. A small islet 0.25 mile NE of the turning basin is marked by a **pole** with a **radar reflector**. This aid is privately maintained.

166 **Beacon ranges**, in line bearing 193° and 229°, lead respectively through the outer and inner sections of the dredged channel. These aids are privately maintained.

167 An **artificial island** on the north side of the mooring basin, known locally as **McKinley Island**, was built for storing drilling and dredging equipment; it has an abandoned airstrip.

168 A channel 100 m wide with depths of 7 to 11 m *(1981)* leads from the mooring basin to the south side of the island.

169 Oil exploration companies have wintered their drilling fleets in this basin.

170 **Anchorage** in about 3.7 m, mud, with good holding can be found 1 mile east of Atkinson Point, south of the sand spit.

171 In strong east winds, sheltered **anchorage** with excellent protection from the sea and good holding can be found about 1 mile off the east shore of the outer part of McKinley Bay in 4 to 6 m.

172 Survey ship *Baffin* anchored north of Atkinson Point on two different occasions in 1970 but was forced to leave because her anchor dragged due to poor holding ground.

173 **Louth Bay** is in the NW part of McKinley Bay. A **shoal**, which is just covered at high water, is in Louth Bay.

174 The approach from the anchorage east of Atkinson Point to Louth Bay is reported to be difficult and the channel narrow; mariners are advised to sound ahead and mark a channel with buoys.

Chart 7664

McKinley Bay to Russell Inlet

175 **Pingos**, 4 miles NE, and the coastline, about 4 miles north of the east entrance point to McKinley Bay, give good radar responses.

176 **Phillips Island**, 15 miles NE of Atkinson Point, is low. **Relief Islet** *(70°09'N, 130°49'W)* lies 1.2 miles NE of Phillips Island at the SW end of **Crescent Bank**, a curving line of detached sand banks extending 8 miles NE. **Seal Bay** is SE of Relief Islet.

177 A tripod **beacon tower**, 9.1 m high, with a red daymark and a radar reflector, is on Relief Islet. *Relief Islet* **Racon**, identification *Morse* "G" (— — •), operates from the beacon tower during the navigation season.

178 **Nuvorak Point**, 8.5 miles east of Relief Islet, is known locally as **Cape Brown**; it is formed of low cliffs and fringed with shoals on which the sea breaks. A patch with 1.2 m over it lies 4 miles NE of the point.

179 A tripod **beacon tower** 12.2 m high, with a red daymark and a radar reflector, is on Nuvorak Point.

180 **Russell Inlet**, between Nuvorak Point and Cape Dalhousie, does not afford shelter in adverse weather.

181 **Cape Dalhousie** *(70°15'N, 129°40'W)*, the north extremity of Tuktoyaktuk Peninsula, has brown sand cliffs 3 to 5 m high fringed by a beach and backed by sand dunes which reach elevations of 18 m. Winter airstrips have been built on the ice at Cape Dalhousie.

182 To the north and west of Cape Dalhousie, about 1.5 miles offshore, a curving sand bar links three detached islands which rise 3 to 6 m above the sand bar and give good radar responses.

183 **Breakers** have been reported to extend a considerable distance NE of Cape Dalhousie.

184 A tripod **beacon** tower 9.1 m high, with a red daymark and a radar reflector, is on an island 1 mile NW of the cape. The tower has an elevation of 15.6 m. *Cape Dalhousie* **Racon**, identification *Morse* "G" (— — •), operates from the beacon tower during the navigation season.

185 *Cape Dalhousie (Index No. 6472)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

186 The islands and sand bars north and west of Cape Dalhousie provide a sheltered **anchorage** for small craft 0.5 mile south of the eastern island in 1.8 m over a good sand bottom. Approach from the east over a bar with a reported depth of 1.8 m; the west approach is very shallow.

187 **Caution**. — **Depths** in the vicinity must be expected to change due to erosion. It was reported *(1955)* that an island 6 m high had been removed by wave action over a period of 20 years.

Liverpool Bay

Charts 7664, 7608

188 **Liverpool Bay** is entered between Cape Dalhousie and Cape Bathurst *(70°34'N, 128°00'W)*, 39 miles NE. At the south end of the bay, 85 miles SW of Cape Bathurst, a narrow navigable channel leads east and north of four narrow peninsulas, called The Fingers, into Eskimo Lakes.

189 **Caution**. — **Depths** in Liverpool Bay north of Turnabout Point *(Chart 7608, 69°41'N, 130°20'W)* are from spot soundings through the ice obtained in 1974 with some soundings spaced as much as 3.5 miles apart.

The area south of Turnabout Point was surveyed in 1971 but shoals were not examined. Harrowby Bay, on the east side of Liverpool Bay, was surveyed in 1972 with sounding lines spaced 0.25 mile apart. *(See Source Classification Diagram on Chart 7664.)*

190 **Ice** usually begins to break up during the first week of July and the bay clears of ice in the third week of July. Freeze-up begins, on the average, early in the second week of October with the ice becoming consolidated about four weeks later. Variations of two to three weeks in break-up and freeze-up can occur.

191 Ice conditions in the vicinity of Baillie Islands, on the east side of the entrance, can vary considerably. In some years the Arctic pack lies close to Baillie Islands forming rafts up to 20 m high. Icebreaker assistance was required during 1964 to pass north of Baillie Islands into Amundsen Gulf because the Arctic pack lay close inshore for the entire navigation season. In 1974, persistent NW'erly winds kept the ice close to shore causing difficult navigation throughout the season.

192 A **tidal stream** off Cape Dalhousie has been noted to flow easterly at 1 to 2 knots during a falling tide and westerly at a similar rate with a rising tide.

193 A **current** flows SE at about 1 knot off the west side of Baillie Islands but along the east side it flows NW from Amundsen Gulf at about 2.5 knots. A large **eddy**, circling clockwise, extends about 3 miles north of Observation Point *(70°38'N, 128°16'W)*, where the two above-mentioned currents meet. When the ice is close to Observation Point, a strong **current** generally sets east to SE around the north end of Baillie Islands into Amundsen Gulf, often attaining more than 2 knots.

194 **Tidal streams** as great as 2 knots have been reported on the north side of the bay in an anchorage 7.5 miles north of Turnabout Point.

195 East of Campbell Island, near the head of the bay in an anchorage 1.2 miles off Sanders Creek, strong **tidal streams** of 1 to 3 knots have been experienced. The flood stream is both longer and stronger in duration than the ebb, running about 7 hours. A very definite slack water period was noted between the streams, lasting about 20 minutes.

196 **Caution**. — **Tide-rips** and **eddies** have been observed off the east side of Liverpool Bay, west of Nicholson Island *(69°55'N, 128°57'W)*.

197 A light green-brown **discolouration** of the water has been noted up to 3 miles north of Observation Point and up to 2 miles off the west side of Baillie Islands. A slight **tide-rip** marks the boundary of discolouration.

198 **Caution**. — **Storms** and **winds** from the west can raise **water levels** by more than 1.5 m to submerge the offshore sand bars and flood the coastal areas. NE winds, while usually of less strength, are commonly of longer duration and, due to a funnelling effect, can cause rough seas between Nicholson and Campbell Islands.

199 Snow falls as early as August and remains from September to late April.

Chart 7664

Liverpool Bay — West Side

200 The west side of Liverpool Bay is formed by the lake-strewn east coast of Tuktoyaktuk Peninsula, which is a reindeer grazing reserve.

201 Between Cape Dalhousie and **Char Point** *(70°06'N, 129°22'W)*, 11 miles SSE, shoal water extends up to 5 miles offshore and the bottom is mainly sand.

202 **Johnson Bay**, 5.5 miles SSW of Char Point, has a sand bar off its entrance.

203 Between Johnson Bay and an unnamed point 20 miles SW, the water close inshore is relatively deep and parts of the coastline give good radar responses. **Pulsating Pingo** is 7 miles SW of Johnson Bay.

204 **Anchorage** for small craft can be found in a small bay SW of the above-mentioned unnamed point. The anchorage has good holding ground of stiff mud in 7.3 m of water and is sheltered by a sand spit to the NE. **Tidal streams** up to 2 knots occur in this anchorage.

Liverpool Bay — East Side

205 **Cape Bathurst** *(70°34'N, 128°00'W)*, elevation about 4 m, is the north extremity of a broad peninsula that forms the east side of Liverpool Bay and separates it from Franklin Bay to the east. The land in the vicinity is gently undulating with marshes and lakes in the depressions. A narrow gravel and sand spit extends 1.5 miles NW of the cape; the shape, position, and continuity of this spit can often change in a single storm. An abandoned cabin *(1991)* is on high ground about 1 mile SE of the cape.

206 **Baillie Islands** lie 2 miles NW of Cape Bathurst. The coasts of the main island have steep sliding mud cliffs; this and its generally flat top give it an easily recognized square appearance when fully raised above the horizon. This island is frequently masked by low cloud, but its seaward faces give good radar responses. From a distance the island appears as an extension of Cape Bathurst; Snowgoose Passage is difficult to distinguish, even by radar. The site of an old settlement, which existed in 1925 but has long since been abandoned, is on a very low sand spit at the SE corner of the island.

207 *Baillie Islands (Index No. 6443)* is a secondary port in the *Canadian Tide and Current Tables, Volume 4*.

208 **Observation Point** *(70°38'N, 128°16'W)*, the north extremity of Baillie Islands, has an elevation of 12 m and a conspicuous overhanging cliff. A prominent radio **tower** is 3 miles SSE of the point.

209 A tripod **beacon tower** 9.1 m high, with red daymarks and a radar reflector, is on Observation Point. The

BEACON ON SW END OF BAILLIE ISLANDS (1991)

tower has an elevation of 15.1 m. *Baillie Islands* **Racon**, identification *Morse* "K" (— • —), operates from the tower during the navigation season.

210 The SW extremity of the main Baillie Island is a long narrow curving sand spit detached from the island by a gap about 100 m wide *(1983)* and slowly widening; the spit itself is moving slowly eastward.

211 A tripod **beacon tower** with a height of 9.1 m, with red daymarks and a radar reflector, is on this spit.

212 The long inlet in the south shore of the main Baillie Island dries at low water. Another smaller inlet on the east shore of the same island has a sand spit obstructing its entrance.

213 **Snowgoose Passage**, separating Baillie Islands from the mainland, is constricted to about 0.5 mile wide at its NE entrance by a sand spit extending NW from Cape Bathurst. There is a least depth of 2.7 m in the passage, but depths are liable to change due to erosion and subsequent silting. The channel between the two Baillie Islands is very shallow, hardly deep enough for a boat.

214 **Anchorage** for shallow-draught vessels, with shelter from any wind, can be obtained in the vicinity of Snowgoose Passage by shifting berth, but there is no single sheltered anchorage from all winds. Good holding ground can be found in 3.7 m, mud, on the east side of the sand spit extending south from the SW end of the large Baillie Island. Survey ship *Richardson* has ridden out several westerly gales in this anchorage; the usual approach is from SW.

215 **Anchorage** in 2.1 m can be obtained 0.1 mile offshore in the shelter of the hook at the NW end of the sand spit extending NW from Cape Bathurst. Water sweeps over the low points of this spit in a gale. Entrance to this anchorage from east should be made around the north end of the spit extending NW from Cape Bathurst; as this end of Snowgoose Passage is reported to be silting, depths in this entrance are likely to be less than charted.

216 Between Cape Bathurst and **Cy Peck Inlet**, 14 miles south, the east side of Liverpool Bay consists mainly of **radar-conspicuous** mud **bluffs**. The entrance to Cy Peck Inlet is narrowed by a sand bank on its west side. Five small rivers flow into the inlet from the swampy land around it.

217 **Harrowby Bay** is entered between an unnamed point 5 miles south of Cy Peck Inlet and Ikpisugyuk Point, 7 miles farther SSW. Its south shore is swampy, rising to elevations of about 45 m 4 miles inland. **Old Horton Channel**, at the head of Harrowby Bay, has depths of about 1 m for 10 miles from the entrance.

218 **North Star Harbour**, a narrow inlet on the north side of Harrowby Bay, offers good protection for small craft. The entrance to the harbour is difficult to identify from more than 1 mile offshore because of overlapping headlands. The entrance is partially closed by sand bars but the channel through the bars is more than 30 m wide and not difficult to follow. Once inside the entrance, depths of 2.7 m continue for about 1 mile. The beach around the harbour is gravel with wave-cut bluffs 4 to 7 m high behind it. Boats drawing 1 m can lie alongside the gravel beach.

SE SIDE OF BAILLIE ISLANDS FROM SNOWGOOSE PASSAGE (1991)

SPIT NW OF CAPE BATHURST FROM SNOWGOOSE PASSAGE (1991)

219 **Fresh water** is obtainable from small ponds within 0.2 mile of the harbour.

220 **Water levels** in Harrowby Bay are greatly influenced by the wind. Strong west winds will raise the water level by as much as 0.8 m above normal.

221 **Ikpisugyuk Point** *(70°09'N, 128°08'W)* is low with a narrow spit extending 1.7 miles south and SE from it. A crescent-shaped sand spit west of the point is separated from it by a channel, 0.2 mile wide, running into an unnamed inlet.

222 **Maitland Point** is a low sand flat backed by overhanging cliffs 15 m high. The abandoned buildings of a former *RCMP* post on the point are in danger of being destroyed by erosion of the cliffs.

223 **Cape Wolki** *(70°06'N, 128°22'W)* is **radar conspicuous**.

Wood Bay

224 **Wood Bay** is entered between Cape Wolki and Nicholson Island. Alluvial deposits from Anderson River at the head of Wood Bay have caused widespread shoaling throughout the bay. Anderson River water can usually be detected in the bay as far north as Hepburn Spit by its freshness and colour. A sharp line of contrast between the silty river water and the brackish water of Liverpool Bay can often be seen off Hepburn Spit, where the water is frequently fresh enough for drinking.

225 Because of the early break-up of the Anderson River, Wood Bay is normally free of **ice** before Liverpool Bay.

226 **Caution**. — Strong east **winds** will lower the **water level** in Wood Bay up to 0.5 m while strong west winds will raise it as much as 0.8 m above normal.

227 **Mason River** enters Wood Bay 8 miles south of Cape Wolki. A **sand bar**, exposed at low water, is reported *(1987)* to front the delta. A narrow, 1.5 m deep, channel is reported at the south end of the delta.

228 **Cape Sangro**, 7 miles farther SW, has an elevation of about 30 m.

229 **Stanton**, 4 miles SSW of Cape Sangro, is the site of an abandoned settlement which, until 1958, consisted of a trading post, a Roman Catholic Mission and a small Inuit population. Of the abandoned structures, the Mission building, with its bell-tower, is the most prominent. The site was originally chosen because of the good fishing and the availability of driftwood.

230 The rolling terrain in the vicinity rises to about 45 m and is covered with willows less than 0.5 m high; grasses and sedges are abundant.

231 **Castle Bluff** *(69°47'N, 128°46'W)* rises to an elevation of about 60 m.

Chart 7620

232 **Anderson River** *(69°43'N, 129°00'W)* enters the south end of Wood Bay through a broad delta of low islands and sandy tidal flats. Several species of willow cover the islands. The mainland, a fairly level plain for some distance in from the delta, is bounded by rounded hills, rising to elevations of about 30 m. The river is more than 200 miles long.

233 **Fox Den Island** is the largest of the delta islands; the other named islands are **Gull Islets**, **Brant Island**, **Flat Island**, **Cold Island** and **Triangle Island**.

234 On the east side of the river entrance, a hill 58 m high has exposed light grey shale slopes marked every 1 to 3 m by blackish iron-stained bands.

235 **Stanton Channel** leads between **Grassy Point**, the east entrance point to Anderson River, and Gull Islets. However, the normal approach to Anderson River is through **Nicholson Channel**, which runs between Brant Island and Gull Islets. At low water, mud flats are exposed or are just covered on either side of the channel. The channel is about 0.1 mile wide, bordered by low levees and, if approached with care at high water, can be navigated by boats with a draught of about 1 m.

236 The abandoned **Anderson River** settlement, formerly called **Krekovik Landing**, is on the mainland. The buildings are used *(1988)* by *Environment Canada* biologists every summer.

237 The **tide** has a reported **range** in Anderson River of a little less than 0.6 m with its effect being felt as far as **Husky Bend**, 20 miles upstream; a definite slackening of the river **current** occurs on a rising tide.

238 River **ice** is reported to break-up about mid June; freeze-up commences in late September.

239 **Shearpin Creek** enters the west side of Wood Bay.

Chart 7664

240 **Nicholson Island** *(69°55'N, 128°57'W)* is separated from **Nicholson Point** by a narrow channel which has been transited by a vessel drawing 1.5 m. The island has hills with elevations more than 75 m, bounded by cliffs of sand and mud, in its northern half. A *North Warning System* station operated by the *Department of National Defence* is on the island.

241 The *North Warning System* station has a **conspicuous radome**, with an air obstruction **light**, mounted on a lattice tower. Two smaller domes at ground level and a building are prominent.

242 **Caution**. — The Nicholson Island site is **not manned**. There is an emergency shelter with a telephone and a motion-activated camera but no supplies or services.

243 **Hepburn Spit**, at the NE end of Nicholson Island, forms the east side of a shallow harbour with depths between 0.9 and 4 m.

244 A former **landing beach** is on the east shore of Nicholson Island at the head of the harbour. The water is reported to shoal to 1.8 m about 0.4 mile from the landing beach, and to about 0.9 m off the beach.

245 **Anchorage** can be obtained close off the outer side of Hepburn Spit in a depth of 5 m.

246 Survey ship *Richardson* found anchorage with good holding ground and shelter from westerly gales in the inner harbour.

247 The normal **tidal range** is reported to be about 0.5 m.

248 Observations taken over an eight-month period indicate the most prevalent **winds** are from east and west. The strongest winds, with velocities in excess of 30 knots, occurred with about equal frequency from these directions and slightly less so from the NW.

249 **Caution**. — It is reported that persistent strong SE'erly **winds** can decrease the **water level** by 0.3 to 0.6 m and that persistent strong northerly winds can raise the level by 0.9 m.

250 An **abandoned airstrip** is on Hepburn Spit.

251 **Fresh water** is obtainable from a lake 0.5 mile north of the dome.

252 **Caution**. — Because of extensive **shoaling** and **fluctuating water levels**, masters who have brought supplies to the area recommend great caution be exercised in the vicinity of Hepburn Spit.

253 **Niarkrok Harbour**, at the SE corner of Nicholson Island, is formed by a crescent-shaped sand spit on its east side. During a severe westerly storm in September 1971 the sand spit became completely submerged and it was reported that the harbour offered poor shelter. **Anchorage** in 2 m has been obtained 3 miles west of Niarkrok Harbour.

Liverpool Bay — Inner Part

254 From Nicholson Point to **Cliff Point**, 10 miles WSW, the coast gives good radar responses.

Chart 7608

255 **Turnabout Point** *(69°41'N, 130°20'W)*, 17 miles WSW of Cliff Point, is a broad cape about 30 m high.

256 **Anchorage** can be obtained 7 miles SSW of Turnabout Point, about 1.2 miles off the entrance to **Sanders Creek**. This anchorage offers good holding in 6 m over a stiff mud bottom, but strong **tidal streams** have been experienced *(see note regarding currents at the beginning of the Liverpool Bay section)*.

257 **Smoke River** and **Moose River** enter Liverpool Bay 12 and 17 miles, respectively, SSW of Turnabout Point.

258 **Campbell Island**, near the head of Liverpool Bay, is about 1.5 m high and, except for one prominent pingo near its north end, is marshy and makes a very poor radar target.

259 **Caution**. — **Shoal ledges** surround Campbell Island and great care should be exercised when passing it because perceived distances are very deceiving; it is possible to run aground even though the vessel appears to be some distance offshore.

260 **Thumb Island** *(69°28'N, 130°53'W)* lies 2 miles SSW of Campbell Island in the approaches to Eskimo Lakes.

261 A *North Warning System* station is on the mainland shore of Liverpool Bay west of Campbell Island. There are three **domes**, one mounted on a tower and topped with an aircraft warning **light**, and a single building here.

262 **Caution**. — The Liverpool Bay *NWS* station is **not manned**. There is an emergency shelter with a telephone and a motion-activated camera but no supplies or services.

263 Usual **routes** into the Eskimo Lakes are charted. The alternate track leading north and west of Campbell Island has shoal ledges and spits extending from the shoreline on both sides. Between the SW and narrowest part of the channel and Thumb Island, the bottom is very uneven.

264 It is reported that a **radar-conspicuous** V-shaped **cut**, on the SW side of Campbell Island, can be used as a marker for approaching the narrow channel north of Thumb Island. Steer 250° with this cut astern to approach the channel entrance that lies between the north end of Thumb Island and the spit at the south end of Tuktoyaktuk Peninsula.

265 **Caution**. — The usual track on the east side of Campbell Island is encumbered with off-lying **shoals** with 0.8 m over them; toward the south end of this route the bottom is very uneven. The **shoal areas** in the above-mentioned routes **have not been examined**. Strong **winds** can make navigation **dangerous**.

Eskimo Lakes

266 **Eskimo Lakes**, known locally as **Husky Lakes**, extend 70 miles SW from Liverpool Bay.

267 The **entrance** to the Eskimo Lakes is established as being midway between the north tip of Thumb Island and the south tip of a gravel spit *(69°32'N, 130°56'W)* protruding south from Tuktoyaktuk Peninsula. Hans Bay is near the head of the lakes.

268 From NNW of Thumb Island, the route follows the Tuktoyaktuk Peninsula shore for 6 miles, then crosses the north end of several peninsulas known locally as **The Fingers**. This route was surveyed in 1976; it has relatively deep water and is clear of shoals in mid-channel. The foreshore is mud. Shoal ledges and spits project up to 0.2 mile from both sides into the channel. A fisheries research camp, on Tuktoyaktuk Peninsula shore north of the third peninsula, is operated on a seasonal basis.

269 A **beacon**, consisting of a **mast** with a red **daymark** at an elevation of 8.5 m, is 1 mile north of Thumb Island on the south extremity of the spit extending from Tuktoyaktuk Peninsula. The condition of this beacon is unknown *(2009)*.

270 **Caution**. — A reconnaissance survey of a track leading through the centre of Eskimo Lakes as far as Bonnieville Point *(68°50'N, 133°24'W)* and including Hans Bay was conducted in 1976 but **charts** based on this survey are **not yet published**. Apart from the beacon at the entrance there are **no aids to navigation** *(1991)*; local knowledge is advised. The navigable track leads north of The Fingers in the entrance to Eskimo Lakes, then generally by the most direct route to Hans Bay.

271 **Tidal currents** of 2.5 knots are to be expected at the entrance to Eskimo Lakes and in the narrow passages separating the lakes.

272 Maximum **flood** and **ebb** at the entrance occur one hour before high and low water, respectively.

273 Maximum **flood** and **ebb** occur one hour after high and low water, respectively, in the narrows at the NW end of The Fingers. The **currents** are slight SW of this narrows.

274 **Caution**. — The information on currents is based on a few days observations in 1977; variations of one hour can be expected.

275 *Eskimo Lakes (Entrance) (Index No. 6457)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

276 The large **tide range** at the entrance to Eskimo Lakes is 1 m.

277 The large **tide range** in the narrows NW of the finger-like peninsulas is 0.7 m. High and low waters lag those at the entrance to Eskimo Lakes by approximately one hour.

278 The large **tide range** at 69°24'N, 132°00'W is 0.3 m. High and low waters lag those at the entrance to Eskimo Lakes by approximately four hours.

279 West of the second narrows at 69°13'N, 132°28'W, winds and barometric pressure have more effect on water level than the tide; the **tidal range** is about 0.1 m, and in the third narrows at 68°58'N, 132°53'W, it is negligible. Meteorological conditions can cause variations in the water level as much as 0.3 m during the course of the navigation season.

280 The **route** leading north of Thumb Island into Eskimo Lakes is narrowed to about 0.2 mile by **shoal ledges** extending north from Thumb Island and SW from the Tuktoyaktuk Peninsula shore. It can be navigated, as previously mentioned, by maintaining a course of 250° with the V-shaped cut on the SW side of Campbell Island astern.

281 The route leading south of Thumb Island has been surveyed as far as the SW corner of Thumb Island; along the west coast of Thumb Island it is not surveyed but track soundings indicate relatively deep water.

282 The first large lake is entered by passing north of a small moon-shaped island *(69°33'N, 131°25'W)*. A **shoal spit**, with 2.7 m of water at its outer end, extends 0.4 mile NW from the moon-shaped island.

283 The first large lake extends 30 miles SW from the entrance described above. The submarine topography in this lake appears to consist of a series of ridges separated by troughs running approximately north/south. The ridges have 4 to 10 m over them; the deepest recorded depth in the troughs is 96 m.

284 **Anchorage** with good shelter can be found in a bay *(69°25'N, 131°38'W)* on the south shore. The entrance to the bay is narrow but relatively deep; depths inside the bay range from 2 to 3 m over a fairly even bottom.

285 Commencing about 0.5 mile NW of the north end of the moon-shaped island described above, set course 220° for 6 miles to 69°29'N, 131°37.5'W, then 240° for 6.3 miles to 69°25.9'N, 131°53.2'W, then 226° for 5.2 miles to 69°22.2'N, 132°03.8'W, then 198° for 2.3 miles to 69°20'N, 132°06'W, then 215° for 5.7 miles to 69°15.3'N, 132°15.3'W, then 223° for 4 miles to the SE entrance of the first narrows.

286 A least depth of 3.8 m will be encountered 1.5 miles along the 226° course and again at 3.4 miles along the 223° course.

287 The route from the SE entrance of the first narrows leads about 1.5 miles north along the east side of the peninsula extending north; keep to mid-channel. Next steer westward through the narrow channel between the two peninsulas, then south and west into the second lake.

288 The only difficulty in this section is at the entrance to the second lake where there are numerous sand bars and sand spits. Rounding the south end of the long peninsula, keeping about 0.1 mile off until about 0.2 mile north of its south tip, then set course NW'ward for about 0.7 mile to 69°08.7'N, 132°33.1'W to avoid a **sand spit** extending north from the southern mainland. After this spit is cleared, set course across the second lake.

289 A route along the south shore of the second lake has been surveyed. This lake has a smooth, dish-shaped bottom, with depths of 4 to 8 m along the surveyed route, quite different from the bottoms of the lakes to NE and SW.

290 From the last position, set course 238° for 7 miles to 69°05'N, 132°50'W in the NE approach of the second narrows.

291 From this position, the first 1.5 miles to the SW is encumbered by sand banks; a depth of about 3.2 m can be carried over these banks by keeping an approximate mid-channel course. A point *(69°02.5'N, 132°54'W)* protrudes from the east side of the channel; maintain a distance of about 0.1 mile off this point in a least depth of 2.4 m. There are four islands about three miles further on; pass west of the northern island and east of the other three. The southern two islands of these lie east and west of each other, and a **rock** 1 m high lies 0.3 mile SSE of the eastern island; pass east of this rock.

292 The narrows at the south end of this reach has two small islands in its northern approach; pass west of these two islands.

293 **Anchorage** in 5 to 6 m with good holding over mud bottom can be obtained in the bay SE of this narrows.

294 Steer west along the south end of the long peninsula, favouring the south side of the channel. Keep in mid-channel on the NNW course between the peninsula and the island, then haul close to the west side of the channel, passing about 100 m off the point projecting north into the lake; a least depth of 2.4 m will be encountered close north of this point. Maintain a NW course for about 0.7 mile into the lake to 68°59.2'N, 132°59.5'W before setting course across the lake toward Hans Bay.

295 A **route** approximately 3 miles wide has been surveyed across the lake from the last position to the approaches to Hans Bay. The bottom of this lake and the approach to Hans Bay are very uneven with depths between 5 and 43 m.

296 From the geographic position mentioned above, set course 215° for 6.9 miles to 68°53.6'N, 133°10.5'W, then 227° for 2.2 miles to 68°52'N, 133°14.8'W, then steer a mid-channel course for Hans Bay.

297 **Anchorage** in 3 to 4 m, sand bottom, can be obtained in the NE corner of **Hans Bay**, SW of the narrow entrance to a large, shallow lake.

298 A **radio mast**, 66 m high, is on the NW shore of Hans Bay.

299 **Fresh water** can be obtained from a small lake on the SW entrance point to Hans Bay.

300 The arm of Eskimo Lakes extending 15 miles SE from **Bonnieville Point** has not been surveyed; it has **Ration Bay** and **Portage Point** on its NE shore, and **Whale Point** and **Shelter Creek** on its SW shore.

301 A **route** once used by whaleboats leads from the SE end of the arm, via creeks, lakes, rivers and a **portage**, to East Channel of the Mackenzie River, entering it south of Inuvik.

Banks Island — West Coast

Chart 7832

302 Between Cape Kellett *(71°58'N, 126°00'W)*, the SW extremity of **Banks Island**, and Cape Prince Alfred, its NW extremity, the **coast** is low and fringed with sand bars, spits and lagoons. The sand bars and spits, and some off-lying islands afford sheltered anchorages in several places for shallow-draught vessels. Several rivers, some of considerable length, enter the sea along this coast.

303 An extensive belt of fast **ice** forms along the west coast of Banks Island during the winter reaching an average thickness by late May of 190 to 200 cm. Some multi-year ice floes *(average thickness estimated about 365 cm)* can be trapped in this fast ice.

304 The fast ice normally becomes mobile by mid July. Ice conditions during summer months depend almost entirely on the strength and direction of prevailing surface winds. A wind shift can move the polar pack into the western coastal areas of Banks Island or hold it up to 50 miles or more offshore. On the average, September is when ice can be at its greatest distance west of Cape Kellett.

305 In the northern part of the west coastal area there is almost always some ice of varying concentration. In this area ice has grounded in as much as 37 m with ice reportedly piled to heights of 20 m above sea level.

306 The time of freeze-up depends to a very great extent on the position of the polar pack ice because initial ice formation occurs first among these older floes. On the average, freeze-up begins during the second half of September in the north and spreads to Cape Kellett by early October.

307 *(For general **ice information** in the Beaufort Sea, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada and visit: http://ice-glaces.ec.gc.ca.)*

Cape Kellett to Sea Otter Island

308 **Cape Kellett** *(71°58'N, 126°00'W)* is the west extremity of a low, narrow spit of pebbles and gravel. Too low to be seen from a distance, the spit is unmistakable when viewed from nearby.

309 It is considered feasible to put a boat drawing up to about 3 m alongside the beach at this point. Little is known of the depths inside the bay formed by the spit, except in 1952, **depths** of 9 m were found close to the spit along almost all of its length, but **shoals** were also found in the bay. The bay is exposed to north winds and the spit is of insufficient height to give shelter from other directions; this bay therefore cannot be considered a good harbour.

310 The **current** is reported to usually flow south and SE around Cape Kellett, however in 1951 a strong current flowing west, south of the cape, and swinging NW, west of it, was observed.

311 **Kellett River** enters Beaufort Sea through a wide braided mouth, 8 miles NE of Cape Kellett. The river rises 70 miles ESE in the high ground toward the east side of the island.

312 An almost continuous line of narrow sand banks, about 1 mile offshore and enclosing lagoons in which shallow-draught vessels might find shelter from the ice pack, stretches from the base of Cape Kellett spit to the mouth of Kellett River.

313 **Blue Fox Harbour** *(72°07'N, 125°48'W)*, named for an Inuit schooner which once wintered here, is 1.5 miles NNW of Kellett River. The harbour is sheltered to the SW by a curving sand spit from which shoals extend 0.6 mile. A prominent knoll, 75 m high, is east of the harbour. A narrow beach on the north side of the harbour affords good landing. The flat land in the vicinity is separated from the beach by a cut bank about 4 m high.

314 **Soundings** taken from a canoe in 1952 gave a greatest depth leading into the harbour of 2.7 m. The bottom both inside and outside the harbour is flat and shoals gradually. However, farther out there is a possibility of ridges formed by ice pressure. HMS *Investigator*, in 1851, grounded on such a ridge 3 miles off the harbour, but the exact location of the grounding is not known. Between Cape Kellett and Blue Fox Harbour, depths of 9 m occur about 4 miles offshore.

315 **Worth Point**, 9 miles NNE of Blue Fox Harbour, is formed of cliffs 15 to 30 m high. A knoll 55 m high, south of the point, is prominent.

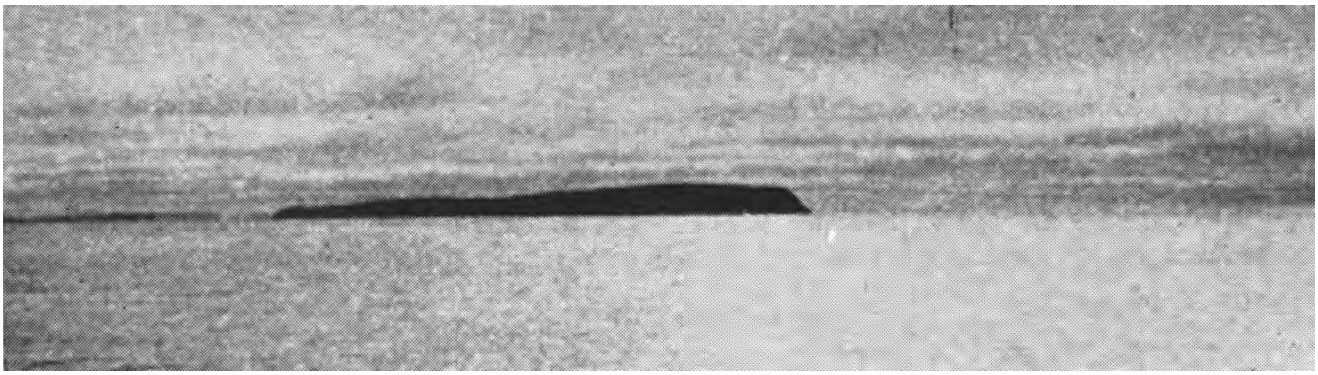
316 **Lennie Harbour** *(72°17'N, 125°32'W)* is fronted by a sand spit 2 m high extending from Worth Point to the coast 3.5 miles NNE. The entrance to the harbour is through a gap 1 mile wide in the spit.

317 The south side of the harbour east of Worth Point is composed of banks rising to elevations of 23 m; the east side is low and swampy. **Lennie River** enters the east side of the harbour through a mouth 1 mile wide composed of braided channels; a sand bar extends across the entire mouth. This harbour is used for unloading trapping supplies in the fall.

318 **Depths** over the bar in the entrance were at least 3.4 m *(1952)*; inside, the depth was about 5.8 m. The landward side of the harbour was not examined but is probably shallow with mud bottom and sand beaches in a few places.

319 There is no information on the holding ground or protection afforded.

TERROR ISLAND (Prior to 1961)



320 The coast from Lennie Harbour to the mouth of Big River, 13 miles NNE, is low, marshy, and paralleled by sand bars enclosing shallow lagoons. Near the land the water is shallow, deepening slowly but steadily to seaward.

321 **Siksik Point**, 8 miles NNE of Lennie Harbour, has an elevation of about 15 m; sand spits extend south and NNE from it.

322 **Big River**, which has its source not far from the SE coast of Banks Island, enters the sea in braided channels through a broad, flat valley. Its mouth, 2 miles wide, is a useful landmark, discernible from the offing as a gap in the coastline; a distinct ridge is on the south side of the river. Extensive drying flats extend 2 to 3 miles off its mouth.

Sea Otter Island to Liot Point

323 **Sea Otter Island** *(72°33'N, 125°10'W)* appears from seaward to be a point projecting from the mainland.

324 A spit extending east from the north end of Sea Otter Island forms a **harbour** whose entrance is obstructed by a bar extending from the end of the spit; in 1952, the bar had about 3.4 m over it. Inside, the bottom appears flat with depths of about 5 m.

325 **Sea Otter Harbour**, 2.5 miles east of **Rabbit Island**, is well sheltered and has been used by Inuit schooners. In 1952, depths in the harbour were reported to be between 1.8 and 3 m. **Sea Otter River** enters the head of the harbour through a low, marshy plain.

326 **Haswell Point** *(72°41'N, 125°06'W)*, the outer end of a string of three islands, appears from off shore to be part of a spit projecting from Banks Island.

327 **Anchorage** in depths of 4.6 to 6.2 m can be found in a bay between Haswell Point and a peninsula 1 mile east. Reasonable shelter can be found close south of the larger of two islands in the middle of the bay but nothing is known of the holding ground. It was reported *(1952)* that the entrance had a limiting depth of 1.8 m. A small island lies in the SW corner of the bay.

328 **North Star Harbour** *(72°52'N, 125°07'W)* is formed by a spit curving SSE from **Meek Point**, the west extremity of a ridge of gravelly hills. Its entrance is about 1 mile wide but nothing is known of holding ground or shelter.

329 **Terror Island**, 2 miles WSW of North Star Harbour, has an elevation of 21 m and a cliff of this height on its seaward side. A low spit extends east from the island. Depths of 4 m have been recorded in the middle of the channel separating the island from the mainland.

330 **Anchorage** can be obtained on the south side of the island between the west and north arms. In 1952, soundings of 4 m were obtained most of the way into the harbour. Nothing is known of the quality of bottom and only fair shelter is afforded. During severe storms the sea breaks over the low spit which forms its north side. Approaching from seaward, care should be taken when rounding the south point of the island as **air photographs** indicate the possibility of shallow water.

331 **Storkerson Bay** *(72°57'N, 124°41'W)* has generally low shores but hills with elevations of 120 m rise within 3 or 4 miles of the south side. Several rivers enter the bay; **Storkerson River**, the largest, enters through a mouth 1 mile wide composed of braided channels. It is probable that there is considerable silting toward the head of the bay.

332 **Anchorage** can be found in the SW corner of Storkerson Bay in the small bay close east of Meek Point with an entrance about 0.4 mile wide. It was reported *(1952)* to be suitable for small vessels; no bottom was obtained at 4 m and depths of about 6 m were estimated. The only dangerous area was believed to lie between a low spit on the NE side of Meek Point and an isolated beach on the east side of the bay.

333 **Cancolim Harbour**, on the north side of Storkerson Bay, is known to be suitable for large schooners and perhaps for larger vessels. Its entrance is 2 miles wide. In 1952, the minimum depth in the central part of the harbour was 5.8 m with greater depths in the north part and 9.1 m in the entrance.

Nothing is known of the holding ground but it is well sheltered except from south winds. Two streams enter the head of the bay, at the NW and NE corners.

334 **Wolley Point** is indefinite except for a knoll 30 m high with steep cliffs on its seaward face.

Liot Point to Cape Prince Alfred

335 **Liot Point** *(73°06'N, 124°51'W)* is formed by cliffs 18 m high.

336 Between Liot Point and Bernard Island, 30 miles NNE, the land is comparatively low with few landmarks. There are numerous lagoons and small bays formed by sand spits.

337 **Adam River**, about 6 miles NNE of Liot Point, enters the sea through a lagoon after crossing a low marshy plain about 8 miles wide. The lagoon has a depth of 4.3 m at its entrance but just outside there is a semicircular bar with 1.2 m over it.

338 An unnamed lagoon *(73°28'N, 124°17'W)* may make a good **anchorage** for small vessels. In 1952, ice prevented a complete investigation of this anchorage but 3.4 m of water was found over a bar which forms a semicircle outside the entrance. Large pieces of ice afloat in the lagoon gave indications that depths of about 2.7 m exist, particularly inside a spit on its south side.

339 **Bernard Island** *(73°36'N, 124°14'W)*, difficult to distinguish from its background, is joined to the shore to eastward by drying flats. **Cape Collins**, the north extremity of Bernard Island, is a narrow spit.

340 A spit projecting south and then east from the SW extremity of Bernard Island is thought to enclose an **anchorage** with a depth of about 3 m and to offer shelter from winds between north and east.

341 The land in the vicinity of the mouth of **Bernard River** is low and marshy but isolated hills, 4 miles NE, rise to elevations of 60 m. The river rises close to the SE coast of Banks Island.

342 **Wilkins Bay** lies between Cape Collins and an unnamed point 5 miles ENE. The inner half of the bay dries due to silting from Bernard River.

343 **Norway Island**, 4 miles NW of Cape Collins, has three hills which make good landmarks. The two westerly hills are close together; the east hill is lower and cut off from the others by a low ridge. There are numerous beaches around the island.

344 The bay on the east side of Norway Island was reported by Stefansson *(1915)* to be a good **harbour** for shallow-draught vessels; nothing is known of the depths.

345 **Robillard Island** *(73°55'N, 124°27'W)* has an elevation of 59 m and makes a good landmark.

346 **Burnett Bay** is bordered by a marshy plain with several braided streams passing through it. The north side of the bay rises to 30 m.

347 **Pennell Point** is a low rounded point, identified by an isolated knoll close SE of it.

348 The coast north of Pennell Point is generally low and featureless except for a prominent knoll 4 miles north and a short distance inland.

349 **Phillips Island** *(74°05'N, 124°33'W)* is easily distinguished, particularly from the south, by a single central hill with an elevation of 46 m. No soundings have been obtained in the channel between Phillips Island and the mainland but it is believed to be 2 to 4 m deep because grounded ice has been found here in early August. Two islands with elevations of 6 and 9 m lie 7 and 9 miles north of Phillips Island. Both islands are flat-topped and easily distinguishable from Phillips and Gore Islands.

350 **Cora Harbour**, 5 miles SE of Cape Prince Alfred, is the only harbour that has been sounded along this sector of the coast; in 1952 it had a depth of 4 m. An isolated hill, 61 m high, close north of the harbour makes a good landmark.

351 The harbour entrance is almost closed by a U-shaped island lying across it. Channels about 0.3 mile wide lead into the harbour around the extremities of the island but it is not known which has the greater depth or is the safer entrance.

352 **Cape Prince Alfred** *(74°21'N, 124°46'W)*, the NW extremity of Banks Island, is a cut-bank cliff with deep water at its foot. The cliffs gain in height toward the east along the north side of the island. An islet is close west of the cape and a depth of 14 m lies 1 mile NNE of it.

353 The largest of **Gore Islands** is 2 miles WSW of Cape Prince Alfred. The outer island, 5 miles WSW of the cape, has an elevation between 15 and 30 m.

354 **Caution**. — An islet lies 0.6 mile north, and **rocks** with 2 m or less over them lie up to 2 miles west and south of the outer island. A **shoal** with 9.8 m over it lies 8.5 miles SW of the same island.

355 HMS *Investigator*, which is believed to have passed between the two largest Gore Islands in 1851, reported **depths** of 16 to 27 m. Between the largest Gore Island and Cape Prince Alfred, the **depth** has been estimated from observing ice to be upward of 7 m.

Amundsen Gulf
South Part

General

Charts 7081, 7600, 7621, 7664, 7665, 7666, 7667, 7686, 7687

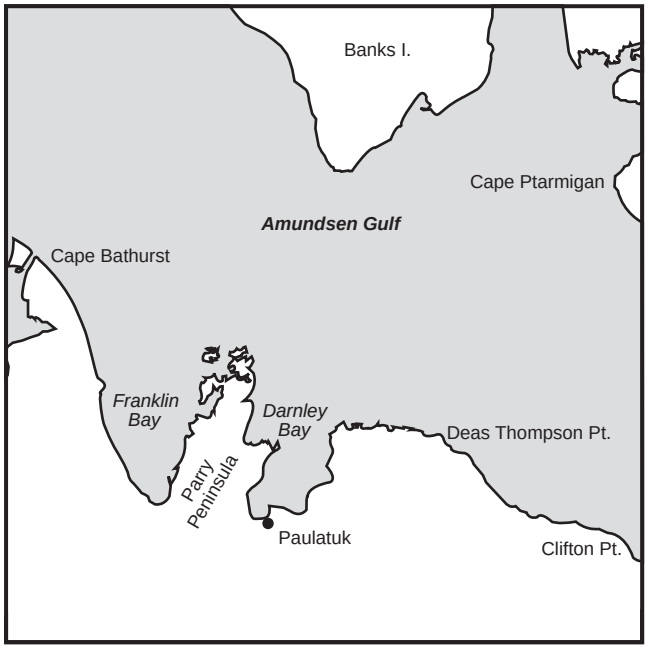
1 **Amundsen Gulf** is entered from the Beaufort Sea between Cape Bathurst *(70°34'N, 128°00'W)*, on the mainland coast, and Cape Kellett. Cape Kellett, the SW extremity of Banks Island, is 92 miles NNE. Dolphin and Union Strait, on the SE side of Amundsen Gulf, forms the west end of the long sea route between the SW islands of the Canadian Arctic Archipelago and the mainland coast. This route provides a sea approach to a number of settlements.

2 *(For general information on coastal routes through the Northwest Passage, see Chapter 5.)*

3 *Northern Canada Vessel Traffic Services (NORDREG) Zone* covers all waters described in this chapter. The primary objective of this system is to assist the master in the safe and expeditious conduct of the vessel by promulgating information on ice conditions, giving advice on routes and providing icebreaker support where available and considered necessary.

4 Traffic clearance requests and reports required by this system shall be addressed to *NORDREG CANADA*. Requests and reports may be passed through any *Canadian Coast Guard Marine Communications and Traffic Services* centre free of charge. All times shall be given in *Co-ordinated Universal Time*.

5 *(For further information concerning Vessel Traffic Services in the Arctic, consult Radio Aids to Marine Navigation, available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*



6 **Caution**. — The majority of the surveys of Amundsen Gulf were made between 1970 and 1978. Most depths in Amundsen Gulf are selected from sounding lines spaced between 0.5 and 1.5 miles apart. At the SE end, in the approach to Dolphin and Union Strait, depths are selected from sounding lines spaced 3 to 4 miles apart. At the NW end, off the coast of Banks Island between Cape Kellett and Cape Lambton, depths are from spot soundings through the ice spaced 3 to 4 miles apart. *(For details see Source Classification Diagrams shown on the charts.)*

7 The **tidal range** in Amundsen Gulf is less than 0.7 m.

8 **Caution**. — The **water level** is considerably affected by the prevailing **wind**. On the mainland coast, easterly winds can cause the water level to fall, resulting

in depths up to 0.8 m below charted soundings, while strong westerly winds will raise it as much as 1.2 m above normal and flood low-lying coastal areas.

9 *(For general **weather** conditions in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For present and forecast weather conditions, visit: http://www.weatheroffice.gc.ca/canada_e.html. For **climate** normals and averages for Cape Parry A and Clinton Point, visit: http://www.climate.weatheroffice.gc.ca/climate_normals/index_e.html. For maps relating to general weather patterns, visit: http://atlas.nrcan.gc.ca/site/index.html.)*

10 **Caution**. — Violent winds blow from the upland surface down the seaward slope of the Melville Hills into Franklin and Darnley Bays. These gale-force winds are a coastal phenomenon whose effects are concentrated near the coast in a belt 5 to 10 miles wide.

11 *(For general **ice conditions** in Amundsen Gulf, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For detailed information on present and forecast ice conditions in Northern Canada, visit: http://ice-glaces.ec.gc.ca.)*

12 **Caution**. — The **magnetic compass** is erratic throughout Amundsen Gulf. *(See Sheet No. 10 of the Geophysical Atlas Series, published by Geological Survey of Canada.)*

Franklin Bay and Approaches

Charts 7664, 7665

13 **Franklin Bay** *(69°50'N, 126°00'W)* is entered between the mouth of Horton River, on the west, and Police Point, 45 miles ENE.

14 **Smoking Hills**, on the west side of the bay, reach elevations of 250 to 300 m. Composed of bituminous alum shale the hills get their name from clouds of smoke and steam which rise, particularly in spring and early summer, from underground fires burning within them. Most of these fires occur along the coast but some have been noted in the banks of the Horton River. They are visible from seaward at night but should not be used as navigation marks as they die out in one location and break out again some distance away. **Melville Hills** extend across the south end of Franklin Bay and reach elevations in excess of 300 m.

15 **Parry Peninsula** forms the east side of Franklin Bay; its isthmus at the south end is very low, and portage is easily made across to Darnley Bay along a chain of lakes. The peninsula attains its maximum elevation of about 90 m halfway up its length and limestone cliffs are at its north end.

16 **Caution**. — **Surveys** in the approach to Franklin Bay were made between 1973 and 1977 with sounding lines spaced about 1 mile apart. Depths across the entrance to Franklin Bay extending from Booth Islands to Horton River are from spot soundings through the ice obtained in 1974 and spaced about 4 miles apart. The central and west side of the bay is based on a 1970 survey with sounding lines spaced about 0.5 mile apart. Depths in bays along the east side and at the south end are from spot soundings through the ice. *(For details see Source Classification Diagrams shown on the charts.)*

17 The **navigation season** in Franklin Bay is usually mid July to the second week of October. In an abnormal year, such as 1964, **ice** can extend deep into the bay during the navigation season; the same year, the channel between Booth Island and Alexander Point was completely blocked. On July 17, 1957 ice was still piled up on the beaches and at Police Point had risen more than 6 m up the cliff face.

18 Open water or leads can often be found along the west side of the bay during such abnormal conditions.

19 A **set** to the south of about 0.5 knot has been reported by vessels crossing the entrance of Franklin Bay. Between Police Point, Booth Island and Rabbit Island the **currents** are strong and variable.

20 The **tidal range** is small, with a maximum of about 0.5 m. However, with strong north **winds** the **water level** has been noted to rise 0.6 m above normal in the vicinity of Horton River, on the west side of the bay. *Franklin Bay (Index No. 6367)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

21 At the head of Franklin Bay, in the vicinity of Langton Bay, an average of twenty days of **fog** is experienced between mid July and mid October.

22 During a seven-month period, **winds** at Police Point were most frequently from the western and eastern quadrants. The strongest winds, in excess of 30 knots, were mainly from the east.

23 **Caution**. — In the vicinity of Langton Bay, the prevailing **wind** is from the south, often reaching 40 to 45 knots. Localized gales in this area blow steadily for weeks at a time off the plateau to the south. Gales of this type occur soon after freeze-up or as soon as there is a pronounced difference in temperature between land and sea, with the land being the colder. Such conditions occur when Franklin Bay fails to freeze over early. If, during the beginning of freeze-up in late September or early October, the winds are from the SW, south or SE, any ice that forms will drift out to sea and the surface of Franklin Bay near the land remains open water. If this condition persists into November, the temperature difference between land and water can be as much as 15 or 20°C. During this period if the winds are from north or NW, ice will

drift into the bay, which will soon be firmly ice-covered; in such a season these local gales will not occur.

24 If **ice** is present in Amundsen Gulf and Franklin Bay, **leads** or **open water** can usually be found along the west side of Franklin Bay. At such times, shipping bound from Cape Bathurst to Parry Peninsula follow close along the west shore of Franklin Bay as far as Horton River, which offers a good landmark, before altering course eastward for Booth Islands. Fixing a ship's position along the west side of Franklin Bay is difficult as there are few landmarks. The water is deep, however, and radar ranging on the steep cliffs should provide sufficient information to keep out of danger.

25 If approaching from the east and there is too much ice to the north, it is frequently possible to work down between Booth Islands and Parry Peninsula.

Chart 7664

Approaches to Franklin Bay

26 From Cape Bathurst, described in Chapter 2, to Horton River *(69°57'N, 126°50'W)*, 45 miles SSE, the coast on the west side of the approach to Franklin Bay is precipitous, giving good radar responses; the mouths of two rivers which breach the coast 5.5 and 7.5 miles SE of Cape Bathurst are easily identified by radar.

27 **Whale Bluffs**, 16 miles SE of Cape Bathurst, reach elevations of about 120 m. An abandoned cabin *(1994)* is about 2.5 miles SE of Whale Bluffs.

28 The coast south of **Traill Point** *(70°19'N, 127°19'W)* consists of cliffs of bituminous shale; in many places the shale is burning, producing sulphurous steam and smoke. Seen at night, these fires have been likened to the lights of a village. **Fitton Point**, 9 miles SE of Traill Point, is not identifiable. **Malloch Hill**, 10 miles farther SSE, has an elevation of about 130 m.

29 A *North Warning System* station is on the coast at Malloch Hill, near Horton River; it consists of three **conspicuous domes**, one on a tower and topped with an aircraft warning **light**, and a single building.

30 **Caution**. — The Horton River *NWS* station is **not manned**. There is an emergency shelter with a telephone and a motion-activated camera but no supplies or services.

31 A former **landing beach** is about 0.7 mile SSE of Malloch Hill. The average gradient out to the 5 m line is 1:32; there are no known dangers in the approaches to this beach.

32 **Anchorage** in 9 to 11 m, mud and clay bottom, can be found 0.5 mile off the beaching area. The nearest sheltered anchorage is 39 miles to the east in Summer's Harbour.

33 An abandoned airstrip called Horton River, 1.7 miles SSE of Malloch Hill, is no longer usable; three abandoned buildings, one in ruins *(2006)*, identify the site.

34 **Horton River**, the west entrance point of Franklin Bay, discharges through a narrow gorge in the cliffs; this gorge shows up prominently on radar. At the mouth of the river there is a considerable deltaic formation. A chain of sand bars forms the outer limit of the delta, but a narrow **shoal** channel leads through the SE part of the delta to the river mouth. The river itself is comparatively wide and probably navigable by shallow-draught craft for 40 to 50 miles upstream.

35 If approaching from the west, round Observation Point at 5 miles. Keep in a least depth of 30 m by maintaining a radar distance of 4 to 5 miles from the coast between Observation Point and Horton River.

36 The **conspicuous structures** on Malloch Hill make a good landmark in the vicinity of Horton River. If making for the landing beach close SE of Malloch Hill, use the buildings as a landmark and make for a position about 3 miles ENE of the beaching area before approaching the anchorage, 0.5 mile offshore.

37 **Caution**. — Remain north of the latitude of the landing beach to avoid the **sand bars** extending from the mouth of Horton River.

Chart 7665

Franklin Bay — West Side

38 From Horton River *(69°57'N, 126°50'W)*, the Smoking Hills extend to the head of Franklin Bay, where they recede a little from the coast and merge with the even-backed ridge of the Melville Hills. For about 15 miles SE from the mouth of the Horton River, the coast is precipitous and gives a good radar echo, but from there to the head of the bay it is less precipitous and, where ravined, shows blue clay.

Chart 7686

Franklin Bay — NE Side

39 **Police Point** *(70°11'N, 124°45'W)*, at the west tip of Cape Parry, forms the NE entrance point of Franklin Bay; the point rises steeply to a hill about 12 m high on its north side and falls gradually on its SE side to a low, narrow isthmus.

40 **Cape Buchan**, 1 mile south of Police Point, is the west extremity of a bold headland rising sharply from the water. **Cape Parry** *(70°12'N, 124°32'W)*, on Parry Peninsula NE of Cape Buchan, rises abruptly from the sea to 15 m then slopes gradually to 45 m about 2 miles inland. It gives a good radar response. *(See first Caution under "Darnley Bay, West Side".)*

41 The mainland SE of Police Point rises sharply to a hill with an elevation of about 90 m. The Cape Parry *North Warning System (NWS)* station is on the hill; it has a **conspicuous radome** mounted on a tower. There is an aircraft warning **light** on the top of the radome. Several buildings and two smaller domes are at the site.

CAPE PARRY BEARING 211° — 3.5 MILES (September 6, 1991)
MVs Angus Sherwood and Johnny Hope

CAPE BUCHAN BEARING 070° — 1.2 MILES (July 30, 1991)

CAPE PARRY BEARING 190° — 1.7 MILES (July 30, 1991)

CAPE PARRY BEARING 190° — 1.7 MILES (July 30, 1991)

CAPE PARRY BEARING 090° (APPROX) (September 5, 1991)

42 **Caution**. — The *North Warning System* station is **unmanned**. There is an emergency shelter with telephone and motion-activated camera, but no supplies.

43 *(For **climate** normals and averages for Cape Parry, weather station name Cape Parry A, visit: http://www.climate.weatheroffice.ec.gc.ca/climate_normals/index_e.html.)*

44 Cape Parry has an abandoned airstrip. The airstrip has been used by fixed-wing aircraft and helicopters for science personnel and crew transfers to the CCGS *Amundsen (2008)*.

45 A wooden tripod **beacon**, at an elevation of 30 m, is on **Devon Point**, 1.5 miles ENE of Police Point. The condition of this beacon is unknown *(2009)*.

46 **Cornwell Bay**, east of Devon Point, has not been sounded but has foul ground in its east part.

47 **Anchorage** can be found in **Cow Cove**, about 0.3 mile offshore, in 14 m; the holding ground is poor, consisting of a rock and sand bottom. The anchorage is well protected from east winds but west winds can soon clog the anchorage with drift ice.

48 The former **landing beach** in this area is at the north end of Cow Cove, south of Police Point. The gradient from the 5 m line to the beach is between 1:8 and 1:13. The beach faces west, is 215 m long, and concave. *Northern Transportation Company* barges have berthed bows-on or beam-to, depending upon the sea state.

49 Two beaches are east of Police Point in **Bath Bay**. These beaches provide little protection from weather or ice, and the holding ground off them is poor. The west beach is bounded to the west by a rock cliff 6 m high and to the east by a mud bank 5 m high. The beach, composed of small limestone pebbles and sand, has a gradient of about 1:13 and is 450 m long by about 20 m wide.

50 The other beach is about 0.7 mile east of the west beach; it is composed of gravel and small stones and is about 590 m long. A road, not maintained, leads to the abandoned airstrip about 0.5 mile inland.

51 The 20 m contour is about 0.5 mile off both beaches; between the 5 m contour and the beaches, the bottom has a gradient of about 1:10 and is sandy.

52 **Caution**. — Strong **onshore winds** are reported to cause a **heavy** plunging **surf** at the Cow Cove beach; with a 30 knot wind from the west, surf has been observed to wash over the isthmus which connects Police Point to the mainland.

53 **Tyne Bay**, 2.5 miles south of Police Point, offers little or no protection from weather or ice and has not been sounded. A narrow isthmus separates Tyne Bay from Gillet Bay to the east.

54 **Wise Bay** is entered 5 miles south of Police Point. A tripod **beacon tower** 6 m high, with a red daymark and a radar reflector, is on the north entrance point of the bay. A private mooring **buoy**, 0.5 mile NE of the beacon, is used by *Northern Transportation Company* for mooring barges. The condition of this buoy is unknown.

55 A large OBO ship, used for refuelling the offshore exploration fleet, was **anchored** in Wise Bay for about two years and in 1982/83 wintered here. The bottom is hard with only fair holding.

56 **Kendall Inlet**, close south of Wise Bay, almost severs the north part of Parry Peninsula from the main body. The inlet is unsurveyed but appears to be encumbered by islands and rocks. Survey ship *Richardson* anchored just inside the entrance in 7 m, rock bottom.

DEVON POINT TRIPOD BEARING 180° — 0.8 MILES (July 30, 1991)

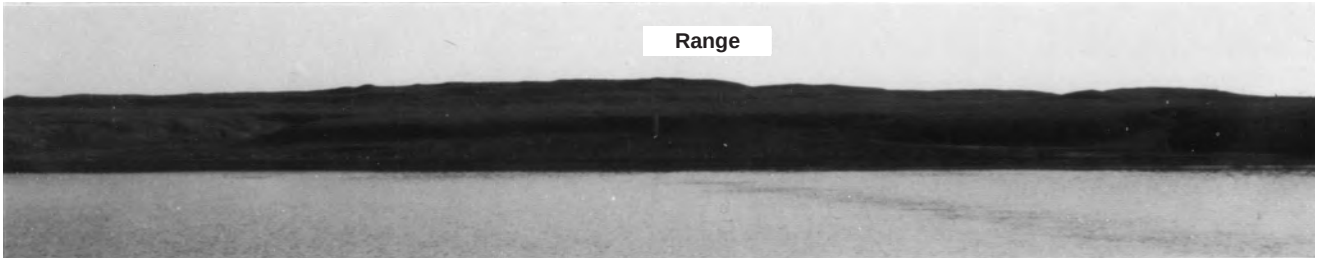
COW COVE LANDING BEACH (September 7, 1991)

WISE BAY NORTH ENTRANCE POINT BEACON (July 30, 1991)

WISE BAY (September 7, 1991)
MV Angus Sherwood & barges

WISE BAY RANGE OPEN OF BEARING 065° (1991)

WISE BAY RANGE (1991)



CCGS NAHIDIK AT WISE BAY RANGE (1991)

57 **Caution**. — **Rocks** with 2 m or less over them lie in the middle of the entrance to Kendall Inlet and in the first bay inside the entrance.

58 **Alexander Point** *(70°05'N, 125°01'W)*, the west entrance point of Balaena Bay, is steep-to and prominent from the NE. A depth of 9.9 m lies 1.4 miles ENE of the point. **Balaena Bay** is unsurveyed except for track soundings.

59 **Anchorage** can be found in the NW arm of the southern part of Balaena Bay; the holding ground is good and well protected from ice movement. Whaling ships with draughts up to 6 m once wintered here. Survey ship *Richardson* found a depth of 8.8 m *(1963)* in the entrance to the southern part of the bay and anchored in 6 m on a rocky bottom about 1 mile west of the entrance.

60 **Rabbit Island**, 1.2 miles west of Alexander Point, is dark with a maximum elevation of about 15 m and reported to be **radar conspicuous** on its west side.

WISE BAY (September 5, 1991)

61 **Caution**. — **Shoals** are reported to exist between Alexander Point and Rabbit Island, with no passage between them.

62 **Boatswain Bay**, between Alexander Point and **Diamond Rock**, which is conspicuous, provides little protection from weather or ice.

63 **Silas Bay** indents the coast to the SW.

64 **Booth Islands** *(70°09'N, 125°04'W)*, consisting of Canoe, Fiji and Booth Islands, lie about 5 miles west of Police Point.

65 **Canoe Island**, the northern and smallest island of the chain, is lower and more level than the other islands. An islet, part of a sand spit, lies close off its SW extremity.

66 **Fiji Island** has an elevation of about 46 m and a steep coast giving good radar echoes, particularly at its west end. Numerous **shoals** lie in the channel between Fiji and Booth Islands. **Jim Fiji Harbour**, in the SW part of Fiji Island, lies between two long gravel spits.

67 **Booth Island** has rolling hills 30 to 46 m high on the east and west sides, rising to about 60 m on the north side, where steep cliffs provide a good radar echo.

68 **Caution**. — A **shoal bank**, with a least depth of 5.2 m, lies 1.5 miles SW of Booth Island. In the passage between Fiji and Canoe Islands a single line of soundings indicates a **depth** of 7.6 m, 0.5 mile south of Canoe Island. A **depth** of 14.2 m lies in mid-channel east of Booth Island.

69 **Summer's Harbour** indents the south side of Booth Island and provides what Larsen described as "the best *(harbour)* in the Canadian western Arctic". Oil exploration companies wintered their vessels here between 1978 and 1991. **Shoals** lie in the entrance to the harbour but a channel 90 m wide passes to the east of the middle of the entrance. It is reported this harbour is often accessible when other harbours, such as Langton Bay, are blocked by drift ice.

70 *Summer's Harbour* **beacon range** is on the east side of the harbour. There are two towers with red daymarks and white vertical stripes; when in line bearing 010° they form a leading line with a least depth of 11.2 m through the entrance of the harbour.

71 **Anchorage** with protection from both sea and ice can be obtained in the centre of the harbour in 14 m, mud and gravel bottom. The wind blows with considerable force in this harbour, but the holding ground is good.

72 **Caution**. — A **rock** 2 m high is in the NW part of the harbour.

73 Beaches suitable for landing boats are in the NW and NE corners of the harbour.

74 **Fresh water** can be obtained from small lakes north and west of the harbour.

75 The harbour can be approached either from a position west of Rabbit Island, leaving Rabbit Island to starboard, or from between Police Point and the Booth Islands.

Chart 7665

Franklin Bay — East Side

76 Between Silas Bay *(70°01'N, 125°10'W)* and the north entrance point to Sellwood Bay, 5 miles south, the **coast** for the most part is composed of precipitous limestone cliffs 12 to 15 m high.

77 **Caution**. — **Sellwood Bay** *(69°55'N, 125°00'W)* is **unsounded** but the approaches are believed to be **shallow** and caution should be used when navigating in this area. A narrow isthmus of high limestone cliffs, at the north end of the bay, separates it from Balaena

SUMMER'S HARBOUR (September 7, 1991)
Oil rig Kulluck and MV Kalvik

SUMMER'S HARBOUR RANGE IN LINE BEARING 010° (July 29, 1991)

SUMMER'S HARBOUR RANGE IN LINE BEARING 010° (July 29, 1991)

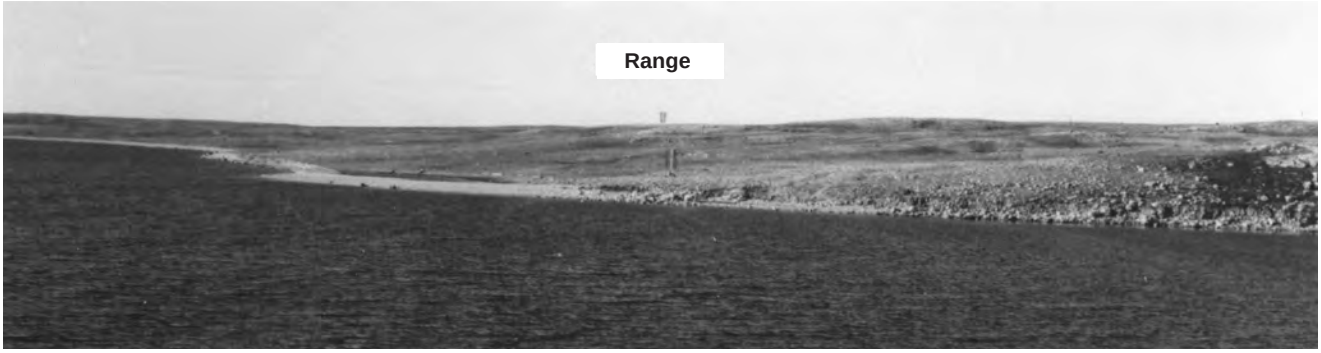
Bay. **Cracroft Bay**, in the south end of Sellwood Bay, has cliffs 6 m high on its south and west sides.

78 **Wright Bay**, to the south, is not sounded but has been reported to appear deep with **shallow areas** near the shores and sandy beaches.

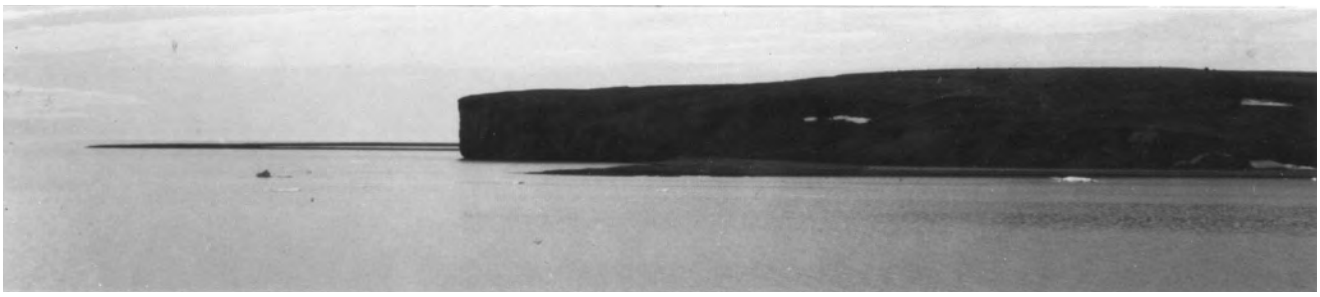
79 **Point Stivens** *(69°35'N, 125°30'W)* is a sand spit composed of limestone fragments.

80 **Tom Cod Bay** is filled with low alluvial islands and has low shores, strewn with willows and driftwood, fronted by **shallow water**. The Inuit report large quantities of tom cod can be caught in this bay at any time of the year. **Foothills**

SUMMER'S HARBOUR RANGE (July 29, 1991)



WEST ENTRANCE POINT FROM INSIDE SUMMER'S HARBOUR (July 29, 1991)



SUMMER'S HARBOUR (July 29, 1991)
MVs Terry Fox, Kalvik, Miscaroo, and oil rig Kulluck at anchor

Creek enters the NE part of the bay. A narrow detached sand bar with islets on it lies off the south entrance point of Tom Cod Bay.

81 The entrance to **Langton Bay**, in the SE corner of Franklin Bay, is almost blocked by sand spits. An old house with a graveyard beside it stands on the sand spit which forms the south entrance point and serves to identify it *(1994)*. The bay is unsounded but reported to have depths of 5.5 to 11 m.

82 **Anchorage** has been obtained close inside the sand spit forming the south entrance point, where depths of 3.7 to 9.1 m have been reported. Whaling ships frequently wintered here as did *St. Roch* in 1928/29.

83 **Caution**. — If making for the anchorage in Langton Bay, keep close to the sand spit on the south side when rounding it because of **shallow water** inside the entrance. Rounding the spit in this way, vessels with draughts of 5 m have passed as close as 20 m to the beach in safety. However, caution is necessary as **bottom contours** are **liable to change** from year to year as a result of ice action.

Darnley Bay and Approaches

84 **Darnley Bay** *(69°45'N, 123°40'W)*, separated from Franklin Bay by Parry Peninsula, has Paulatuk hamlet at its south end.

85 The north part of the east **coast** of Parry Peninsula is a succession of limestone cliffs presenting many caverns,

perforated rocks and pillars; its south part is low. The south coast of Darnley Bay is low with mud flats extending some distance from shore, particularly in the vicinity of Paulatuk and the mouth of Hornaday River. The east coast consists of gently rolling, grass-covered slopes fronted by offshore mud flats in the vicinity of Brock River and Brock Lagoon. Inland, the south and east sides of Darnley Bay rise rapidly to the Melville Hills, which roughly parallel the coast, rising in the south to elevations of 300 m and in the east to 400 m. In the vicinity of Brock River, there are five distinct terraces in these hills.

86 It has been reported there is a **constant set** into Darnley Bay even in calm weather. A strong **current** is reported off Cape Parry, it keeps the ice in motion so there is considerable open water in the vicinity throughout the winter.

87 The **tidal range** is small with a maximum of about 0.7 m. Near Paulatuk, at the south end of Darnley Bay, the **water level** is raised by strong westerly winds and lowered by strong easterly winds. The approach of strong westerly winds can sometimes be detected at Paulatuk many hours beforehand by an abnormal rise in the water level.

88 In the vicinity of Paulatuk, **fog** is likely to occur between June and August with July the foggiest month. At Letty Harbour and Argo Bay, on the west side, and also at Paulatuk, there is an average of twenty days with fog during the navigation season.

89 On the west side of Darnley Bay, in the vicinity of Letty Harbour, the **prevailing winds** are NW and east. Near the south end, in the vicinity of Argo Bay, the prevailing wind is southerly and often reaches 35 to 45 knots.

90 In the vicinity of Paulatuk, the strongest **winds** in winter are usually westerly; in summer they are from both east and west. Gale force winds are a regular feature of the early winter months. In general, NW winds bring snow and low temperatures in winter and rain in summer; east winds tend to bring fair weather.

91 The mean annual **precipitation** in Paulatuk has been estimated at 25.4 cm. Snow may fall in each month of the year except July. Thunderstorms, though rare, occasionally occur.

92 **Temperatures** for Paulatuk are similar to those at Kugluktuk. *(For **climate** normals and averages for Kugluktuk, visit: http://www.climate.weatheroffice.ec.gc.ca/climate_normals/index_e.html.)*

93 **Caution**. — **Surveys** in the approach to Darnley Bay were obtained in 1973 with sounding lines spaced about 0.3 mile apart. Depths in the major portion of Darnley Bay were obtained in 1974 by spot soundings through the ice spaced about 4 miles apart; they are also based on a few track soundings. Depths in the approach to Paulatuk are based on a reconnaissance survey in 1969. *(For details see the Source Classification Diagram shown on the charts.)*

94 Present indications are that there is deep water throughout most of Darnley Bay, except off Clapperton Island, on the west side of the bay, where **shoal water** extends a considerable distance offshore. **Shoal mud flats** extend into the bay along the south and east shores in the vicinities of Paulatuk, Hornaday River, Brock River and Brock Lagoon.

95 **Caution**. — The west side of the bay offers most landmarks as well as good radar returns from the limestone formations in the north half. However, **shoals** and **sand bars** exist between the islands and the mainland on the west side and no attempt should be made to pass inside them.

Chart 7686

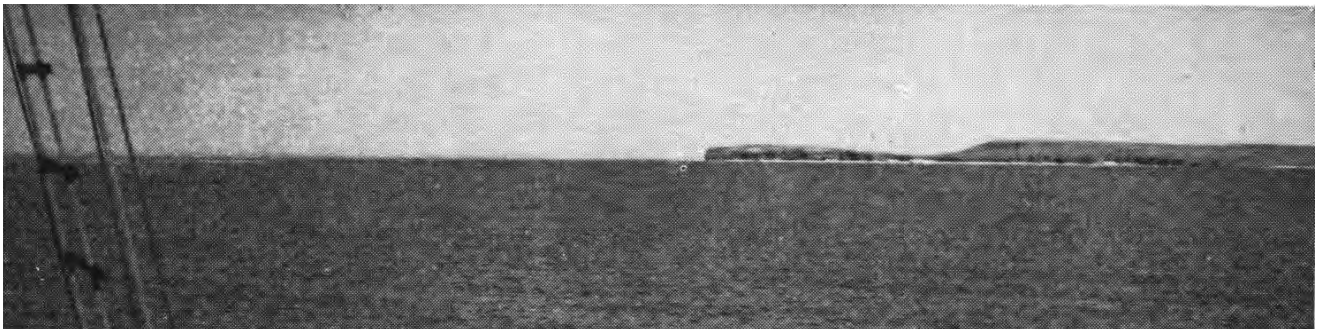
Darnley Bay — West Side

96 Cape Parry *(previously mentioned)* is the NW entrance point to Darnley Bay.

97 **Caution**. — **Soundings** in the vicinity of Cape Parry are **incomplete**; **shoals** and **rocks awash** have been reported off the cape and **foul ground** lies close east of it.

98 **Sardlat Island**, 3 miles ESE of Cape Parry, is flat-topped, sheer on all sides and **radar conspicuous**. In heavy

CAPE PARRY BEARING 105° — 1.5 MILES (Prior to 1961)



CAPE PARRY BEARING 270° — 0.6 MILE (September 6, 1991)

SARDLAT ISLAND BEARING 265° — 0.2 MILE (September 8, 1991)

GILLET BAY FROM NORTH OF SARDLAT ISLAND (September 7, 1991)

weather the sea breaks between Sardlat Island and two islets close north.

99 **Ooligbuck Point**, 1 mile SSE of Cape Parry, and the coast for 0.3 mile south of it give a good radar echo. **Uyarukaluk Rock**, separated from Ooligbuck Point by a **shoal area** with a least known depth of 5.2 m, is **radar conspicuous**.

100 **Gillet Bay**, entered between Ooligbuck Point and **Cape Banksland** 3.5 miles SE, is separated by a narrow isthmus from Tyne Bay to the west. A bar which crosses the bay 0.8 mile west of Fort Hearne Point has a **shoal** with 0.6 m over it. **Fort Hearne Point** is 3 miles west of Cape Banksland. **Okak Island**, about 15 m high, lies on the north side of the entrance.

101 **Caution**. — **Minim Reef**, in the east approach to Gillet Bay, is a small, low islet near the north end of an extensive **shoal area**, of undetermined limits, lying generally south of a line joining Fort Hearne Point, Minim Reef, and a position 1 mile or more NE of Cape Banksland.

102 **Cape Parry** settlement, abandoned, is on a small point of land at the head of Gillet Bay. Two huts, formerly a *Hudson's Bay Company* post and a Roman Catholic Mission, are the only remaining buildings *(1989)*. The population has moved to Paulatuk, at the head of Darnley Bay.

103 **Anchorage** can be obtained about 0.1 mile south of the abandoned buildings in 7.3 m, clay bottom. This anchorage has ample swinging room and affords good shelter.

104 With Sardlat Island astern, bearing 061°, a course of 241° leads clear of the above-mentioned shoals in a least depth of 4.6 m. When the ruins of the abandoned trading post bear 279°, alter course to 274°, which will lead to the anchorage in a least depth of 5.5 m.

105 **Anchorage** has also been obtained in 11 to 15 m in the bight 2 miles NE, but the bottom is rocky and affords poor holding.

106 *Cape Parry (Index No. 6360)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

107 **Fresh water** is obtainable from a lake near the abandoned trading post.

108 The average thickness attained by winter shore fast **ice** off Cape Parry is 183 cm with a record maximum thickness of 227 cm measured in 1983. Break-up normally begins during the first week of June with the bay clear of ice early in the fourth week of July. Ice begins to form usually during the second week of October with a complete ice cover by the end of the month. Two to five weeks variation in break-up and freeze-up can occur.

Chart 7665

109 **Moore Islands** *(70°08'N, 124°18'W)*, 2 miles ESE of Cape Banksland, have steep cliffs at their north ends similar in appearance to those at Cape Parry. A **shoal** that breaks, position approximate, lies 0.5 mile SW of the south island.

110 **Browns Harbour**, on the mainland 1 mile south of Cape Banksland, is a minor indentation of the coast. **Boldon Bay**, to the south, is reported to be **shoal**.

111 **Kamakark Island**, 2.5 miles south of Boldon Bay, is attached to the mainland by a narrow sand spit.

112 **Racing Island** and **Burrow Islands**, which are of limestone formation, lie about 10 miles south of Kamakark Island. A **beacon**, with a diamond-shaped daymark on a post set in a barrel, is on the north Burrow Island. The condition of this beacon is unknown *(2009)*.

112.1 **Caution**. — In the west approach to the **Burrow Islands** is a dangerous rock awash that was reported in (2024).

113 **Letty Harbour**, 3 miles south of Racing Island, has an entrance 0.7 mile wide and penetrates the coast for 1 mile in a SW direction before dividing at a high cliff into two narrow arms. One arm extends 0.7 mile west, the other arm 1.2 miles south. The west arm of the harbour is connected by a freshwater creek to a lake about 0.5 mile inland.

114 **Abandoned** trading post **buildings** are on the north bank at the entrance to the west arm *(1994)*.

115 **Anchorage** with shelter from all winds is reported to be good off the abandoned trading post in 3.7 m. Depths of 7.3 to 9.1 m lie in the approaches south of Racing Island.

116 **Ice** forms in the harbour about October 15 and break-up occurs between July 1 and 15. Normally no drift ice enters the harbour from the last week of July until freeze-up.

117 **Clapperton Island** *(69°42'N, 123°57'W)*, joined to **Bennett Point** by a sand bank, is composed mainly of gravel and surrounded by sand banks except on its NW side. A small islet lies close north of its north extremity.

118 A **beacon tower** 6 m high, with a red daymark and a radar reflector, is on Clapperton Island. The tower has an elevation of 13 m.

119 **Caution**. — **Shoal water** exists a considerable distance off the east and north sides of Clapperton Island. **Depths** of 5.2, 6.7 and 6.1 m lie 4 miles north and 2 miles NE and SE, respectively, of the island.

Chart 7687

Approaches to Paulatuk

120 **Argo Bay** *(69°23'N, 124°28'W)*, which indents the SW corner of Darnley Bay, is entered through a narrow channel south of **Greens Island**. It has a sand bottom affording reasonable holding and reported depths of 3 to 5 m.

121 **Ice** formation in Argo Bay usually occurs in mid October and break-up in early July. In normal years no drift ice enters the bay from the last week of July to freeze-up.

122 The harbour at Paulatuk *(69°21'N, 124°04'W)* is bounded on its west side by a sandy peninsula, 3 to 6 m high, ending in a spit. Paulatuk hamlet is at the south end of the peninsula. The harbour is bounded to the north by a spit extending east to the mouth of Hornaday River. This spit has very **shallow water** on its north side but depths increase steeply on its NW and west sides.

123 *Paulatuk Spit South Daymark* is a tripod **beacon tower** 9 m high, with red daymarks facing north and NW and a radar reflector, 1.5 miles north of the hamlet at the junction of the sandy peninsula and spit. *Paulatuk Spit North Daymark* is a square skeleton **beacon tower** 6 m high with red daymarks, 0.6 mile NNE of *Paulatuk Spit South Daymark*, at the end of the spit.

124 *Paulatuk (Index No. 6350)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

125 **Tidal currents** in the harbour are reported to be weak.

126 **Ice formation** usually occurs in mid October and break-up between July 1 and 15. The shoals and sand bars at the entrance of the harbour prevent the heaviest drift ice from entering, consequently the harbour is completely ice-free during the navigation season and usually clear of floating ice a considerable time before the ice leaves Darnley Bay.

127 The harbour at Paulatuk is a **water aerodrome**.

128 **Anchorage** is obtainable about 2 miles NW of the hamlet with good holding ground in firm sand and pebbles.

129 **Caution**. — The **bottom** in the harbour at Paulatuk and approaches is **uneven** and persistent strong **winds** affect the **water level**. *(See section on tides in Darnley Bay.)* The **channel** to the hamlet is **shallow**, with sharp turns, **buoyed** each year and used by *Northern Transportation Company* barges drawing about 0.9 m.

130 **Paulatuk** hamlet, population 294 *(2006)*, is at the south end of a sand spit on the west side of the harbour, on a flat area with an elevation of 4 m fronted by a sand beach.

131 The **landing beach** for off-loading barges, on the west side of the harbour north of the airstrip, can be identified by oil storage **tanks** nearby and has deadman anchors.

132 Paulatuk is connected by satellite **telecommunications**, including internet access, to other northern communities and to population centres to the south.

133 The community is supplied by *Northern Transportation Limited* barge in the summer, and has a gravel airstrip 1219 m long by 30 m wide with scheduled service by *Aklak Air* 3 days a week.

134 An aeronautical rotating **light** is shown from the airstrip.

135 An **aeromarine radiobeacon** transmits on 276 kHz with identification *Morse* "YPC" (— • — — • — — • — • — •).

136 There is a post office; a 2-man detachment of *Royal Canadian Mounted Police (RCMP)* provides police and customs services *(see "Regulations" in Chapter 1 of ARC 400 and visit: http://www.cbsa-asfc.gc.ca)*. *Paulatuk Health Centre*, with 2 nurses, offers health and community services

SHORELINE 2 MILES SW OF PAULATUK (1991)

PAULATUK RADIOBEACON BEARING 115° — 1 MILE (1991)

PAULATUK RADIOBEACON BEARING 160° — 1.3 MILES (1991)

PAULATUK RADIOBEACON BEARING 160° — 1.3 MILES (1991)

PAULATUK AIRSTRIP FROM LANDING BEACH (1991)

and is supported by visiting health care professionals. An air ambulance service is available for more serious cases.

137 A *Northern Store* offers general merchandise and groceries. The *Paulatuk Hotel* offers accommodation.

138 **Fresh water** is obtainable from the lake SW of the hamlet.

139 **Kraut Channel** *(69°24'N, 123°59'W)* is a drying channel 3 miles NNE of the hamlet.

140 **Hornaday River** enters Darnley Bay 6 miles east of Paulatuk through numerous channels of a large delta. Rising about 100 miles inland, the river is fed by numerous tributaries along its course. Coal is obtainable along two different tributaries of the Hornaday River, and often found on beaches nearby.

141 **Caution**. — **No surveys** have been conducted in the vicinity of the delta but it can be anticipated a river of this volume will cause **extensive shoaling** to seaward.

Chart 7665

Darnley Bay — East Side

142 **Cape Lyon** *(69°50'N, 122°57'W)*, the east entrance point to Darnley Bay, has an elevation of 15 m and drops steeply to the water. Consisting of blue-grey slaty rock, it projects sharply NE from the coast, gives a good radar echo and is reported to have a spectacular shape. A rocky islet close NE of the cape is prominent.

CAPE LYON BEARING 180° — 2.2 MILES (1991)

CAPE LYON BEARING 230° — 3.2 MILES (1991)

143 In the vicinity of Cape Lyon the land is formed of gently rolling low grassy hills intersected by several narrow ridges of bare dark rock rising about 45 m above the general level of the land. These ridges form high cliffs on reaching the coast.

144 A small inlet, 3.5 miles SW of Cape Lyon, penetrates the coast and forms the seaward end of a river draining a chain of lakes 7 miles inland.

145 **Halcro Point**, 5 miles SW of Cape Lyon, is **radar conspicuous**, as is the coast between it and the cape.

146 **Anchorage** can be obtained in the bay south of Halcro Point, about 0.3 mile from the head, in 15 m, rock bottom and only fair holding ground. There is good shelter from east winds but if the wind blows onshore it is advisable to leave.

147 Between Halcro Point and **Lasard Creek**, 13 miles south, the coast makes an excellent radar target. The few spot soundings available, obtained through the ice in 1974, show depths of 12 to 27 m about 1 mile from shore.

148 **Brock River** *(69°29'N, 123°23'W)* enters the SE corner of Darnley Bay through a fan-shaped delta thickly covered with willows. The river is unnavigable.

149 The east side of the delta is backed by west-facing cliffs about 30 m high; on its west side the delta terminates at the coast in banks of mud, gravel and sand about 15 m high. Inland, five distinct terraces have been cut into the Melville Hills. **Brock Lagoon**, enclosed by a narrow sand spit, is unsuitable for vessels drawing more than 1.2 m. A schooner wintered here in 1915 and had great difficulty reaching the north end of the lagoon because of **shallow water**.

Darnley Bay to Dolphin and Union Strait

Charts 7666, 7667

150 Between Cape Lyon *(69°50'N, 122°57'W)* and Clifton Point, 100 miles ESE at the entrance to Dolphin and Union Strait, the **coast** consists of cliffs with elevations of 15 to 60 m separated by gravel beaches. The cliffs are the east ends of a series of ridges, with north facing escarpments and gentle south slopes, extending about 10 miles inland to Melville Hills. Where the coast is low, the land rises gradually in steps to the rolling plateau of the interior. Isolated hills occasionally rise above the drift-covered surface.

151 The points and bays, where they occur, are rounded and offer little or no protection. The only shelter along this length of coast is in Pearce Point Harbour, 5 miles east of Cape Lyon. The river mouths, which might be expected to offer harbours, do not do so. At their mouths, they spread out over deltas making entrance to them impossible. In the high water season, it is quite possible there will be lagoons at the mouths of some rivers which shallow-draught vessels might enter; as the high water subsides, however, the sea piles up bars of sand and gravel and the entrances are closed.

Chart 7666

Cape Lyon to Pearce Point

152 Between Cape Lyon *(69°50'N, 122°57'W)* and Pearce Point, 4 miles east, a bight, which appears to be quite **shoal**, indents the coast; a river entering its middle part has caused extensive silting in this indentation.

PEARCE POINT BEARING 170° — 2 MILES (1991)

SADDLEBACK POINT BEARING 195° — 3 MILES (1991)

SADDLEBACK POINT (1991)

PEARCE POINT HARBOUR (1991)

153 **Caution**. — A group of **three islets**, 3 miles NE of Cape Lyon on the north end of a **shoal**, fronts the above-mentioned bight. The largest is 9 m high and gives a good radar echo, as does **Ship Island**, which is 2 miles east with an elevation of 5 m.

154 **Pearce Point** *(69°49'N, 122°45'W)* rises perpendicularly from the water to an elevation of 37 m, and then more gradually to 75 m about 1 mile inland.

155 The coast in the vicinity of Pearce Point is formed of rocky, flesh-coloured limestone beds, which crop out in successive cliffs like stairs and attain elevations between 60 and 90 m a short distance inland.

Pearce Point Harbour

156 **Pearce Point Harbour** *(69°49'N, 122°41'W)*, entered between **Saddleback Point** and **Breakwater Spit**, is the only sheltered anchorage on the mainland between Cape Lyon and Bernard Harbour, 190 miles ESE. An abandoned airstrip is on the south side of the harbour.

LANDING BEACH, WEST SIDE OF PEARCE POINT HARBOUR (1991)

HUB ISLET (1991)

POLICE FLAT (1991)

157 **Cairns** are on the north extremity of Breakwater Spit and on the north side of Saddleback Point at an elevation of 18 m.

158 **Hub Islet**, near the middle of the harbour, rises sharply to a height of 12 m, has green vegetation on top and a large cave at the water-line. A rock ledge extends SSW from Hub Islet to **Police Flat**, preventing passage between the two. A cabin is on Police Flat *(1994)*.

159 The large **tide range** in Pearce Point Harbour is 0.5 m; **currents** are negligible. *Pearce Point (Index No. 6340)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

160 **Ice** congestion sometimes impedes the harbour during the early part of the season. In one bad ice year *(1959)*, however, seven medium-sized vessels anchored here to await more favourable ice conditions to the east.

161 **Anchorage** can be obtained 0.2 mile NNE of Hub Islet in 10 m, sand and mud bottom, with good holding. Good holding can be found elsewhere in the harbour in depths of 8 to 11 m, sand and mud bottom. The harbour provides good shelter from all but north winds, when heavy seas can enter.

162 Offshore anchorage is obtainable north of the harbour in 15 to 18 m.

ROAD WEST OF POLICE FLAT (1991)

163 A former **landing beach**, on the west side of the harbour west of Hub Islet, is composed of sand and gravel, about 18 m wide and has a gradient of 1:7. The gradient from the beach to the 5 m line is about 1:8; the bottom is mud and sand. Ice action can alter the depths and nature of the bottom from year to year. At the south end of the beach there is a road, no longer maintained, leading to the abandoned airstrip.

164 Approach from the north and make for a position 1 mile east of Ship Island, then steer a course of 187° with Hub Islet ahead. This course will lead to the anchorage area in a least depth of about 9 m.

165 **Caution**. — The course to the anchorage leads between two **shoals**; a 7 m shoal about 0.2 mile north of Breakwater Spit, and a 9.1 m shoal 0.5 mile NNE of Saddleback Point.

166 During NW winds heavy seas can be encountered, especially outside the harbour.

Pearce Point Harbour to Clifton Point

167 A tripod **beacon tower** with a flagpole, 8 m high, is on the high ground behind **M'Leay Point** *(69°50'N, 122°38'W)*. The condition of this beacon is unknown *(2009)*.

168 **House Point**, 6 miles east of M'Leay Point, and two steep, flat-topped islets lying close off it are **radar conspicuous**, as are the entrance points of **Albert Bay**, 3 miles ESE.

169 **Keats Point**, 3 miles farther east, is composed of flesh-coloured limestone and appears as an island from seaward because it is higher than the land immediately to the south. It has an elevation of 9 m, gives a good radar echo, and is joined to the mainland by two narrow sand spits. **Shelter** for small craft can be found inside its east end.

170 A double-topped hill, 10 miles inland from Keats Point, rises 60 to 90 m above the general level of the Melville Hills.

171 Between Keats and Deas Thompson Points the **coast** has limestone cliffs 9 to 15 m high.

172 **Deas Thompson Point**, 10 miles ESE of Keats Point, can be identified by a high, rounded bluff which backs it; the point is particularly prominent when seen from the east. A point projecting from a cove 1 mile west of Deas Thompson Point is perforated and has the appearance of a natural bridge.

173 Keats Point *North Warning System* is 6.5 miles inland midway between Keats Point and Deas Thompson Point.

174 The coast between Deas Thompson Point and Clinton Point, 24 miles SE, consists of gravel beaches backed by limestone cliffs of varying heights; it is almost without indentation, broken only by the mouths of several rivers. Along the coast, especially in the vicinity of Roscoe River, hills are visible 4 or 5 miles inland rising to not more than 150 or 180 m.

175 **Palgrave River**, 8 miles SE of Deas Thompson Point, rises in the vicinity of **Mount Hooker** *(69°35'N, 121°27'W)*, a table-topped hill with an elevation of about 450 m.

176 **Roscoe River** enters the sea through a delta about 4 miles ESE of Palgrave River; although the largest river in this sector of the coast, it is unnavigable.

177 **Tysoe Point** *(69°36'N, 120°46'W)* is identifiable by a permanent bank of snow lying 0.7 mile behind the point.

178 The large **tide range** in the Tysoe Point area is 0.7 m. *Tysoe Point (Index No. 6338)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

179 A **current** between 1.5 and 4 knots has been reported to run parallel to shore.

180 **Anchorage**, exposed to wind and ice, can be obtained 0.4 mile from the beach in a depth of 13 m.

181 A former **landing beach** SE of Tysoe Point, flanked by two dry stream beds, is 275 m long; it is composed of gravel backed by sand and has a gradient of 1:30 between the shore and the 5 m line. Heavy surf is frequently experienced on the beach. A road, no longer maintained, connects the beach to a flat area 1 mile inland. Due to the scouring action of ice, the bottom composition and contours can vary from year to year.

182 There are no known obstructions in the approaches to the beach.

183 **Outwash River** enters Amundsen Gulf 3.5 miles SE of Tysoe Point.

184 **Clinton Point** *(69°30'N, 120°32'W)* is not a point in the true sense, but rather a place on the coast where the ground rises above the general level of the surrounding land. The point is the termination of a ridge 15 to 30 m high that parallels the coast for several miles to the NW; it is fairly steep on its seaward side and gives a good radar echo. A white building with a green roof is on top of the ridge some distance NW of Clinton Point *(1994)*.

185 **Buchanan River** enters Amundsen Gulf 13 miles SE of Clinton Point through its delta, which extends along 2.5 miles of the coast. There appears to be deep water off this delta, and off a similar delta 3 miles NW, as heavy drift ice has been observed close inshore. The river reaches the coast through steep cliffs which show up distinctly on radar. An isolated conical peak is about 1 mile inland, 2 miles ESE of the delta.

186 **Tinney Point**, 19 miles ESE of Clinton Point, has rugged limestone cliffs quite different from any others in this area; they extend 1 mile along the coast and are about 12 m high. About 5 miles inland, Melville Hills rise to elevations of 300 to 400 m.

187 **Croker River**, which enters the gulf through an extensive delta 9 miles ESE of Tinney Point, emerges from a box canyon 4.5 miles inland. The break in the hills made by the canyon shows up well on radar as does the delta itself. None of the delta channels are very definite although most of the water appears to come out of the eastern side. The seaward face of the delta is a steep-faced ridge of gravel cut by the various channels.

Chart 7667

188 The Croker River *North Warning System* station is 2 miles inland, SE of the Croker River Delta. A **radome**, with an aircraft warning **light** on top, on a **tower** at the site is **conspicuous**.

189 **Caution**. — The Croker River site is **not manned**. There is an emergency shelter with a telephone and a motion-activated camera but no supplies or services.

190 A red building *(69°17'36"N, 119°10'36"W)* is on the beach near the Croker River *NWS* station *(1994)*.

191 **Mount Davy** *(68°59'N, 119°08'W)*, which rises 18 miles inland to about 500 m, is shaped like an inverted cup and conspicuous from seaward.

192 East of the Croker River delta, the coast is low, without indentations.

193 **Clifton Point** *(69°13'N, 118°38'W)*, which marks the SW entrance to Dolphin and Union Strait, is formed of grassy tundra, rising gently to about 30 m, and dotted with numerous shallow ponds.

194 An abandoned airstrip, 1 mile SSE of Clifton Point, parallels the beach a short distance inland.

195 **Currents** between 1.5 and 4 knots have been reported to parallel the shore.

196 A former **landing beach** 275 m long and 45 m wide is NNE of the abandoned airstrip. It has a gradient of 1:12 and is composed of coarse gravel. The 5 m depth contour is approximately 0.4 mile offshore; the bottom composition in this area is smooth cobble. An exit to a prepared road is about the centre of the beaching area. These works are no longer maintained.

197 **Anchorage** can be obtained 0.7 mile off the landing beach in 11 to 15 m over a mud and sand bottom.

198 There is a small schooner on the beach about 1 mile SE of the landing beach *(1994)*.

Amundsen Gulf
North Part

General

Charts 7521, 7600, 7621, 7668, 7669

1 This chapter covers the north portion of Amundsen Gulf, including Minto Inlet and Prince Albert Sound. Prince of Wales Strait, on the NE side of Amundsen Gulf, separates Banks Island from Victoria Island and leads to Parry Channel.

2 *(For general information on coastal routes through the Northwest Passage, see Chapter 5.)*

3 *Northern Canada Vessel Traffic Services (NORDREG) Zone* covers all waters described in this chapter. The primary objective of this system is to assist the master in the safe and expeditious conduct of the vessel by promulgating information on ice conditions, giving advice on routes and providing icebreaker support where available and considered necessary.

4 Traffic clearance requests and reports required by this system shall be addressed to *NORDREG CANADA*. Requests and reports may be passed through any *Canadian Coast Guard Marine Communications and Traffic Services* centre free of charge. All times shall be given in *Co-ordinated Universal Time*.

5 *(For further information concerning Vessel Traffic Services in the Arctic, consult Radio Aids to Marine Navigation, available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*

6 **Caution**. — The majority of the surveys of Amundsen Gulf were made between 1970 and 1978. Most depths in Amundsen Gulf are selected from sounding lines spaced between 0.5 and 1.5 miles apart. At the SE end, in the approach to Dolphin and Union Strait, depths are selected from sounding lines spaced 3 to 4 miles apart. At the NW end, off the coast of Banks Island between Cape Kellett and Cape Lambton, depths are from spot soundings through the ice spaced 3 to 4 miles apart. *(For details see Source Classification Diagrams shown on the charts.)*

7 The **tidal range** in Amundsen Gulf is less than 0.7 m.

8 **Caution**. — The **water level** is considerably affected by the prevailing **wind**.

9 *(For general **weather** conditions in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For present and forecast weather conditions, visit: http://www.weatheroffice.gc.ca/canada_e.html. For **climate** normals and averages for*

selected locations in this area, visit: http://www.climate.weatheroffice.gc.ca. For maps relating to general weather patterns, visit: http://atlas.nrcan.gc.ca/site/index.html.)

10 *(For general **ice conditions** in Amundsen Gulf, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For detailed information on present and forecast ice conditions in Northern Canada, visit: http://ice-glaces.ec.gc.ca.)*

11 **Caution**. — The **magnetic compass** is erratic throughout Amundsen Gulf, with local magnetic disturbances reported in the vicinities of Cape Lambton and Nelson Head. *(See Sheet No. 10 of the Geophysical Atlas Series, published by Geological Survey of Canada.)*

Banks Island — SW Coast

Chart 7621

12 The north shore of Amundsen Gulf between Cape Kellett and Cape Lambton, the SW and south extremities of Banks Island, is formed by **Thesiger Bay** *(71°37'N, 124°30'W)*.

13 Along the SW coast of Banks Island between Cape Kellett and Cape Lambton, **sea ice** normally melts completely by the end of July and new ice forms during the second week of October. In general, the main ice edge is never far to the west of Cape Kellett but in September its distance from shore can be greatest. In addition, some of the smaller multi-year ice floes of Viscount Melville Sound can intrude into and through Prince of Wales Strait and have been known to drift around Cape Lambton.

14 Between Cape Kellett *(described in Chapter 2)* and the mouth of Sachs River, the **coast** consists of low cliffs backed inland by a ridge with elevations of about 60 m. At **Duck Hawk Bluffs**, prominent cliffs rise to 27 m.

15 **Anchorage** with shelter from strong north winds can be found 0.5 mile offshore about 6 miles west of Sachs Harbour. During such winds vessels will find more suitable shelter in this locality than that offered by Sachs Harbour, however, avoid anchoring opposite any of the small gullies or ravines in the cliffs, as the wind blows down them with considerable force. Although this coast has not been thoroughly surveyed, the 10 m depth contour appears to be about 0.5 mile offshore.

16 *(Sachs Harbour and approaches are described in the next section of this chapter.)*

17 Near the mouth of Sachs River, the cliffs have elevations of no more than 6 to 10 m and the ground inland on the north side of the river has an elevation of about 100 m. From the mouth of Sachs River to **Cape Currie**, 19 miles SE, a low coastal plain filled with numerous ponds, between the river and the coast, is backed by hills on the north side of the river which rise to about 200 m.

18 Between Cape Currie and the mouth of the Masik River, 20 miles SE, the coast gets progressively higher; there are moderately high cliffs north of Masik River, and about 5 miles inland the hills reach elevations of 300 m.

19 **Masik River** makes a distinctive landmark where it reaches the coast through a gap 2 miles wide. A bar, over which a canoe can pass in calm weather, lies across the river mouth.

20 **Atitok River** enters Amundsen Gulf about 2 miles SE of Masik River. **Rufus River**, 6 miles farther SSE, has a small delta.

21 Between Rufus River and Cape Queenston, 12 miles SSE, the coast gets progressively steeper and the hills inland progressively higher.

22 **Cape Queenston** has an elevation of 150 m but the land rises rapidly about 1 mile inland to more than 450 m.

23 Between Cape Queenston and Cape Lambton, 10 miles SSE, the coast consists of precipitous, **radar-conspicuous cliffs**.

24 **Cape Lambton** *(71°05'N, 123°08'W)*, a blunted point rising abruptly from the water to 15 m, shelves back for a short distance then rises again almost perpendicularly to an elevation of 245 m forming a bold, imposing headland. **Durham Heights**, a short distance inland, rise to 750 m, the highest elevation on Banks Island.

25 Local **magnetic disturbance** has been reported in the vicinity of Cape Lambton.

Sachs Harbour and Approaches

26 **Sachs Harbour** *(71°59'N, 125°14'W)* lies at the mouth of **Sachs River**.

27 Several meteorological **buildings**, on a hill north of the harbour, are **conspicuous**. A white weather **dome** here has been picked up on radar at 26 miles and visually at 15 miles.

28 **Caution**. — A **shoal spit**, on which the sea breaks, extends 1 mile ESE from Sachs Harbour NW entrance point; another **shoal spit**, with less than 2 m over it, extends 0.5 mile WNW from its SE entrance point. A **bar** connects these spits; the channel across this bar had a **least depth** of 2.4 m *(1972)*. The depth across the bar is liable to change due to ice action. Moderate **winds** from the west to SE will cause a **ground swell** and **breakers** along the length of the bar; during these conditions it is unwise to enter the harbour.

29 **Caution**. — During strong north winds more suitable shelter than that offered by Sachs Harbour can be found in the anchorage *(previously described)* 6 miles west of the harbour. If sheltering in Sachs Harbour, keep a good watch if the **wind** shifts to the west or NW; the **ice** barrier

RADAR DISPLAY — APPROACHES TO SACHS HARBOUR (Prior to 1961)

can move in toward the land quite rapidly in a fresh westerly wind.

30 The **water level** is more dependent on meteorological conditions than on tidal forces. With strong NW winds an additional 0.6 to 1 m of water over predicted heights will sometimes be found over the bar. *Sachs Harbour (Index No. 6424)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

31 A tripod **beacon tower** 9.1 m high, at the top of the bluff at the harbour entrance, has a red daymark and radar reflector. This tower has an elevation of 15.5 m. Another tripod **beacon tower** 7.9 m high, with a red daymark and radar reflector, is on the north side of the harbour.

32 **Sachs Harbour** hamlet, population 122 *(2006)*, is on the north side of the harbour west of the river entrance.

33 A **beacon range** consisting of two towers with red and white daymarks, in line bearing 056°, leads over the bar to the **landing beach** in front of the hamlet.

34 Sachs Harbour is connected by satellite **telecommunications**, including internet access, to other northern communities and to population centres to the south.

35 The community is supplied by *Northern Transportation Limited* barge in the summer, and has a gravel airstrip 1,219 m long by 30 m wide with scheduled service by *Aklak Air* to Inuvik 3 days a week.

36 An **aeromarine radiobeacon** at Sachs Harbour transmits on 321 kHz with identification *Morse* "YSY" (— • — — • • • — • — —).

37 An aeronautical rotating **light** is shown from near the airstrip.

38 It is reported that barges drawing 1.8 m are able to come alongside at the beach near the tip of the point at the hamlet, 0.2 mile south of the beacon range. Two deadman anchors are reported *(1989)* to be suitable for bow and stern lines but too far inshore for effective spring lines.

39 Two **towers** with red air obstruction **lights** are about 1.3 miles WNW of the hamlet.

40 There is a post office and a 2-man detachment of *Royal Canadian Mounted Police (RCMP)*, who also handle customs *(see "Regulations" in Chapter 1 of ARC 400 and visit: http://www.cbsa-asfc.gc.ca)*. *Sachs Harbour Health Centre*, with one nurse, is supported by visiting health care professionals and an air ambulance service for more serious cases.

41 *Kahuk Co-operative Limited* provides limited supplies for travellers and *Katana's Guest House* offers bed-and-breakfast accommodation.

42 **Anchorage** in about 7 m can be obtained 0.6 mile SW of the hamlet. The water in Sachs Harbour is very clear and the bottom can be seen in 9 m.

43 The average thickness attained by winter shore fast **ice** in Sachs Harbour is 188 cm with a record maximum thickness of 229 cm measured in 1961. Break-up normally begins by mid June with the harbour clearing of ice near mid July. Freeze-up usually occurs around October 1 with a complete ice cover by the middle of the month. Three to four weeks variation in break-up and freeze-up can occur.

44 *(For **climate** normals and averages for Sachs Harbour, weather station name Sachs Harbour A, visit: http://www.climate.weatheroffice.ec.gc.ca /climate_normals/ index_e.html.)*

45 **Historical Note**. — The harbour was named after the ship *Mary Sachs* of the *Canadian Arctic Expedition* 1913 to 1918. Permanent settlement did not begin on Banks Island until 1929 when three Inuit families sailed to Sachs Harbour to trap for the winter. The *RCMP* established a post here in 1953.

Banks Island — SE Coast

46 The south end of Banks Island between Cape Lambton *(71°05'N, 123°08'W)* and Nelson Head, 7 miles east, is very steep and forms a dramatic headland, about 450 m high, composed of horizontal layers of pink, white and buff quartzites interspersed with layers of dark basalt.

47 **Nelson Head** *(71°05'N, 122°57'W)* rises 365 m almost perpendicularly from the water, forming a **conspicuous landmark** and radar target.

48 A **magnetic anomaly** has been reported in the vicinity of Nelson Head.

49 **Caution**. — A **shoal** with a **least depth** of 21 m lies 2 miles offshore, approximately halfway between Cape Lambton and Nelson Head.

50 Precipitous **cliffs** extend 4 miles NNE from Nelson Head then give way to a low, broad valley, about 7 miles wide, fronted by sand spits enclosing lagoons. **Nelson River** flows through this valley. An isolated conical peak with an elevation of 213 m, about 3 miles inland on the north side of the valley, is a good landmark.

51 The **coast** between Nelson River and Cape Collinson, 9 miles NE, consists of steep cliffs, 15 m high, deeply cut by gullies; a narrow sand and gravel beach fronts the coast in this sector.

52 **Cape Collinson** *(71°17'N, 122°07'W)* is a gently rounded point, about 25 m high, composed of unstratified mud and boulders. Hills with elevations of 500 m are about 5 miles inland.

53 **Cape Cardwell**, 15 miles ENE of Cape Collinson, is the south end of a north/south ridge and composed of cliffs with elevations of 50 m.

De Salis Bay and Approaches

54 The SE approach to De Salis Bay, passing close south of Cape Cardwell, is comparatively shallow with **depths** of 11 to 15 m occurring within 0.5 mile of the coast. **Depths** of 18 m extend 5 miles south of Cape Cardwell.

55 **De Salis Bay** *(71°27'N, 121°37'W)* has low shores backed inland by an uneven sloping scarp bordering a gently undulating plateau reaching elevations of 425 m near its south edge.

56 In normal years much of the **ice** in De Salis Bay melts in place. The ice cover begins to break-up near the end of June and clears during the first week of August. Freeze-up usually commences within the second week of October.

57 Larsen reported finding high mounds of rock and gravel pushed up on the spit sheltering the harbour and concluded they were caused by heavy ice pressure. Manning similarly reported *(1952)* even prior to break-up, in spite of fine weather and light winds, ice was pushed farther up on the beach every day over a two-week period. Wintering in De Salis Bay is, therefore, not recommended.

58 A **tidal range** varying from 0.2 to 0.5 m has been reported in De Salis Bay.

59 **Windrum Lagoon**, at the head of the bay, can only be entered by canoe through a long narrow channel leading behind a sand spit. A cabin is on the sand spit near the entrance to the channel *(1994)*. The average depth in the lagoon is about 4 m. **Pass Brook** and **De Salis River** enter the NW and NE sides of Windrum Lagoon, and **Sandhill River** enters the south side. The latter gets its name from the sand hills near its mouth. The highest sand hill, about 5 m high, forms a good landmark and vantage point in otherwise low, flat country.

60 A sand and gravel spit projecting from the east side of De Salis Bay has an elevation of 3 m and forms a natural breakwater.

61 The SW side of the bay, into which several streams discharge, is formed of sand enclosing narrow lagoons.

62 The water in De Salis Bay is very clear and the bottom can be seen in depths of at least 8 m.

63 **Anchorage** can be obtained on the east side of De Salis Bay, north of the sand and gravel spit and about 1 mile east of its western end, in 12 m. Good shelter can be found in this position from all winds except those from between north and west which, when strong, can develop a fair sea. Under such conditions adequate shelter can be found in the NW part of the bay.

Cape Cardwell to Alexander Milne Point

64 Between Cape Cardwell *(71°23'N, 121°24'W)* and Alexander Milne Point, 21 miles NE, the **coast** consists mainly of 25 m cliffs of unconsolidated material fronted by gravel and shingle beaches. Inland the land is barren, rising to 60 m in the vicinity of Cape Cardwell and about 400 m 5 miles inland from Alexander Milne Point.

65 Several streams reach Amundsen Gulf in this sector. **Cardwell Brook**, about 6 miles ENE of Cape Cardwell, is the only stream likely to provide a landmark; it reaches the coast as a comparatively wide channel of braided streams.

66 **Alexander Milne Point** *(71°33'N, 120°29'W)* is a gently rounded point formed of cliffs 30 m high. It is the SW entrance point to Prince of Wales Strait.

Walker Bay and Approaches

Chart 7521

67 **Berkeley Point** *(71°35'N, 118°52'W)*, on Victoria Island at the SE entrance to Prince of Wales Strait, consists of a low, flat foreshore which rises sharply about 0.5 mile inland to a flat-topped headland about 30 m high. A narrow spit projects east close north of the point.

68 **Caution**. — **Depths** in the approaches to Walker Bay are spot soundings through the ice obtained in 1982 and spaced 0.7 mile apart; shoal depths have not been examined. **Depths** in Walker Bay are from a reconnaissance survey in 1963. *(For details see the Source Classification Diagram on the chart.)*

69 **Caution**. — If making for Walker Bay from Prince of Wales Strait, the **channel** between Berkeley Point and **Ramsay Island** should not be attempted because of **shoals** and **incomplete surveys**.

70 The coast between Berkeley Point and Pemmican Point, 8 miles east, is indented by an unnamed bay. A broad headland, projecting from the middle of the head of the bay, has a prominent rounded knoll on its south extremity. A conspicuous rounded hill, 2 miles NW of the knoll and surmounted by a conical top, has an elevation of 130 m.

71 **Pemmican Point** *(71°35'N, 118°26'W)* is a low, narrow, razor-backed peninsula projecting SW from a rounded knoll at its base. Another peak of distinctive appearance, about 2 miles east of Pemmican Point, rises sharply from the water to over 90 m.

72 **Caution**. — A **shoal** of doubtful position and extent is charted 1 to 3 miles SW of Pemmican Point. The **depth** over this shoal is **unknown**.

73 **Walker Bay** *(71°35'N, 118°07'W)*, entered between Pemmican Point and Cape Peter Richards, 7 miles SSE, penetrates Prince Albert Peninsula for about 14 miles; it is indented by lesser bays and coves, some of which afford excellent, well-protected anchorages.

74 HMS *Enterprise* (Captain Richard Collinson, RN) wintered in Winter Cove 1851/52; *St. Roch* (Sergeant Henry Larsen, *RCMP*) spent the 1940/41 winter in the SE corner of Walker Bay.

75 Under average conditions **ice** begins to break-up in Walker Bay during the first week of July with clearing of the bay by the first week of August. Freeze-up can normally be expected to start during the first week of October. Wide variations in break-up and freeze-up have been recorded.

76 **Parkes Bluff**, on the north side of the bay, 3 miles within the entrance, is a useful guide when making for Walker Bay; it rises in three table ridges to 210 m and is surmounted by a cluster of five small cones.

77 **Cape Peter Richards** *(71°28'N, 118°18'W)* is a slight projection consisting of a cliff of moderate height. The land behind shelves back for a short distance before rising almost vertically to **Mount Phayre**, a conspicuous pinnacle 150 m high. The coast is comparatively low close north of the cape, and higher to the south.

78 **Crag Point**, 8 miles NE of Cape Peter Richards, has the appearance of an old castle or artificial mound. **Shoal water** extends up to 1 mile offshore for several miles on either side of the point.

79 An unnamed cove in the SE end of Walker Bay is reported to have depths of 16 m in its central part but a **depth** of 4 m lies in the west approach and a **shoal** is reported to extend off its SW entrance point. A crooked peninsula, made remarkable by two rounded knolls on its west extremity, separates the above-mentioned cove from Winter Cove.

80 **Winter Cove**, entered south of **conspicuous Flagstaff Hill**, has comparatively low shores on the north and east sides but the south side rises sharply and is backed by prominent jagged peaks. Two streams enter the cove at its head. It is reported light aircraft can land on the low ground in the NE corner of the cove.

81 **Anchorage** in Winter Cove is reported to be good but the terrain offers little protection from the wind and strong west winds will probably bring ice.

82 The head of the cove is shallow with **depths** of 5.5 m about 0.5 mile offshore.

83 **Skead Bluff** *(71°37'N, 117°56'W)*, a headland rising to 120 m, forms the west end of a peninsula of rounded limestone hills with elevations of about 210 m.

84 The cove SE of Skead Bluff is the site of the abandoned settlement **Fort Collinson**; its beaches are boulder-strewn and **depths** of 3.7 to 7.9 m exist close off its shores. On the SE side of this bay, four **rocks** with 2 m or less over them lie close offshore.

85 **Anderson Point**, on the west side of Walker Bay, is a low cliff terminating in a shingle point.

86 **Jago Bay**, the NE arm of Walker Bay, is bordered on both sides by high rounded hills which rise gradually from the water and offer little protection from the wind. Strong west winds will probably drive any ice in the vicinity into the bay. In the NW part of Jago Bay some flat land appears suitable for landing light aircraft.

87 **Anchorage** in Jago Bay has been described as excellent. Limited soundings show an irregular bottom. A **rock** with 2 m or less over it lies close off the south shore, 2 miles from the head.

Minto Inlet

88 **Minto Inlet** *(71°20'N, 117°09'W)* is entered between an unnamed point, 4.5 miles SSE of Cape Peter Richards, and Cape Wollaston 17 miles farther SSE. The inlet penetrates Victoria Island for 38 miles before dividing into two arms, the north arm continuing for 21 miles, the south for 10.

89 Break-up in Minto Inlet starts at the west end during the first week of July and spreads to the east end by the third week of the month. Normally the area is clear of **ice** by the end of July. Considerable variation in ice conditions can occur from one season to the next.

90 In 1965, there was 8/10 ice coverage in the inlet until August 27, but on September 10 it was ice-free. In 1967, there was 8/10 coverage until August 20, but on August 27, there was only 2/10 coverage. In 1964, break-up occurred in the latter part of July but there was 5/10 coverage until sometime between August 20 and 27.

91 The earliest date the bay was ice-free during the period 1960 to 1984 was July 9, 1968.

92 New **ice** usually starts to form in the inlet during the first week of October but in 1965 and 1972 it had started to form by September 24, and in 1971 the inlet was still ice-free on October 22.

93 **Caution**. — **Depths** in the approach and entrance to Minto Inlet are spot soundings through the ice obtained in 1973 and spaced 3.2 miles apart; inside the inlet they are from randomly spaced track soundings. In Fish Bay and Boot Inlet, on the north side, they are from a reconnaissance survey in 1963. *(For details see the Source Classification Diagram on the chart.)*

94 **Caution**. — From sparse **track soundings**, the inlet appears to be fairly deep throughout its length. Two small islands lie in the centre of the inlet, 20 miles within the entrance. A relatively **shallow sounding** of 51 m, 2 miles WSW of the islands, indicates the possible existence of a **submarine ridge**. The two islands would be its exposed part.

95 A **tidal range** just under 0.6 m has been reported at the head of the inlet; storm beaches in the same area indicate, even at highest water, the range will unlikely exceed 1.2 m.

Minto Inlet — North Side

96 **Fish Bay** *(71°23'N, 117°40'W)*, on the north side of the inlet, 10 miles within the entrance, has **Grassy Bay** at its head.

97 A promontory on the west side of Fish Bay rises steeply on its east side to 130 m; it is remarkable because it is split in half by a wide ravine running NE/SW.

98 A cove 2 miles west of Fish Bay is split into two arms in its NE part by a prominent bluff. At the head of each arm the land is fairly flat.

99 Neither Fish Bay nor the cove described above offer protection from ice.

100 **Boot Inlet** *(71°25'N, 117°27'W)* is entered between a headland of moderate elevation on its west side and a precipitous black cliff on its east side; an isolated pinnacle marks the extremity of the black cliff, and a ridge-shaped islet lies close SW. The inner portion of the inlet is encumbered with rocks and small islands.

101 A stream enters the NE part of the inlet between two precipitous, parallel ridges; the south ridge terminates in a prominent peak 301 m high.

102 Boot Inlet was reported by Collinson to be the best winter quarters in the vicinity; the NW corner is recommended.

103 **Collingwood Range** extends east from Boot Inlet along the north shore of Minto Inlet.

104 A small, finger-shaped peninsula is 10 miles ENE of Boot Inlet. A flat-topped hill is 1.5 miles north, and a **conspicuous knoll**, 222 m high, is 2.5 miles NE of the peninsula.

105 A stream discharges into Minto Inlet, 4.5 miles east of the knoll described above, through a deep narrow gorge. A **conspicuous** rounded **peak** about 4 miles north of the mouth of the stream rises above the surrounding terrain to an elevation of 375 m.

106 Minto Inlet is divided into two arms near its eastern end. The peninsula between the two arms is a long point of precipitous black rock; its terminus is an island *(71°26'N, 116°16'W)* separated from the remainder of this point by a narrow channel.

107 A river, close west of the north entrance point to the north arm of Minto Inlet, reaches the coast through a prominent steep-sided valley about 1 mile wide. On the west side of the valley, the land descends in narrow terraces to the sea but drops

sharply into the valley; on its east side, precipitous cliffs face both the valley and the inlet. A narrow ledge projects 0.3 mile to seaward of the cliffs.

Minto Inlet — North Arm

108 A narrow inlet, 15 miles within the entrance of the north arm, branches off to the ESE for 5 miles then turns ENE for 5 more miles.

109 **Caution**. — **Sparse soundings** in the entrance to the north arm indicate deep water, but **air photos** indicate several **shoal patches** near the head and **rapidly shoaling** water 1 mile from the head of the main section. Both the main section of the north arm and the narrow inlet have streams discharging into their heads through deep ravines.

Minto Inlet — South Side

110 **Cape Wollaston** *(71°07'N, 118°03'W)* is low with high ground rising close inshore.

111 The coast 13 miles ENE of Cape Wollaston rises in terraces from a low black ridge to an elevation of about 240 m.

112 A cove 18 miles ENE of Cape Wollaston is known locally as **Omanahok**.

113 **Kuujjua River**, 8 miles farther ENE, enters Minto Inlet through an almost sheer-sided gorge whose north side is formed by a narrow range of flat-topped hills. The west extremity of this range is marked by a **conspicuous** isolated **peak** rising to an elevation of 282 m.

114 Between Kuujjua River and the south arm of Minto Inlet, 13 miles ENE, the coast is composed of high, almost perpendicular, cliffs with a higher, north-facing escarpment rising a short distance inland. These cliffs terminate at the entrance to the south arm, being separated from a peninsula of lower elevation by a ravine 0.5 mile wide.

Minto Inlet — South Arm

115 **Depths** of 38 m lie in the entrance to the south arm.

116 CCGS *J.E. Bernier* obtained sheltered **anchorage** *(1980)* in the south arm, south of the entrance. There was good holding ground, in 50 m, mud.

Minto Inlet to Prince Albert Sound

Charts 7521, 7668

117 From Cape Wollaston *(71°07'N, 118°03'W)* past Cape Ptarmigan, the west extremity of **Diamond Jenness Peninsula**, to Coast Point **depths** of 11 to 15.8 m lie up to 1.5 miles offshore, therefore it is advisable to give this stretch of coast a wide berth.

118 **Cape Ptarmigan** *(70°59'N, 118°25'W)* is low. Streams have created many ravines in its southern part. The land rises gradually to hills which reach elevations of about 200 m 4 miles inland. A small island lies close off its south end.

119 **Coast Point**, 9 miles SSE of Cape Ptarmigan, is low but cliffs 110 m high are 2.5 miles NNW of the point.

Chart 7668

Ulukhaktok (Holman) and Approaches

120 **Ulukhaqtuuq (Uluksartok Bluff)** *(70°44'N, 117°48'W)* is 11 miles SE of Coast Point.

121 **Holman Island**, 3.5 miles SSE of Ulukhaqtuuq, rises in steep cliffs to flat-topped ground with an elevation of about 90 m; at the north end of the island the high ground drops abruptly to a low, flat extremity.

122 **Caution**. — A **shoal** depth of 3.7 m, existence doubtful, was reported in 1962 to lie 1.1 miles south of Ulukhaqtuuq. A **rock** with 5.1 m over it lies 1.4 miles SSW of Ulukhaqtuuq.

123 **Caution**. — A **shoal** is reported to extend from the north extremity of Holman Island.

124 Ulukhaqtuuq is a **conspicuous promontory**. **Jacks Bay**, on the NW side of Ulukhaqtuuq, has the **Ukpillik River** discharging into its head. **Queens Bay** is on the east side of the promontory.

125 East of Queens Bay, **Kings Bay** offers good shelter except from southerly winds, when a considerable swell comes into the bay. The beaches are rocky and fall sharply into deep water close offshore. The hamlet of Ulukhaktok (Holman) is on the west shore of Kings Bay.

126 **Caution**. — The approaches to Ulukhaktok (Holman) have **not** been fully **sounded** *(1991)*.

127 Ulukhaqtuuq can be passed close aboard as deep water extends close to the cliffs. Approaching the entrance to Kings Bay, favour the west side as the bluff is steep-to and depths on the east side are unknown.

128 The peninsula separating Queens Bay from Kings Bay is divided into two parts by a narrow, drying channel.

129 **Limestone Hill**, about 3.5 miles north of the head of Kings Bay, has an elevation of about 210 m and is quite **conspicuous** from the approaches. A prominent escarpment with elevations in excess of 150 m, about 0.5 mile inland, parallels the east side of Kings Bay.

130 The usual **anchorage** is close off the west side of Kings Bay, north of the hamlet, in 13 m with a clay and gravel bottom; the holding ground is poor. A **landing area** is on the west shore at the foot of a road close to the oil tanks. A ramp and deadman anchors *(1991)* for mooring barges are at the beach. Queens Bay was used to unload supplies for Ulukhaktok (Holman) in 1964/65 due to adverse ice conditions in Kings Bay.

ULUKHAQTUUQ (ULUKSARTOK BLUFF) BEARING 065° — 2.2 MILES (1991)

ULUKHAQTUUQ (ULUKSARTOK BLUFF) BEARING 060° — 0.1 MILE (1991)

KINGS BAY (1991)

131 **Anchorage** for large vessels can be obtained 0.2 mile south of the peninsula that separates Kings Bay from Queens Bay in 38 m.

132 **Ulukhaktok (Holman)** hamlet, population 398 *(2006)*, is on the west side of Kings Bay and spreads along the north shore of Queens Bay.

133 Ulukhaktok is connected by satellite **telecommunications**, including internet access, to other northern communities and to population centres to the south.

134 The community is supplied by *Northern Transportation Limited* barge in the summer, and has a gravel airstrip 1,310 m long by 30 m wide with scheduled service by *Aklak Air* to Inuvik 3 days a week.

ULUKHAKTOK (HOLMAN) (1991)

ULUKHAKTOK (HOLMAN) (1991)

135 An **aeromarine radiobeacon** *(70°45'42"N, 117°47'16"W)* transmits on 361 kHz with identification *Morse* "HI" (• • • • • •).

136 There is a post office and a 2-man detachment of *Royal Canadian Mounted Police (RCMP)* provides police and customs services *(see "Regulations" in Chapter 1 of ARC 400 and visit: http://www.cbsa-asfc.gc.ca)*. *Emegak Health Centre*, with 7 employees, offers health and community services and is supported by visiting health care professionals. An air ambulance service is available for more serious cases.

137 A *Northern Store* offers general merchandise and groceries. The *Holman Eskimo Co-operative* was incorporated in 1961 and operates a variety of businesses including the *Arctic Char Inn*, offering accommodation; a retail store, post office, cable tv and fuel delivery services, and a print-making shop and gift store where members sell arts and crafts.

138 The average thickness attained by winter shore fast **ice** in Kings Bay is 207 cm with a record maximum thickness of 221 cm measured in 1961. Break-up normally begins about the end of June with the bay clearing of ice about mid July. Freeze-up usually occurs in the second week of October with a solid ice cover developing during the last week of the month. Four to six weeks variation in break-up and freeze-up can occur.

139 The **tidal range** in Kings Bay is about 0.6 m. *Holman (Index No. 6380)* is a reference port in *Canadian Tide and Current Tables, Volume 4*.

140 *(For **climate** normals and averages for Ulukhaktok, weather station name Ulukhaktok A, visit: http://www.climate.weatheroffice.ec.gc.ca/climate_normals/index_e.html.)*

141 **Historical Note**. — Victoria Island is the ancestral homeland of the Copper Inuit, and early in this century there were about 300 Inuit in the area, who hunted on Banks Island in the winter and on Victoria Island, for caribou, in the summer. The first *Hudson's Bay Company* post in the area was established in 1923 on the north shore of Prince Albert Sound.

The post moved several times, finally establishing at Holman in 1939. In 1962, when the post at Read Island in Dolphin and Union Strait was closed, the inhabitants moved to Holman. Holman became Ulukhaktok in 2006.

Prince Albert Sound

Charts 7668, 7669

142 **Prince Albert Sound**, entered between Holman Island *(70°39'N, 117°43'W)* and Cape Baring, 37 miles SSE, penetrates Victoria Island for 120 miles.

143 **Horizon Islets**, a group of three islets, lie in the middle of the entrance to the sound.

144 **Caution**. — The approach and entrance to Prince Albert Sound was surveyed in 1978 with sounding lines spaced about 0.8 mile apart. Depths in Prince Albert Sound are from track soundings; those in Safety Channel along the north shore are from a reconnaissance survey in 1963. *(For details see the Source Classification Diagrams on the charts.)*

145 **Caution**. — A **shoal area**, the precise location and extent unknown *(1991)*, is reported to lie about 10 miles off the south shore in the vicinity of 114°00'W. Safe transits have been made passing north of the axis of the sound in this area. A **rock** with a depth of 3.5 m over it lies 4.4 miles south of the north shore in the vicinity of 112°45'W.

146 **Ice** begins to break up in Prince Albert Sound at the west end during the first week of July and progresses to the east end by the third week of the month. Normally the sound is clear of ice by the end of July. Freeze-up on the average will commence during the second week of October. Considerable variation in ice conditions can occur from one season to the next.

147 The north **coast** of the sound, between Holman Island and Investigator Island, 35 miles ESE, is formed of precipitous cliffs, with several bold headlands, rising to an upland plateau. Albert Islands, which front this stretch, rise sharply from the water on their south sides to bare, flat tops and slope gradually toward the water on their north sides. East of Investigator Island, the coast is low, with old beaches and low hills close to the coast backed several miles inland by hills rising to about 450 m.

148 The north side of the sound affords several landmarks for position fixing, however, the off-lying islands indicate the possibility of off-lying **shoals**.

149 The south side of Prince Albert Sound, between Cape Baring and Linaluk Island, 90 miles east, rises quite steeply to rounded ridges but affords few landmarks. Between Linaluk Island and the head of the sound, the coast consists of a series of NW/SE points and small islands formed by moraines.

Chart 7668

Prince Albert Sound — North Side

150 **Freshwater Bay** *(70°36'N, 117°28'W)*, on the north shore of the sound 5 miles within the entrance, has a stream at the north extremity of its west arm which is an excellent source of fresh water. Its east arm is connected to a large lake, 1 mile north, by a small stream. A plateau about 60 m high on the west side of the bay appears suitable for landing light aircraft. A hill on the west side of the west arm has an elevation of 183 m and has steep cliffs on its seaward face.

151 **Albert Islands**, fronting the north shore of Prince Albert Sound for 25 miles, are all similar in appearance; they rise fairly sharply from the water on their south sides to bare, flat tops, and slope gradually toward the water on their north sides.

152 **Caution**. — **Caution Channel** leads between Albert Islands and **Bold Bluff**, a mass of low, bare, flat-topped rock. A single line of soundings through this channel, obtained in 1963, indicates the **bottom** is very **uneven**. The entrance to **Shoal Bay** is **obstructed** by an island and **rocks** with 2 m or less over them. Survey ship *Richardson*, which attempted to enter this bay in 1963 but found the entrance blocked by the rocks described above, reported indications of very **shallow depths** inside the bay.

153 **Safety Channel**, from a single line of soundings obtained in 1963, appears to have moderate depths along its axis, but because the north sides of Albert Islands slope gradually northward, it is likely that comparatively **shallow water** extends some distance north of the islands.

154 **Cairn Bluffs**, on the north shore, have a river at their west end which discharges through a deep gorge. A smaller river at the east end of the bluffs discharges through a steep-sided valley.

155 A river entering Safety Channel 2 miles east of the last-mentioned river makes a good landmark as it flows through a gap about 1.5 miles wide in the precipitous cliffs.

156 A **conspicuous island**, 3 miles east of the last-mentioned river and about 0.5 mile offshore, is cone-shaped and rises steeply from the water on all sides.

157 **Graveyard Bay**, in the NE corner of Safety Channel, appears to offer suitable conditions, on its south shore, for landing light aircraft.

158 **Refuge Cove** is sheltered on its west side by a bold headland rising to 80 m.

159 **Investigator Island** *(70°34'N, 115°55'W)* lies on the east side of the east entrance to Safety Channel. A single line of soundings, obtained in 1963, shows a **least depth** of 11.6 m in this channel. **Air photos** indicate **shallow water** surrounding a group of low islands that lie east and SE of Investigator Island.

Chart 7669

160 A low island *(70°35'N, 115°08'W)* is about 2 miles offshore. Two islets lie close offshore 5 and 8 miles farther east.

161 East of Investigator Island, the north **coast** is low, scarred by old beaches, and rises to low hills backed by inland hills rising to 450 m. Several streams and rivers discharge into Prince Albert Sound along this part of the coast but none appear to be navigable or of sufficient size to be a landmark. **Air photos** show the alluvial deposits from the rivers along this shore have caused **shoaling** off their mouths and the numerous inlets are very **shallow**.

162 A river of moderate size enters Prince Albert Sound at its most northerly latitude *(70°43'N, 113°58'W)*. **Air photos** indicate some shoaling off the river mouth.

163 A river of similar size reaches the sound 4.5 miles to the ESE between low hills marked by raised beaches. **Air photos** indicate shoaling has occurred some distance to seaward and along the coast ESE of the river mouth.

164 A broad headland *(70°39'N, 113°34'W)*, 3.5 miles SE of the above-mentioned river entrance, has an elevation of 68 m. An islet is said to lie close south of this headland.

165 A bay on the east side of the broad headland has two rivers discharging into the head of its east arm.

166 A prominent terraced hill, on the east side of the above-mentioned bay, is scored by raised beaches and rises to an elevation of about 30 m. A low island lies about 1 mile offshore and 2 miles SE of the terraced hill.

167 Another prominent hill, elevation 40 m, is at the south end of a small peninsula 13 miles SE *(70°33'N, 112°51'W)*; a third hill, about 2 miles north of the small peninsula, has an elevation in excess of 90 m.

168 **Kuuk** *(70°34'N, 112°38'W)*, a river, enters the sound 4 miles east of the 40-m hill; its alluvial deposits have caused shoaling for some distance off its mouth.

169 **Caution**. — A **rock** with 3.5 m over it, discovered in 1979, lies 202°, 4.4 miles from the mouth of Kuuk. **Depths** close to the rock appear from sparse track soundings to range from 31 to 55 m.

170 An island 13 m high lies about 2 miles SE of Kuuk entrance, separated from the mainland by a narrow, **shallow** channel. Two islets lie close together 1 mile to the NW.

171 A prominent unnamed **bluff** *(70°31'N, 112°24'W)* on a peninsula is the first noticeable feature in this area for a vessel approaching from the west; it was sighted at 20 miles by *Canadian Coast Guard* ship *Franklin* in 1979.

172 CCGS *Franklin*, in 1979, found **anchorage** 4.5 miles SW of the prominent unnamed bluff in about 38 m, mud and clay, with excellent holding.

173 An island, 1 mile SW of the above-mentioned bluff, terminates sharply at both ends in rising knolls which can, from a distance, have the appearance of two islands. Two islets lie in mid-channel between the island and shore, and two more islets lie close offshore 4 miles to the east.

174 **George Island** *(70°20'N, 112°14'W)* is the largest of numerous islands fringed by sand banks encumbering the head of Prince Albert Sound. Sparse soundings from Collinson's survey in 1852 indicate mid-channel **depths** east of the west end of George Island range from 7.6 to 16.5 m.

Chart 7668

Prince Albert Sound — South Side

175 **Cape Baring** *(70°02'N, 117°22'W)*, the south entrance point of Prince Albert Sound, is a low, sandy point projecting NW from the foot of steep cliffs.

176 **Cape Back**, 14 miles ENE of Cape Baring, is low and inconspicuous; it projects a short distance north from the foot of steep cliffs.

177 The coast between Cape Baring and Cape Back consists of steep cliffs with a north-facing scarp rising above them a short distance inland.

178 An unnamed river close west of Cape Back enters the sound through a narrow gorge which forms a useful landmark.

179 For about 65 miles east of Cape Back, the coast has steep slopes and numerous raised beaches but is lacking in useful landmarks. It then becomes less steep and lower in height. Sharply rising land, where it does occur, is also scored by raised beaches.

Chart 7669

180 **Linaluk Island** *(70°18'N, 113°04'W)*, with a maximum elevation of 30 m, lies 2 miles off the south shore of Prince Albert Sound and 30 miles from its head. A drying spit extends 5.2 miles WNW from its SW corner, and a drying bank lies 8 miles west of the island. The channel separating Linaluk Island from the south shore is encumbered by several islets and drying banks, particularly off the SE side of the island.

181 An unnamed island, 5 miles east of Linaluk Island and 3.5 miles offshore, has an elevation of 15 m. An islet lies 1 mile north of it and several small islands lie between it and the mainland to the south.

182 From the above-mentioned island to George Island, the coast consists of a series of NW-trending moraine points.

183 **Kagloryuak River** enters the SE corner of Prince Albert Sound through an estuary 4 miles wide filled with islands and sand banks. Its tributaries drain a considerable area to the north, east and SE.

Dolphin and Union Strait

General

Charts 7000, 7082, 7667, 7710, 7776

1 The **coastal route** through the Northwest Passage leads eastward from Amundsen Gulf, through Dolphin and Union Strait and Coronation Gulf, then through Dease Strait and SE'Ward into Queen Maud Gulf. From there, the route leads either south and east of King William Island through Simpson Strait, Rae Strait, St. Roch Basin and James Ross Strait, or west of King William Island through Victoria Strait.

2 **Caution**. — Depths along this route are generally from **reconnaissance surveys**; shipping corridors are outlined in magenta and are surveyed more accurately and completely than surrounding areas.

3 Ample depths for medium-draught vessels exist along the route as far east as the Nordenskiold Islands, near the centre of Queen Maud Gulf. Navigational difficulties arise in the east part of Queen Maud Gulf and in Simpson Strait; the track through this area is tortuous and abounds in dangerous shoals. The least known depth in the fairway through the east part of Queen Maud Gulf and Simpson Strait is 7.3 m, but the maximum draught of vessels using this route has been 5 m. The route west of King William Island through Victoria Strait has deeper water and is fairly straight, but is likely to have the worst ice conditions along the mainland coast of Canada.

4 *(For general **ice conditions** in Dolphin and Union Strait, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For detailed information on present and forecast ice conditions in Northern Canada, visit: http://ice-glaces.ec.gc.ca.)*

5 *(For general **weather** conditions in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For present and forecast weather conditions, visit: http://www.weatheroffice.gc.ca/canada_e.html.)*

6 This chapter covers Dolphin and Union Strait, to Cape Krusenstern and Lady Franklin Point.

7 *Northern Canada Vessel Traffic Services (NORDREG) Zone* covers all waters described in this chapter. The primary objective of this system is to assist the master in the safe and expeditious conduct of the vessel by promulgating information on ice conditions, giving advice on routes and providing icebreaker support where available and considered necessary.

8 Traffic clearance requests and reports required by this system shall be addressed to *NORDREG CANADA*. Requests and reports may be passed through any *Canadian Coast Guard Marine Communications and Traffic Services* centre free of charge. All times shall be given in *Co-ordinated Universal Time*.

9 *(For further information concerning Vessel Traffic Services in the Arctic, consult Radio Aids to Marine Navigation, available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*

10 **Caution**. — Charts of Dolphin and Union Strait are based partly on **reconnaissance surveys** and **track soundings**. A **shipping channel** *(Charts 7710, 7776)* has been sounded on the mainland side through the east half of Dolphin and Union Strait, continuing full width of the strait from Howard Bay into Coronation Gulf. The channel has been surveyed more completely and accurately than surrounding areas; caution is advised if operating outside the channel. *(For details see Source Classification Diagram on the charts.)*

11 **Racons**, which operate only during the navigation season, are on Cape Bexley and Cache Point. Daymark **beacons** with radar reflectors are on Waldron and Lambert Islands and near Dickens Point.

12 **Caution**. — Particularly at the beginning of the navigation season, when all **aids to navigation** may not be in place, it is recommended passage be made through the east part of Dolphin and Union Strait by day only, in good visibility, because of the uncertainty regarding tidal streams and difficulty in obtaining accurate radar fixes due to low land features.

13 Under normal conditions there appears to be a dominant surface **current** from Amundsen Gulf through Dolphin and Union Strait into Coronation Gulf. However, it is probable that after the termination of extended periods of strong NW winds, the dammed-up water in Coronation Gulf reverses the flow and a NW-flowing current will persist for a few days.

14 In the western and wider part of the strait, the currents are probably weak and irregular, varying with wind direction. It has been reported that a southerly set is generally experienced in the vicinity of Clifton Point, and about 0.2 mile off Cape Young a current flowing NW at 3 knots has been noted.

15 At the SE and narrower end of the strait, the current is reported to be tidal. In Cache Point Channel, a current flowing SE or south at 1.7 knots and NW at 0.2 knot has been measured; maximum rates of 2.5 knots in Cache Point Channel and 1 knot between Douglas Island and Lady Franklin Point, setting in both directions, can be attained. South of Cache Point Channel, off the entrance to Austin Bay, a strong SW set can be experienced with the east-going tidal stream. In Lambert Channel west of Cache Point Channel, very strong currents can be encountered flowing either into or out of Coronation Gulf, and tide-rips occur in the vicinity of the shoals.

16 During hydrographic surveys, stronger than previously reported currents were observed in Cache Point and Lambert Channels.

17 The **tidal range** of large tides is 0.8 m. *Bernard Harbour (Index No. 6310)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

18 *(For **climate** normals and averages for selected locations in this area, visit: http://www.climate.weatheroffice.gc.ca. For maps relating to general weather patterns, visit: http://atlas.nrcan.gc.ca/site/index.html.)*

19 The **magnetic compass** is erratic in the areas described in this chapter.

Dolphin and Union Strait

Chart 7082

20 **Dolphin and Union Strait** is entered from Amundsen Gulf between Cape Baring *(70°02'N, 117°22'W)* and Clifton Point, 56 miles SSW. The strait, about 123 miles long, enters Coronation Gulf between Lady Franklin Point, on Victoria Island, and Cape Krusenstern, 15 miles WSW.

21 The south side of Dolphin and Union Strait has few distinguishing features, consisting of rolling hills rising gradually to the Melville Hills about 30 miles inland. The country is intersected by many small rivers and, in a number of places, dolomite cliff headlands, 50 to 200 feet (15 to 60 m) high, occur. Mount Barrow, at the SE end of the strait near Cape Krusenstern, has an elevation of about 300 feet (90 m) and is the only outstanding natural mark on this coast.

22 The north side of the strait, between Cape Baring and Simpson Bay, is formed by the coast of **Wollaston Peninsula**; it is a region of rolling hills and ridges rising to elevations of 300 to 400 feet (90 to 120 m) near the coast and a maximum elevation of 1,700 feet (518 m) farther inland. The coast of Victoria Island SE of Simpson Bay in the vicinity of Cache Point Channel is low and almost featureless.

23 **Caution**. — Outlying **shoals** are reported along the Victoria Island coast between Williams Point and Simpson Bay.

Chart 7667

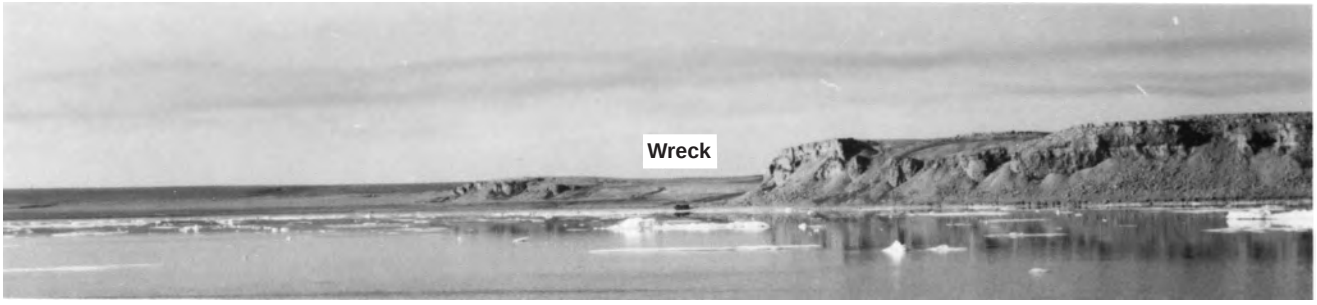
Clifton Point to Cape Young

24 Limestone cliffs are east of Clifton Point *(69°13'N, 118°38'W) (described in Chapter 3)*.

25 Between Clifton Point and the mouth of Inman River, 6 miles SSE, the beaches are gravel or silty mud and gravel.

26 **Inman River** reaches the strait through a low area of gravel and sand flats. About 1 mile inland the river passes

WRECK OF NECHILUK (DISTANT) (1991)



between a prominent bluff, about 45 m high on the east, and a low hill on the west side. A hunter's cabin *(1994)* is on the high ground NW of the west side of the river mouth.

27 **Caution**. — **Shoaling** is occurring off the mouth of Inman River; a **depth** of 4.6 m lies 1 mile offshore.

28 **Wise Point**, 14 miles SE of Inman River, is a slight point backed by a prominent bluff rising to 67 m. The **coast** for 7 miles east of Wise Point is **radar conspicuous**.

29 A **conspicuous wreck** of *Nechiluk* is stranded on the beach above the high water line 3 miles NW of Wise Point *(69°02.2'N, 118°03.6'W)*, at the extreme east end of a conspicuous cliff, and makes a good landmark. It was stranded in 1968 and is still prominent *(1991)*.

30 **Hoppner River** enters the strait 4 miles ESE of Wise Point through a low flood plain through which several small streams flow. The river enters the south end of the flood plain through a narrow gorge. A prominent dolomite cliff, 3 miles east of Hoppner River, rises sheer from the water to 67 m.

31 **Harding River**, 14 miles ESE of Hoppner River, reaches the coast through a deep gorge, 1 mile inland, fronted by a flood plain. The land rises in three distinct steps to higher ground about 2 miles west of the river.

32 **Cape Young** *(68°57'N, 116°59'W)* is the north extremity of a peninsula rising to 15 m about 0.6 mile inland. A sand spit projects NW from the peninsula. The cape is the site of an abandoned *DEW Line* station and an abandoned airstrip. Demolition of the *DEW Line* structures and remediation of the site is scheduled to begin in 2010.

WRECK OF NECHILUK (CLOSER) (1991)

CAPE HAMILTON BEARING 013°— 6 MILES (1991)

33 The Harding River *North Warning System* station is 5 miles south of the tip of Cape Young. A **conspicuous radome** with an aircraft warning **light**, mounted on a **tower**, and two smaller domes at ground level, are located here.

34 **Caution**. — The Harding River *NWS* station is **not manned**. There is an emergency shelter with a telephone and a motion-activated camera but no supplies or services.

35 A former **landing beach** at the Cape Young abandoned *DEW Line* station, composed of well impacted rock and gravel, is about 230 m long and 180 m wide and has a gradient of 1:50. The approaches to the beach from the 5 m contour line have an average gradient 1:31 and the bottom is composed of bedrock and scattered small rocks. Onshore winds are reported to cause a heavy surf. *Northern Transportation Company* barges berthed at the beach only in calm weather; otherwise they anchored offshore and the cargo was lightered ashore. The charted beach markers no longer exist.

36 Two **beacons** with slatwork **daymarks** *(not shown on the chart)*, in line bearing approximately 212°, lead to the landing beach. The condition of these beacons is unknown.

37 A **current** flowing NW at 3 knots has been reported off Cape Young.

38 An unnamed bay offering **anchorage** is entered west of Cape Young and has mid-channel depths varying from 18.3 m off the entrance to 3.7 m near its head. It should afford good shelter from all winds, except between north and west, as it is protected by comparatively high ground on all sides, but nothing is known of the holding ground.

39 **Anchorage** can be obtained 0.5 mile from the landing beach at Cape Young in about 17 m, sand and rock bottom, but with little protection in heavy weather.

40 The approaches to the anchorage off Cape Young are apparently without hazard.

Cape Baring to Williams Point

41 Between Cape Baring *(70°02'N, 117°22'W) (described in Chapter 4)* and **Cape Larsen**, 15 miles south, the SW coast of Victoria Island provides a fair radar target.

42 **Nauyaat** (**Naoyat Cliff**), a line of cliffs on the coast 3 miles SSE of Cape Larsen, has an elevation of 50 m. About 9 miles farther SE, the **Kugaluk River**, which rises in the **Colville Mountains** about 60 miles to the east, enters **Penny Bay** across a low plain.

43 **Bell Island**, in the approaches to Penny Bay, has an elevation of 30 m and is composed of raised beaches. The passage between the north side of Bell Island and a narrow peninsula extending from Victoria Island appears to be obstructed by **shoals**.

44 **Cape Ernest Kendall**, on the south side of Penny Bay, is the southernmost of two small arms of land which form a small bay. An islet lies about 1 mile off the cape.

45 A saddle-back **peak** about 12 miles east of Cape Ernest Kendall is the most **conspicuous** landmark in the vicinity.

46 **Lady Richardson Bay** *(69°32'N, 116°38'W)* is entered between **Singialuk Peninsula** and **Cape Hamilton**. The latter consists of prominent dolomite cliffs, 50 m high, which make a good radar target.

47 **Williams Point**, 5 miles SSE of Cape Hamilton, is a square cliff rising sharply to a prominent peak a short distance inland.

Chart 7776

Cape Young to Chantry Island

48 A river, 8 miles ESE of Cape Young *(68°57'N, 116°59'W, previously described)*, enters the strait through a narrow gorge in the cliffs. Extensive **shoaling** is evident off the mouth of the river with a sounding of 9.8 m about 1 mile offshore.

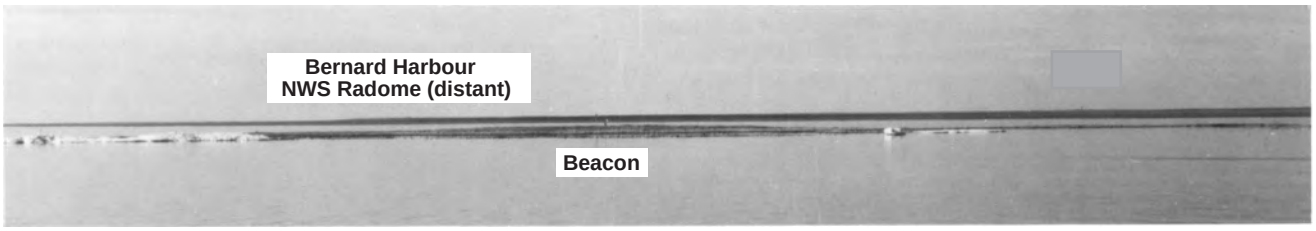
49 Two rivers, 5 miles east, enter the strait across a low gravel bed about 0.5 mile wide. Higher ground east of the river projects about 1 mile NW and slopes gradually down to the water forming the west entrance point of Stapylton Bay.

50 **Stapylton Bay** *(68°52'N, 116°11'W)* affords **anchorage** in about 13 m in a small bay, midway along its NE side, with shelter from easterly winds. *St. Roch* used this anchorage on several occasions.

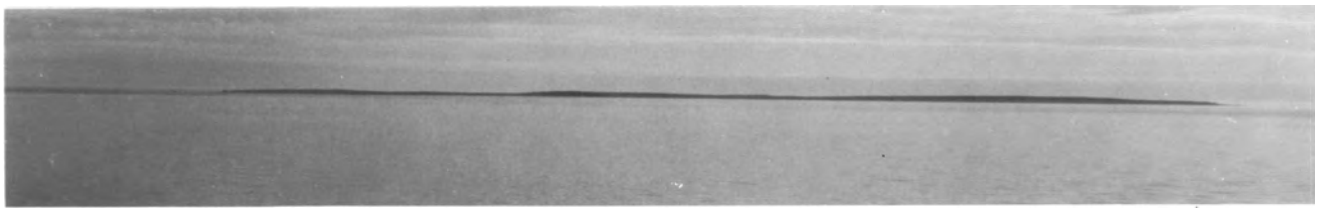
51 **Cape Hope**, the west entrance point of **Souths Bay**, and a flat-topped hill 3.5 miles SE are reported to give good radar responses. Depths in Souths Bay are not known but it is probable that reasonable shelter can be found from east and west winds.

CAPE BEXLEY RACON BEARING 200° (1991)

WALDRON ISLANDS BEACON BEARING 180° (1991)



LISTON ISLAND BEARING 070° — 5 MILES (1991)



52 **Cape Bexley** *(69°01'N, 115°55'W)* is the north extremity of a narrow promontory composed of horizontal beds of limestone. The land rises gradually from the cape; 3 miles ESE it rises steeply.

53 *Cape Bexley* **Racon**, identification *Morse* "Y" (— • — —), operates during the navigation season from a **tower**, 9 m high, with red slatwork **daymarks** and a radar reflector.

54 **Caution**. — **Cape Bexley Shoal**, 3 miles north of Cape Bexley, is a large **shoal area** with a **least depth** of 9.1 m. Give Cape Bexley a berth of at least 5 miles.

55 **Caution**. — **Point Arnhem** *(68°59'N, 115°37'W)*, 7 miles ESE of Cape Bexley, is a low point; **shoal water** is reported to extend some distance from the point.

56 **Cockburn Point**, 14 miles ESE of Point Arnhem, is the NW extremity of a low headland. The coast in this sector is low and flat with numerous boulders. The bay west of Cockburn Point has an isolated hillock on the west side of its entrance that serves as an identification mark.

57 **Waldron Islands** are two small, low islands 4 miles ESE of Cockburn Point.

58 East Waldron Island is marked with a **beacon tower** 9.1 m high, with a red daymark and a radar reflector.

59 The coast between Waldron Islands and Bernard Harbour, 6 miles SE, has several jagged points formed where the sharp narrow ridges of drumlins descend gradually to the sea. Inland there are numerous small ponds and the terrain is generally low and swampy.

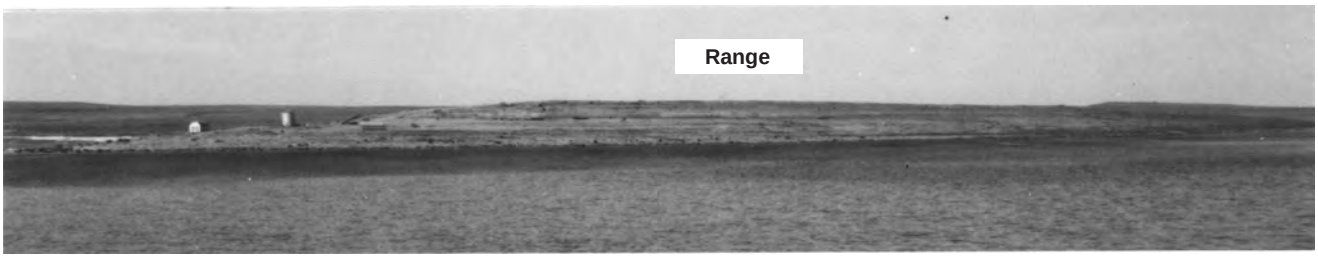
60 **Liston Island**, 9 miles east of Waldron Islands, is composed of stone and gravel and rises to a maximum elevation of about 60 m near its SE end. A group of boulders midway along the SW side of the island make a cliff-like formation; the outer rock of the group, a high pinnacle, is prominent from the SE.

61 **Sutton Island** has a hill at each end rising to about 60 m. The east side of the island is rocky, fairly steep-to and slate coloured. **Banksland Islet** is 0.5 mile NW of Sutton Island.

62 **Anchorage**, suitable for small vessels, can be found in a bay on the east side of Sutton Island in 15.8 m, mud bottom. It affords fair protection from westerly gales. The entrance to the bay is prominent from seaward as the land rises steeply on both sides. The approach to the anchorage is deep, about 24 m, and, so far as is known, there are no off-lying shoals. If significant quantities of ice exist in the strait, the anchorage is liable to be full of ice floes unless the wind has been blowing steadily from the west for a period of 24 to 48 hours.

63 **Harkness Island** has an elevation of about 45 m.

NORTH STAR POINT (1991)



FROM ALASKA POINT, VIEW CCGS NAHIDIK (1991)

Chart 7710

Bernard Harbour

64 **Bernard Harbour** *(68°47'N, 114°45'W)* is entered from north between **Chipman Point**, the west extremity of **Chantry Island**, and **Desbarats Point**, 1.3 miles WNW. It is protected to the east by Chantry Island, which rises to 25 m, and **Cox Island**, and to the north by **Teddy Bear Island** and **Cub Islet**. A **cairn** and two white wooden crosses are near the crest of a ridge on the west end of Teddy Bear Island.

65 The harbour was the site of a trading post and a *DEW Line* station but these were abandoned about 1964. It has been used as a base for a Canadian Arctic expedition and as winter quarters for small vessels. The *DEW Line* buildings have been demolished and the site cleaned up; an abandoned airstrip and 3 **conspicuous buildings**, on the summit of a hill close south of **Bernard Creek**, are all that remain.

66 Bernard Harbour *North Warning System (NWS)* station is 4 miles WSW of the harbour. A white **dome** with an aircraft warning **light** on top, on a **tower**, is the most **conspicuous** structure.

67 **Caution**. — The Bernard Harbour *NWS* station is **not manned**. There is an emergency shelter with a telephone and a motion-activated camera but no supplies or services.

68 The narrow harbour entrances are easily blocked by **ice** with onshore winds. The navigation season is variable, but break-up usually occurs in early July and freeze-up in mid October.

69 The **tidal range** of large tides is 0.8 m. *Bernard Harbour (Index No. 6310)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

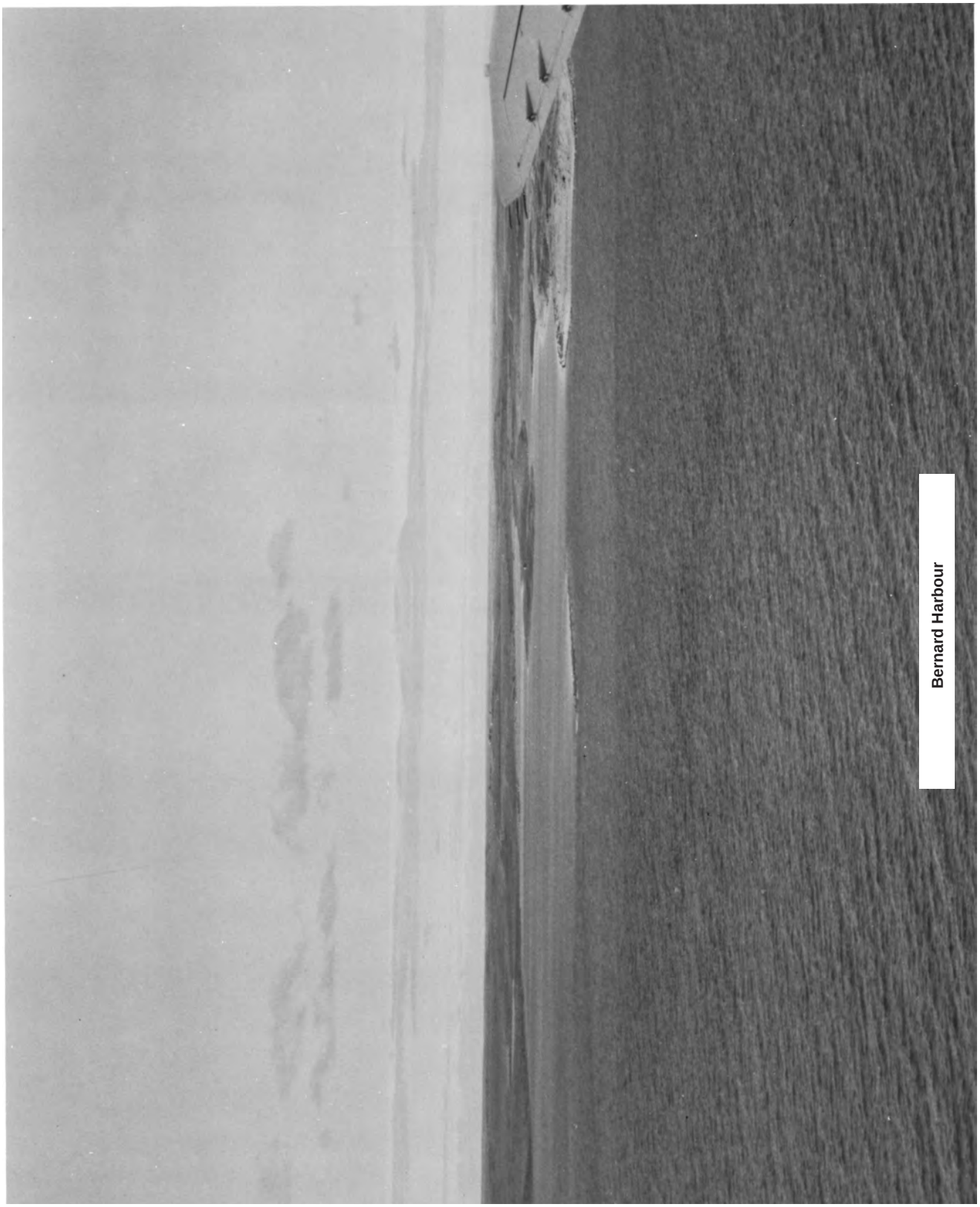
70 **Fog** frequently occurs from July to September.

71 **Alaska Point**, **North Star Point**, **Burwash Point**, **Merritt Point** and **Fuller Point**, all on the west side of the harbour, are extremities of ridges; they rise about 40 m, and are separated by ravines ending in sand and gravel beaches. **Sweeney Island** lies off Burwash Point. A former *RCMP* cabin in poor repair *(1991)* is on Alaska Point; it may provide shelter.

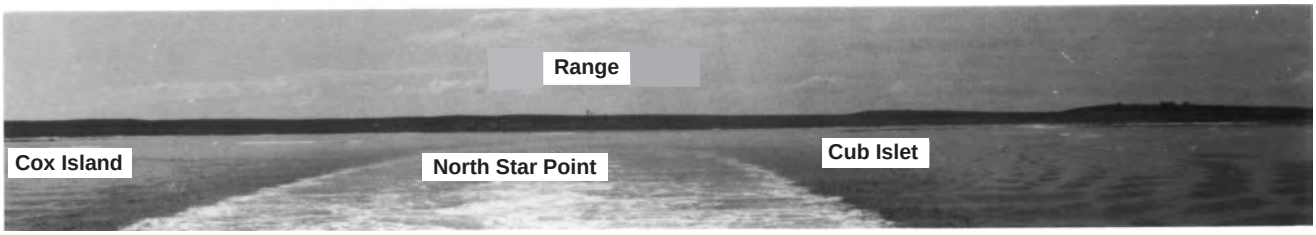
72 **Caution**. — A **wreck**, charted close south of Teddy Bear Island, is submerged with hull and main deck relatively intact *(1991)*.

73 Bernard Harbour **beacon range** is on North Star Point. Two tripod **towers** with standard red and white daymarks, in line bearing 252°, lead into the harbour.

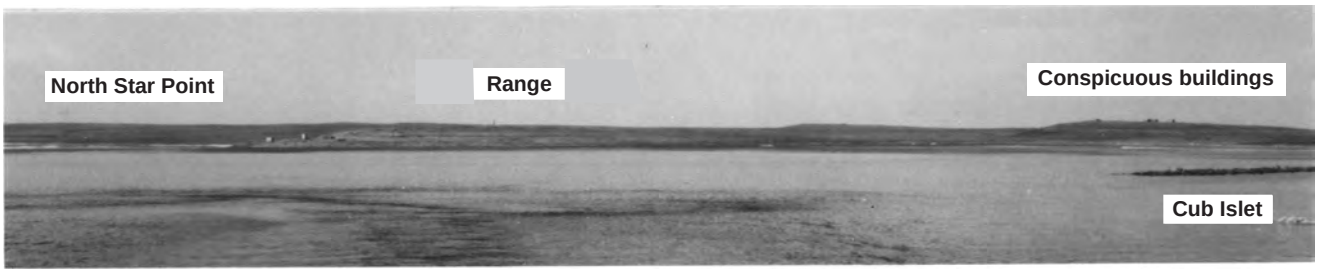
BERNARD HARBOUR (1977)



APPROACHING BERNARD HARBOUR ON RANGE (1991)



BERNARD HARBOUR RANGE IN LINE 250° (1991)



WEST END BERNARD HARBOUR FROM ANCHORAGE (1991)

74 The recommended **anchorage** for large vessels is about 1 mile north of Chipman Point in 18 to 22 m, mud, sand and pebbles.

75 **Anchorage** with only fair holding ground can be obtained 0.8 mile ENE of North Star Point in 11 to 15 m.

76 **Anchorage** for small vessels can be found 0.3 mile east of the mouth of Bernard Creek in 5 m, mud and sand, or 0.2 mile SE of North Star Point in about 11 m.

77 **Caution**. — All anchorages are untenable in **NW gales** that funnel down the valleys.

78 A former **landing beach**, on the south side of North Star Point, is about 230 m long; composed of small rocks, gravel and sand, it is very steep with a gradient of 1:9. Although appearing to be solid, the beach is very soft and suitable for small craft only. From the 5 m contour to the beach the bottom is composed of mud and small rocks and rises sharply with an average gradient of 1:9. The composition and contour of the bottom can be altered from year to year because of ice action.

79 **Fresh water** is available from a lake 0.5 mile NW of the conspicuous buildings.

80 The most useful features for fixing when approaching the harbour are the *NWS* radome tower and Waldron and Liston Islands, with Cox Island and Teddy Bear Island being helpful when near the harbour.

Chart 7776

Point Caen to Ipiolik Point

81 **Point Caen** *(69°18'N, 115°56'W)* is a low, rounded point rising to about 30 m. A river, 3 miles NNW, enters the strait through a narrow canyon. A prominent isolated hill is close SE of the river entrance. A low plain, about 2 miles wide, lies between the prominent hill and Point Caen.

82 **Innirit Point** *(69°16'N, 115°23'W)*, 12 miles ESE of Point Caen, is reported to make a good radar target. **Innirit Hills** lie 3 miles to the WNW.

83 **Qikirtaarjuk Island**, 7 miles east of Innirit Point, is joined to the mainland by drying flats.

84 **Tugghittug Island** is on a **shoal spit** extending from the north shore of **Falaise Bay**. **Tugghittug Point** is the east entrance point of this bay.

85 **Simpson Bay** is a large indentation between Qikirtaarjuk Island and Ipiolik Point, 39 miles SE.

86 **Caution**. — Numerous **shoals** are reported to exist offshore in Simpson Bay; a number of large **shoal patches**, position approximate or existence doubtful, are charted off the north shore, and several **soundings** under 10 m lie off the east shore of the bay.

87 **Havetug Island** is 7 miles east of Qikirtaarjuk Island.

88 **Uguhivig Island** lies 12 miles east of Qikirtaarjuk Island and 0.7 mile south of **Ipiullik Point**.

89 **Caution**. — Between Ipiullik Point and Forsyth Bay, 18 miles ESE, several small, low **islands** lie within 2 miles of the coast and a number of **shoals**, some of doubtful existence, lie up to 4 miles offshore.

90 **7 miles Point** and **Linklater Island** are 6 and 8 miles ESE of Ipiullik Point.

91 **Read Island** *(69°12'N, 113°53'W)* is low, inconspicuous and composed of coarse gravel and mud, supporting little or no vegetation. Several beaches, consisting of small stones and pebbles, lie along the north side of Read Island; **Fossil Point** is the west extremity. An abandoned *Hudson's Bay Company* building at the NE end of the island is not visible from seaward. The channel between Read Island and **Igloolik Island** is suitable only for boats drawing up to 1.2 m.

92 **Caution**. — **Shoals** are believed to extend north from the NE point of Read Island.

93 A long narrow bay indenting the north side of Read Island has a depth of 2.7 m and can be used for **anchorage** by small craft.

94 **Caution**. — The submerged **wreck** of a wooden schooner is close north of the abandoned *Hudson's Bay Company* building *(1978)*.

95 **Anchorage** can be obtained 0.2 mile north of Read Island in 9 m; the bottom is sand and mud, with good holding ground.

96 **Ice** can make the navigation season quite variable from year to year, however, break-up usually occurs about mid July and freeze-up during the third week of October. After break-up, tidal streams carry drift ice back and forth in the anchorage for about a week, after which it is gradually carried out to sea and the anchorage is clear for the remainder of the season.

97 Prevailing **winds** are NW in summer and NE in winter. **Fog** can be expected on seven days in July and five days in August. September and October are usually clear.

98 An **anchorage** between **James Island** and Igloolik Island, east of Read Island, has good holding ground, sand and mud bottom, in a depth of about 13 m. The shelter is fair. It is probable that **shoals** extend west of James Island.

99 **Forsyth Bay** *(69°12'N, 113°38'W)*, entered 2.5 miles east of Read Island, is the mouth of a comparatively large river connected to a chain of lakes extending more than 30 miles to the east.

100 **Caution**. — **Qikertajuak Island**, on the south side of the entrance to Forsyth Bay, is surrounded by **shoal water**.

101 **Anchorage** can be found in a small circular-shaped harbour, north of Qikertajuak Island, that indents the north entrance point of Forsyth Bay for 0.5 mile. MV *Fort Hearne* found shelter from an east gale in September 1988 and reported depths of 3 to 4 m in its outer half with excellent holding ground, mud. Several trappers' cabins are on the west entrance point and one family live here year-round *(1992)*. It is reported that shallow-draught vessels can moor to the gravel beach near the cabins.

102 **Kunivvik Point** is the west extremity of **Knut Lang Island**, which is 6 miles south of Qikertajuak Island.

103 **Caution**. — **Shoal patches** lie off this stretch of coast.

104 **Clouston Bay** is 10 miles south of Forsyth Bay; **Tassijuak River** flows into its head.

105 **Rymer Point** is the site of an abandoned trading post; some trappers' huts are still standing *(1992)* and one family live here year-round.

106 **Landfall Point**, 6.5 miles south of Rymer Point, has an islet 1 mile west of it.

107 **Big Rock Point** *(68°54'N, 113°40'W)* is 2 miles south of Landfall Point; 2 miles further south is **Howard Bay**.

108 **Caution**. — Howard Bay is fronted by **shallow water**; a **shoal spit**, on which the sea breaks, extends from its south entrance point.

109 **Ipiolik Point**, 1 mile south of Howard Bay, marks the south entrance of Simpson Bay.

110 **Cache Point** *(68°39'N, 113°26'W)* was at one time an Inuit sealing camp. The ruins of several huts on the point are not prominent from seaward.

111 *Cache Point* **Racon**, identification Morse "G" (— — •), operates during the navigation season from a **tower**, 9 m high, with a red **daymark**.

112 **Caution**. — **Depths** under 10 m lie up to 1.3 miles offshore between Ipiolik Point and Cache Point. **Soundings** of 5.6 and 4.7 m lie 3 miles south of Ipiolik Point and 2.1 miles NE of Cache Point, respectively.

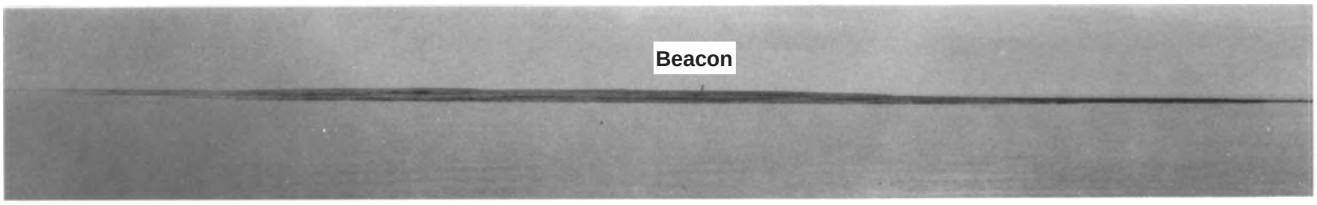
Chart 7710

Lambert Channel

113 **Lambert Island** *(68°38'N, 114°06'W)*, on the east side of Lambert Channel, is 15 m in elevation along most of its length, rising to about 30 m toward its SE end.

114 A tripod **beacon tower** 9.1 m high, with a red daymark and a radar reflector, is near the NW extremity of Lambert Island; it has been picked up at 12 miles.

LAMBERT ISLAND BEACON BEARING 150° (1991)



115 **Camping Island** is connected to the SE end of Lambert Island by a bar, and to **Little Camping Island** to the east, by drying flats.

116 **Caution**. — **Lambert Channel** leads between Lambert and Camping Islands and the west shore of Dolphin and Union Strait. There is an extensive, isolated **shoal bank** in mid-channel between Lambert Point and Camping Island. **Depths** of 0.6 m are at the NW and SE ends, with depths of less than 2 m in-between; **breakers** have been observed. A 4.7 m **shoal**, part of the bank, is 2.5 miles NNE of Cape Lambert; **shoals** and **shallow water** lie close off the mainland side of the channel.

117 Lambert Channel is navigable by small vessels but local knowledge is advised. The water rapidly becomes discoloured in windy weather and the echo sounder will give little warning of shoal areas. Favour the mainland side of the channel where depths of 9 m have been found 1 mile from shore.

118 The west shore of Lambert Channel, except off Cape Lambert, has no prominent features.

119 **Cosens Point** *(68°41'N, 114°27'W)* is the extremity of a drumlin ridge and the northernmost of three similar points in this vicinity. Low islands extend up to 1 mile off these three points.

120 **Cape Lambert**, 12 miles SE of Cosens Point, is low and swampy. Some black **rocks awash**, close off the cape, are **conspicuous**. Dolomite cliffs with elevations of 25 m commence about 1 mile south of the cape.

121 **Caution**. — Several small islands lie close offshore between Cosens Point and Cape Lambert. **Dangerous shoals** lie off an unnamed point 3 miles NW of Cape Lambert.

122 **Caution**. — **Pasley Cove**, entered 6 miles SSE of Cape Lambert, is reported to be **shallow** and to have a **shoal** extending from its east entrance point.

123 **Cape Krusenstern** *(68°24'N, 113°53'W)*, a bold, rocky promontory on the west side of the south entrance to Dolphin and Union Strait, rises from low limestone cliffs to an elevation of about 30 m 1 mile inland.

124 **Mount Barrow**, a roughly circular mound of rock 3 miles SW of Cape Krusenstern, is the only outstanding landmark in the vicinity.

125 **Anchorage** with shelter from north and NW winds can be found in the bay 1.5 miles SSW of Cape Krusenstern. Cliffs mark both sides of the entrance and a mid-channel course will lead to the anchorage. The holding ground is good in 9 to 18 m, hard mud bottom.

126 **Caution**. — **Ivonayak Island**, 5 miles NE of Cape Krusenstern, has **shallow water** extending north and SE of it.

127 **Caution**. — **Shoal depths** of 5.8, 8.8 and 6.7 m lie NW, east and SE, respectively, of Ivonayak Island.

Cache Point Channel

128 **Cache Point Channel** *(68°37'N, 113°31'W)*, the preferred route through Dolphin and Union Strait, leads between Lambert, Camping and Douglas Islands and the SW coast of Victoria Island.

129 **Caution**. — **Depths** under 10 m lie in Cache Point Channel up to 3 miles off Lambert and Camping Islands and up to 4 miles off Little Camping Island. Soundings

MOUNT BARROW BEARING 307° — 6.3 MILES (1991)

LADY FRANKLIN POINT BEARING 107° — 4.7 MILES (1991)

of 4.2 and 4.4 m lie 0.7 mile NNW and NNE of **Bowers Island** *(68°38'N, 113°47'W)*, respectively, and depths of 2.7 and 4.9 m lie 2 miles NE and 2.8 miles ENE, respectively, of Little Camping Island.

130 **Douglas Island**, 8 miles SSE of Little Camping Island, is featureless, about 15 m high, and composed of stone and gravel.

131 **Caution**. — A **shoal depth** of 3.2 m lies 3.4 miles east of Douglas Island.

132 The coast between Cache Point and **Dickens Point**, 4 miles SSE, is low and ridged in an east/west direction. Dickens Point is the southernmost of these sharp, narrow ridges. **Depths** under 10 m lie up to 1.2 miles offshore.

133 A tripod **beacon tower** 9.1 m high, with a red daymark and a radar reflector, is on a point 0.7 mile NNW of Dickens Point.

134 **Austin Bay** is entered between Dickens Point and Lady Franklin Point, 7 miles SSE. The land in the vicinity is low and the shores of the bay are covered with limestone debris and granite boulders.

135 **Anchorage** can be obtained 2 miles from the head of Austin Bay in about 5 m, sand. The holding ground is good but little shelter is afforded from strong east winds by the low hills.

136 **Caution**. — A strong **SW set** can be experienced with the east-going **tidal stream** off the entrance to Austin Bay.

137 **Caution**. — **Depths** under 9 m lie 3 miles NW of Lady Franklin Point, and soundings within Austin Bay indicate generally **shallow water**. Inside the bay, a 2.4-m **shoal sounding** lies 0.5 mile NE of the 3 m high island off the south shore and a 3.4-m deep **shoal** lies 1.4 miles east of the first shoal.

138 **Lady Franklin Point**, low and featureless, is the NW tip of a prominent peninsula at the south end of the east side of Dolphin and Union Strait. An abandoned airstrip, with a **conspicuous aircraft hangar**, and a group of smaller buildings are on the west end of the peninsula. *(A North Warning System installation here burned to the ground in 2000 but is scheduled to be replaced in 2012.)*

139 **Becher Point**, 1 mile south of Lady Franklin Point, is a long narrow spit.

140 A former **landing beach** 0.6 mile ESE of Becher Point is 100 m long and 70 m wide; it is composed of loose gravel and mud and has an average gradient of 1:50. The bottom in the approaches to the beach is fine sand and widely scattered rock patches and rises to the beach with a gradient of about 1:35. A narrow sand bar, with **depths** of 0.9 to 1.2 m, parallels the beach at a distance of about 100 m. A channel 20 m wide has been cut through the sand bar to the landing ramp in the middle of the beach. The average gradient of this channel is 1:28. These works are no longer maintained.

141 **Caution**. — The composition and contour of the bottom can be altered from year to year by **ice action** and the channel described above may no longer exist. If strong onshore winds persist, difficult surf conditions can be encountered and ice congestion may occur.

142 **Anchorage** can be obtained 0.4 mile off the beach in 16 m. *Northern Transportation Company* barges have anchored in about 2.4 m of water with a stern line to shore. Dry cargo can be lightered ashore. The bottom consists of sand and pebbles with occasional boulders.

Coronation Gulf — Bathurst Inlet

General

Charts 7082, 7777, 7778, 7779, 7790, 7791, 7792, 7793

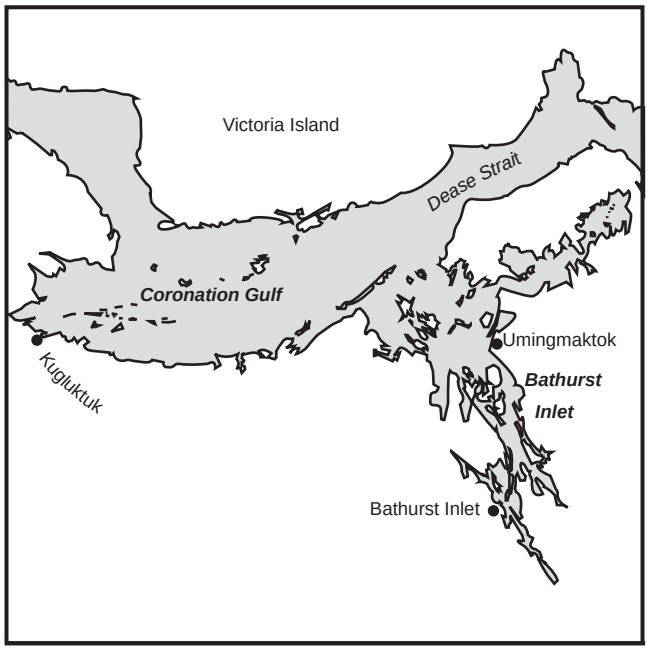
1 This chapter describes the coastal waters of Canada south of Victoria Island, including Coronation Gulf and Bathurst Inlet.

2 *(For general information on coastal routes through the Northwest Passage, see Chapter 5.)*

3 *Northern Canada Vessel Traffic Services (NORDREG) Zone* covers all waters described in this chapter. The primary objective of this system is to assist the master in the safe and expeditious conduct of the vessel by promulgating information on ice conditions, giving advice on routes and providing icebreaker support where available and considered necessary.

4 Traffic clearance requests and reports required by this system shall be addressed to *NORDREG CANADA*. Requests and reports may be passed through any *Canadian Coast Guard Marine Communications and Traffic Services* centre free of charge. All times shall be given in *Co-ordinated Universal Time (UTC)*.

5 *(For further information concerning Vessel Traffic Services in the Arctic, consult Radio Aids to Marine Navigation, available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*



6 **Caution**. — Charts of Coronation Gulf are mostly based on **reconnaissance surveys** and **track soundings**. A shipping corridor along the north side of Coronation Gulf, from Dolphin and Union Strait to Dease Strait, has been surveyed more extensively. Branches of the corridor lead to Kugluktuk and to Bathurst Inlet.

7 The route along the north shore of Coronation Gulf is marked by **beacons**, with radar reflectors, on Sisters Islands, Outpost Islands and on an unnamed island 9 miles south of Outpost Islands. The route between Dolphin and Union Strait and Kugluktuk is marked by **beacons**, with radar reflectors, on Locker Point, Nichols Islands and at Kugluktuk. Kugluktuk has an aeronautical **light** and **aeromarine radiobeacon**.

8 Little information is available regarding **currents** in Coronation Gulf *(1991)*, but they are probably weak and irregular with a general easterly drift except in the narrower channels between the islands. In Edinburgh Channel *(68°28'N, 111°03'W)*, south of Richardson Islands, strong currents flowing mainly eastward have been experienced; close

west of Edinburgh Channel, at the mouth of Johansen Bay, a current of 3 knots has been experienced.

9 The **tidal range** of large tides is 0.3 m. *Kugluktuk (Coppermine) (Index No. 6290)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

10 Restriction of visibility by **fog** occurs on the average of two to three days per month during the navigation season. There will be considerable variation in the occurrence of fog over the length of the route depending on the width and direction of the various straits. In general, the probability for fog is lowest when a strait is oriented at right angles to the most frequent wind directions. Late in the season, restriction of visibility by snow is more probable than by fog.

11 *(For general **weather** conditions in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For present and forecast weather conditions, visit: http://www.weatheroffice.gc.ca/canada_e.html. For **climate** normals and averages for selected locations in this area, visit: http://www.climate.weatheroffice.gc.ca. For maps relating to general weather patterns, visit: http://atlas.nrcan.gc.ca/site/index.html.)*

12 *(For general **ice conditions** in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For detailed information on present and forecast ice conditions in this area, visit: http://ice-glaces.ec.gc.ca.)*

13 The **magnetic compass** is erratic in the areas described by this chapter.

Coronation Gulf

Chart 7082

14 **Coronation Gulf** leads south of Victoria Island from Dolphin and Union Strait to Dease Strait; its eastern boundary is a line joining Murray Point *(68°35'N, 110°20'W)* on Victoria Island and Cape Flinders, 38 miles ESE.

15 Several chains of islands, most with steep cliffs rising from the water on their south sides and gentle slopes on their north sides, extend in an east/west direction through the gulf.

16 The west coast of Coronation Gulf, between Cape Krusenstern and Cape Kendall, is generally low and featureless.

17 The SW corner of the gulf is low, flat and swampy, composed of sediment from the Coppermine, Richardson and Rae Rivers.

18 The south shore between Kugluktuk and Bathurst Inlet, 115 miles east, consists of cliffs or very steep slopes interrupted by numerous river deltas or stretches of more gently rising land; elevations of about 1,000 feet (300 m) are found about 8 miles inland. Most of this area is overlain by a heavy mantle of glacial drift and strewn with innumerable lakes.

19 The coast of Victoria Island east of Lady Franklin Point is low and featureless as far as Richardson Islands, where both the islands and the land close north attain elevations in excess of 500 feet (150 m) and present bold cliffs on their seaward sides.

20 The **Duke of York Archipelago** extends 55 miles through the central part of Coronation Gulf. In general, the islands rise in steep cliffs to moderate elevations on their south sides and slope gradually down to the water on their north sides. Little is known of the depths in or near the Archipelago *(2004)* and care must be exercised when navigating in its vicinity. The gradual slope of the islands toward the north probably continues some distance underwater.

Charts 7777, 7778

Lady Franklin Point to Richardson Islands

21 A small unnamed bay *(68°28'N, 113°10'W)* 6 miles east of Lady Franklin Point *(described in Chapter 5)* was entered by schooner *Ptarmigan* in 1928 and is reported to afford good shelter from all but south winds.

22 **Caution**. — The water is comparatively deep but **shoals** to about 4 m, 0.2 mile from the head of the bay. The bottom is **soft** and does not provide good holding.

23 **Mooshof Point** *(68°28'N, 112°45'W)* is a wide precipitous point 4 miles east of the above-mentioned bay.

24 **Oterkvik Point**, 4 miles east, is the west entrance point of a large unnamed bay.

25 **Miles Islands**, a chain of islands lying up to 4 miles off the south coast of Victoria Island, are composed of dark rock, and typical of the majority of the islands in Coronation Gulf in that they have steep, high cliffs on their south and east sides and are low and flat on their north and west sides. The islands show up well on radar. The largest and southernmost of the **Nauyan Islands** has cliffs on all sides with elevations in excess of 30 m; the other islands of this group do not exceed elevations of 15 m. **Outcast Islands** have elevations in excess of 30 m. **Aiyohok Islands** are **radar conspicuous**.

26 **Caution**. — **Shoals** with 6.4 and 4.5 m over them lie 7.7 and 8.7 miles, respectively, SW of Aiyohok Islands.

27 **Black Berry Islands** *(68°14'N, 113°18'W)* are the westernmost group in the Duke of York Archipelago. Cliffs on most of these islands are about 60 m high. **Hatoayok Island** is the westernmost island of the group. **Nanortut Island**, the largest of the group, attains an elevation of 75 m at its south extremity. **Hokagon Island** is 65 m high at its south end. An islet, 4.5 miles NE of Hokagon Island, is 5 m high. **Kabviukvik Island**, 3.5 miles south of Hokagon Island, has a tiny islet off its south extremity.

SISTERS ISLANDS BEACON BEARING 245° — 0.4 MILE (1991)

28 **Nanukton Island**, 10 miles SE of Black Berry Islands, has an elevation of about 100 m. Several small islets lie up to 4 miles WNW and NW of Nanukton Island; the existence of one of these islets, reported in 1957, is doubtful, but it is possible for uncharted islets to be in this vicinity. **Mangak Island**, to the north, has a chain of islets extending NE from it. **Anchor Island**, one of several islands to the south, has an elevation of about 30 m. An island 1.5 miles SW of Anchor Island has a hill 60 m high on its north side and a 15 m hillock on its south side.

29 **Caution**. — There is a **rock awash**, position approximate, 2.4 miles east of Mangak Island.

30 **Kingak Island**, 10 miles east of Nanukton Island, is dark and rises sharply to an elevation more than 90 m. An islet lies off its NE corner and a group of islands lies 3 miles NW.

31 **Akvitlak Islands**, 2.5 miles north of Kingak Island, are a chain of small islands.

32 **Takhoalok Island**, 1.5 miles NE of Kingak Island, is formed of dark rock and has an elevation of 60 m. An unnamed island, 1 mile ENE of Takhoalok Island, is mainly low with a **conspicuous peak** in its central part. The island 1 mile north can be identified by a **conspicuous** isolated **peak** in its south part; a hill in the north part of this island has steep cliffs facing south and SE. An island, 3.5 miles NNE of Takhoalok Island, rises steeply on all sides; its appearance is very broken and rugged and its highest part is at the east end. A pinnacle rock projects above water off its west end.

Chart 7778

33 The largest island *(68°18'N, 111°40'W)* of the Duke of York Archipelago rises abruptly on its south and east sides to elevations in excess of 150 m and slopes gradually on its north side. The islands lying 2 miles off the east side of the island are comparatively low.

34 The islands north of the large island described above have the same tilted appearance but are lower.

35 **Doak Island** *(68°23'N, 111°27'W)* has an elevation of about 15 m and is **radar conspicuous** on its west side. A smaller island lies 0.3 mile SSW of it.

36 **Caution**. — A **rock**, 2 m high, with a **shoal area** extending north of it is approximately 2.3 miles SE of Doak Island.

37 **Sisters Islands**, 3 miles WNW of Doak Island, consist of three small islands.

38 A tripod **beacon tower** 9.1 m high, with a red daymark and a radar reflector, is on the north islet of Sisters Islands at an elevation of 15 m.

39 **Bate Island** *(68°24'N, 111°18'W)*, the northernmost of **Bate Islands**, provides a good radar response from its north end. A small bay on the west side of Bate Island has depths of 4.9 to 8.2 m in its central part with a sand bottom. A rock 2 m high lies approximately 5 miles SSE of Bate Island.

40 **Caution**. — **Marker Islets** *(68°30'N, 111°23'W)* consist of two islets with a **rock awash** midway between them and a **shoal depth** of 1.6 m 0.15 mile SE of the south islet; the south islet is 30 m high and **radar conspicuous**.

41 **Ross Point** *(68°32'N, 111°10'W)* is a low, rocky ridge projecting from a peninsula on the SW side of Johansen Bay. The peninsula is formed by a long, flat-topped hill, about 100 m high, that rises sharply from a narrow strip of low land bordering it on all sides. Because the low land connecting it to the mainland is not visible from a distance, the peninsula at first appears to be a large, steep-sided island, and may be mistaken for one of the Richardson Islands.

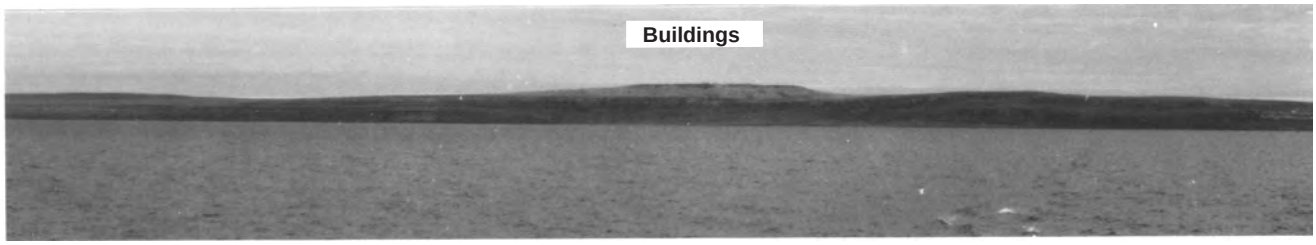
Johansen Bay

42 **Johansen Bay**, entered between Ross Point and an unnamed point 3.5 miles NE, is protected to the SE by Edinburgh Island. The north shore of the bay rises abruptly to a tableland over 120 m high.

43 **Conspicuous buildings** of an abandoned *DEW Line* station are on the north shore 4 miles NNE of Ross Point. An abandoned airstrip is north of the buildings. The Ross Point *DEW Line* structures are scheduled to be demolished by 2013 *(2009)*.

44 Three cabins of an abandoned trading post are on the south entrance point of Nakyoktok River. These cabins were occupied in 1991. Another cabin is on the east side of a river that enters the north side of the east arm of Johansen Bay, 1 mile west of Nakyoktok River.

JOHANSEN BAY ABANDONED DEW LINE STATION BEARING 353° — 3.7 MILES (1991)



JOHANSEN BAY ABANDONED DEW LINE STATION BEARING 310° (1991)

45 A current, setting about 3 knots across the entrance of the bay, has been experienced. Within the bay the current is weak.

46 Other than the indicated depth, nothing is known about the anchorage shown in the eastern arm of Johansen Bay.

47 **Anchorage** can be obtained between 0.5 and 1 mile off the north shore, south of the buildings, in 68 to 73 m.

48 A former **landing beach** south of the buildings is composed of sand and pebbles; it is 185 m long and 15 m wide. The foreshore gradient is 1:10 and a rocky shelf 1 m high has been reported at the water line. The approach to the beach is reported to have a gradient of 1:17 and the bottom is scattered with small boulders.

49 Another beach, 2 miles to the west, is 140 m long. The bottom in its approach is sand and stones with a gradient of about 1:10.

50 **Fresh water** can be obtained from a lake north of the buildings.

51 The south side of the west arm is formed of precipitous cliffs rising to elevations of about 90 m. The west side is formed by flat beds of sandstone which reach the water as low cliffs. The north side rises sharply a short distance inland to a ridge 90 m high, marked by raised beach lines.

52 **Caution**. — Small islands, **submerged rocks** and **shoal water** lie at the head of the arm, which is entered by **Mackenzie Creek** and an unnamed stream.

53 **Nakyoktok River**, at the head of the east arm, is entered through a narrow channel 100 m wide with a reported least depth of 3 m; it leads into a sheltered harbour, suitable for small vessels, with a reported depth of 5 m near the middle. A narrow channel at the east end of the harbour leads to a large lake. The river continues from the north shore of the lake for about 1 mile to the foot of a rapid. The river, navigable by a small boat, can be used as a source of **fresh water**.

Richardson Islands and Approaches

54 **Richardson Islands**, consisting of Edinburgh Island and several smaller islands, lie close offshore between Johansen Bay and Murray Point. These islands, and the adjacent coast, are high, rocky and, in places, precipitous.

55 From seaward, the islands are hard to distinguish from one another as islets and rocks fill the spaces between them. The easternmost of the Richardson Islands, much lower than the other large islands in the group, consists of low, detached hills; it can be identified by a flat-topped peak rising sharply at its NW extremity.

56 **Edinburgh Island** *(68°31'N, 110°52'W)* is quite steep on its south side, with hills rising over 190 m.

57 Edinburgh Island *North Warning System* station is on a bluff near the coast on the south side of the island, 2 miles

EDINBURGH ISLAND BEARING 279° — 6.5 MILES (1991)

EDINBURGH ISLAND NWS RADOME BEARING 030° (1991)

BRABANT BLUFFS (EDINBURGH ISLAND) BEARING 089° — 5.5 MILES (1991)

BRABANT BLUFFS (EDINBURGH ISLAND) BEARING 100° — 3.7 MILES (1991)

ENE of Orkney Point. A **tower**, topped with a white **dome** and an aircraft warning **light**, is the most **conspicuous** structure.

58 **Caution**. — The Edinburgh Island *NWS* station is **not manned**. There is an emergency shelter with a telephone and a motion-activated camera but no supplies or services.

59 **Anchorage** can be found in a small bay, at the SW extremity of Edinburgh Island, entered between **Brabant Bluffs** and **Orkney Point**. The entrance is sheltered by several small islands and shoals and should be approached from the west between Brabant Bluffs and a small **radar-conspicuous island**. A **rock**, existence doubtful, with 2 m or less over it is charted 0.2 mile east of the last mentioned island. The bay is frequently used by vessels sheltering from west winds.

60 **Murray Island**, 1.3 miles SSW of Edinburgh Island, attains elevations of about 150 m near its NE end. **Foellmer Point**, its NE extremity, is fronted by steep cliffs. Two small islands lie close off its west side and an islet 4 m high lies 0.4 mile off its east side.

BRABANT BLUFFS (EDINBURGH ISLAND) BEARING 308° — 5.8 MILES (1991)

FOELLMER POINT (MURRAY ISLAND) BEARING 330° — 4 MILES (1991)

OUTPOST ISLANDS BEACON BEARING 184° — 1.4 MILES (1991)

61 **Caution**. — A **shoal**, existence doubtful, with a depth of 7 m is charted on the south side of Edinburgh Channel 1 mile ESE of Foellmer Point.

62 **Anchorage** that is good but confined has been reported near the SW end of Murray Island; nothing more is known of it.

63 **Edinburgh Channel**, which separates Edinburgh Island from Murray Island, is deep and easily navigated. The cliffs on both sides of the channel give excellent radar returns and night passages have been made without difficulty.

64 Strong **currents**, which appear to set mainly to the east, have been experienced in Edinburgh Channel.

65 **Outpost Islands** *(68°22'N, 110°53'W)* are 5 miles SE of Murray Island.

66 A tripod **beacon tower** 9.1 m high, with a red daymark and a radar reflector, is on the easternmost of Outpost Islands. The beacon provides a good navigation aid for locating Edinburgh Channel when approaching from the east.

67 **Sesqui Islands**, position approximate, 5 miles SE of Outpost Islands, are small and low.

68 A small island, 1.8 miles SSW of Sesqui Islands, is 5 m high.

69 A tripod **beacon tower** 9.1 m high, with a red daymark and a radar reflector, is on a bare rock island 7 miles SW of Sesqui Islands.

70 **Caution**. — A **rock awash**, position approximate and reported in 1971, and a **depth** of 4.6 m, reported in 1979, are 0.6 mile NE and 3 miles SW, respectively, of the beacon. Two islets, position doubtful, are 5 miles WSW of the beacon.

71 **Murray Point** *(68°35'N, 110°20'W)*, the south extremity of a low peninsula, is formed by two isolated hills separated by a narrow gorge. Composed of yellow-brown sandstone overlaid by dolomite and basalt, it rises rather sharply from the water. The west hill, 60 m high, is the higher of the two. A narrow bay between the two hills appears, from **air photos**, to be shallow.

72 The largest of a chain of islands extending SSW from Murray Point is lower than the point. The outermost island, of moderate elevation, rises sharply to a prominent peak.

QIKIRRARNAK BLUFF BEARING 272° — 4.8 MILES (1991)

73 *(The area east of Murray Point is described in Chapter 7.)*

Chart 7777

Cape Krusenstern to Cape Kendall

74 The west shore of Coronation Gulf, between Cape Krusenstern *(68°24'N, 113°53'W) (described in Chapter 5)* and Cape Kendall 36 miles SW, is generally low and featureless.

75 **Locker Point**, 10 miles SSW of Cape Krusenstern, is low and fronted by a drying sandy flat which should be given a wide berth. **Qikirrarnaq Bluff** rises to the NW. A seasonal hunting camp, with several cabins, is at the head of a bay 4 miles east of Locker Point *(1992)*. **Leo Islands** and an unnamed island with an elevation of 13 m lie up to 8 miles SSE and SE of Locker Point.

76 A tripod **beacon tower** 9.1 m high, with red daymarks and a radar reflector, is on Locker Point. The tower has an elevation of 15 m.

77 **Caution**. — A **shoal** with 7.4 m over it is 1.3 miles ENE of Leo Islands.

78 The eastern island of **Deadman Islands** has a small hump near its south extremity. A deep bay, on the north side of the largest island, offers protection from all but north winds.

79 **Caution**. — A **depth** of 8.9 m lies about 0.3 mile off the entrance to the deep bay.

80 **Basil Bay** *(68°15'N, 114°50'W)* is entered between an island 30 m high and **Cape Hearne**, the low sandy extremity of a low limestone promontory. The shores of Basil Bay are low with sandy beaches rising gradually to hills with elevations of 15 to 90 m. On the south side of the bay, about 1.5 miles NW of Cape Hearne, there are a series of cliffs. An abandoned cabin *(1992)* and a stream from which **fresh water** can be obtained are at the head of the bay.

81 **Anchorage** can be obtained in 26 m close to the head of Basil Bay, but the holding ground is poor and the bay is open to SE winds.

82 The **coast** close west and SW of Cape Hearne is flat, grassy and marshy. The mouth of a stream 2 miles west of the cape is barred by a sand bank and marked by two low cliffs of sand.

83 **Klengenberg Bay**, 9 miles west of Cape Hearne, is the site of an Inuit camp; **fresh water** can be obtained from a stream at the head of the bay.

84 Between Klengenberg Bay and Cape Kendall, 8 miles south, the coast is low, rising to hills with elevations of 270 m about 5 miles inland.

Kugluktuk and Approaches

85 **Cape Kendall** *(68°01'N, 115°05'W)* is a bold, rocky promontory with cliffs rising to about 60 m.

86 **Caution**. — A **rock** with less than 2 m over it lies in mid-channel between Cape Kendall and **Kigirktaryuk Island** and two more lie up to 1 mile east of the island; others are reported to exist in this vicinity.

87 **Richardson Bay** is entered between Cape Kendall and Mackenzie Point, 7.5 miles SSW.

88 **Caution**. — It is reported that depths along the north side of Richardson Bay, about 1 mile offshore, are between 25 to 40 m but become **shoal** with **sand banks** extending up to 2 miles from the head of the bay.

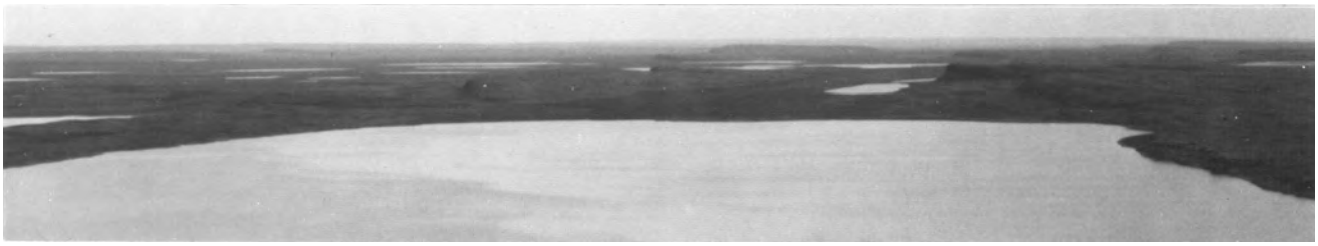
89 The north side of Richardson Bay is composed of basalt cliffs rising to an elevation of about 60 m; the south side is low and sandy with rolling hills inland, some composed of almost white clay. The head of the bay is a low, swampy flat.

90 **Anchorage** has been found 0.3 mile off the north shore of Richardson Bay, 1.5 miles from its head, in depths of 7 to 9 m.

91 **Rae River** enters Richardson Bay through a low, swampy flat; its estuary is encumbered by sand bars and flats. Small craft up to 0.5 m in draught can enter the river fairly easily by various channels, and navigate 10 miles upstream to where the river drops 3 m over a perpendicular fall. Rae River rises in the Melville Hills, about 100 miles NW, and is of some magnitude.

92 **Richardson River**, rising about 65 miles inland, enters Richardson Bay over a low, swampy flat. Its estuary, like that of Rae River, is encumbered by bars and flats; small craft with a maximum draught of 0.5 m can enter the river fairly easily by various channels. The principal entrance, through the westernmost channel, is reported to have depths of 2.4 m at its entrance. It is believed small craft can navigate the river for several miles.

EXPEDITOR COVE (1991)



93 **Mackenzie Point** *(67°54'N, 115°12'W)* is the low extremity of a narrow ridge.

94 **Expeditor Cove**, entered between **Gurling Point** and Mackenzie Point, provides good shelter for medium-sized vessels in almost all weather.

95 **Anchorage** can be found in the NW corner of Expeditor Cove 0.5 mile from the head in 13 to 16 m, mud bottom with good holding.

96 Entrance to Expeditor Cove can be made from the NE between Mackenzie Point and Nichols Islands or from the south between Gurling Point and Blaze Island.

97 **Caution**. — Favour the north side of the cove to avoid the **shoal water** in the southern half.

98 **Nichols Islands** extend almost 5 miles ENE from Gurling Point. **Blaze Island**, the innermost, has a **conspicuous white mark** on its south side. About 20 cabins are on this group of islands.

99 A square skeleton **beacon tower** 6.1 m high, with a red daymark and a radar reflector, is on the outermost of the Nichols Islands.

100 **Seven Mile Island**, the westernmost island of Couper Islands, is highest at its SW end.

101 **Caution**. — A **rock** with 2.3 m over it lies mid-channel NNE of Seven Mile Island. A **shoal area** with a least depth of 1.6 m is 1.8 miles south of Seven Mile Island.

102 Strong **magnetic disturbance** is reported to exist close east of Seven Mile Island.

103 **Coppermine River**, which rises in **Redrock Lake**, about 120 miles south, flows into Coronation Gulf through a very shallow mouth, barred by sand banks and low alluvial islands. Two channels lead through these islands but only the west channel is navigable by craft larger than a canoe, the east channel being obstructed by a stony bar. Small craft can proceed about 9 miles upriver before shallows and rapids are encountered at **Bloody Fall**. A short distance within its mouth the river contracts to about 0.5 mile wide and has steep sloping banks. Inland, the country is generally tundra, rising evenly with scattered lakes and small valleys.

104 **Caution**. — **Depths** in the mouth of Coppermine River vary from year to year. Depths in the buoyed channel are reported to be 1.8 m *(1992)* and are considered typical. The islands off the mouth of the river have created a bank off their north sides which is constantly shifting; caution should be exercised when navigating in the vicinity of this bank.

Kugluktuk

106 The hamlet of **Kugluktuk** *(67°50'N, 115°05'W)*, population 1,302 *(2006)*, is on the west side of the mouth of the Coppermine River. The only access is by sea or air.

107 Satellite **telecommunications**, including internet service, connects Kugluktuk with other northern communities and population centres to the south. Supplies are brought in by barge from Tuktoyaktuk or flown in from Yellowknife. There is a 1,676 by 30-m airstrip, with daily flights from Yellowknife and flights to Cambridge Bay on Mondays, Wednesdays and Fridays.

108 The *Coppermine Inn* and *Enokhok Inn* provide accommodation; there is a *Northern Store* and a *Kugluktuk Co-operative Ltd.* store offering food, clothing and hardware. The Co-op has a post office and an *Automatic Teller Machine (ATM)*. Arts and crafts are for sale here as well; Kugluktuk is known for its soapstone carvings.

109 Kugluktuk has a health centre staffed with registered nurses; other medical professionals visit on a regular basis. There is an air ambulance service to evacuate serious cases. A detachment of *Royal Canadian Mounted Police* provides law enforcement and customs services *(see "Regulations" in Chapter 1 of ARC 400 and visit: http://www.cbsa-asfc.gc.ca)*.

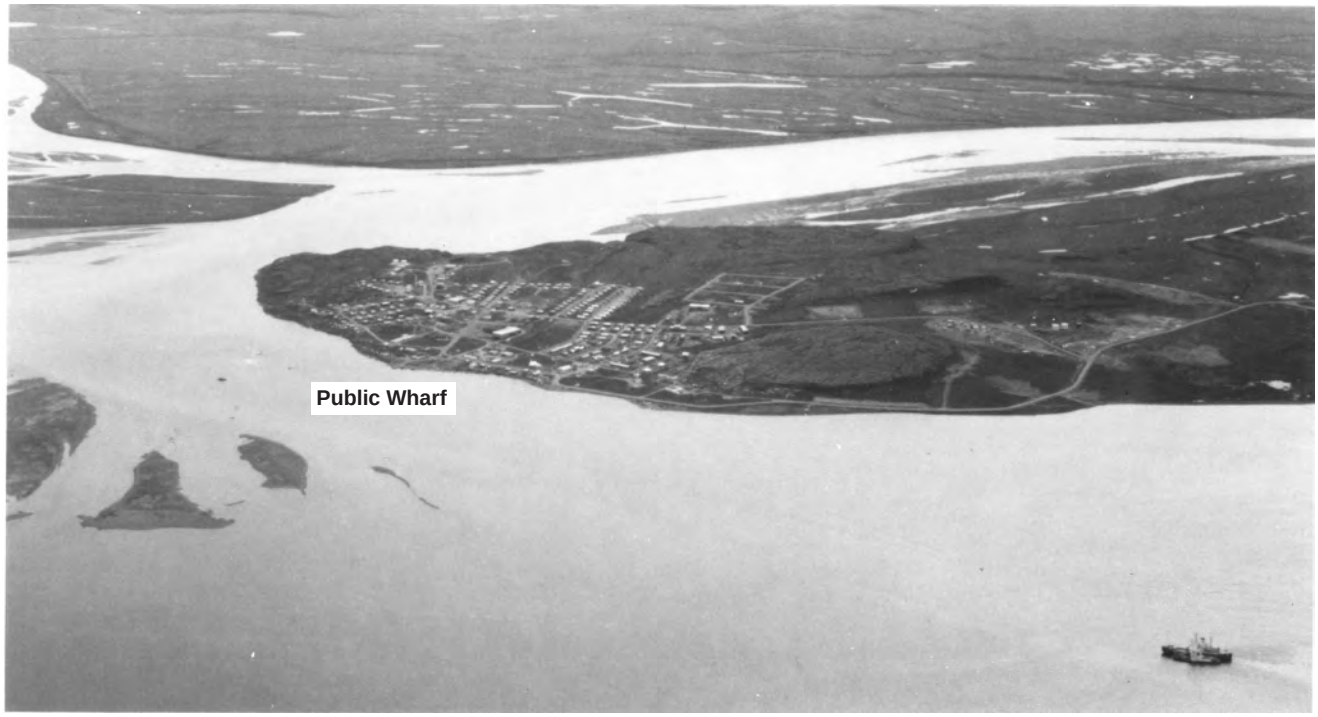
110 Potable water, diesel fuel and gasoline are available; however, there are no commercial facilities for repairs.

111 The average thickness attained by winter shore fast ice at Kugluktuk is 175 cm with a record maximum thickness of 218 cm measured in 1968. Break-up normally begins during the second week of June with clearing toward the end of the third week. Freeze-up in the fall usually occurs early in the second week of October with a solid ice cover about two weeks later. Three to four weeks variation can occur in the timing of break-up and freeze-up.

112 *Kugluktuk (Coppermine) (Index No. 6290)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

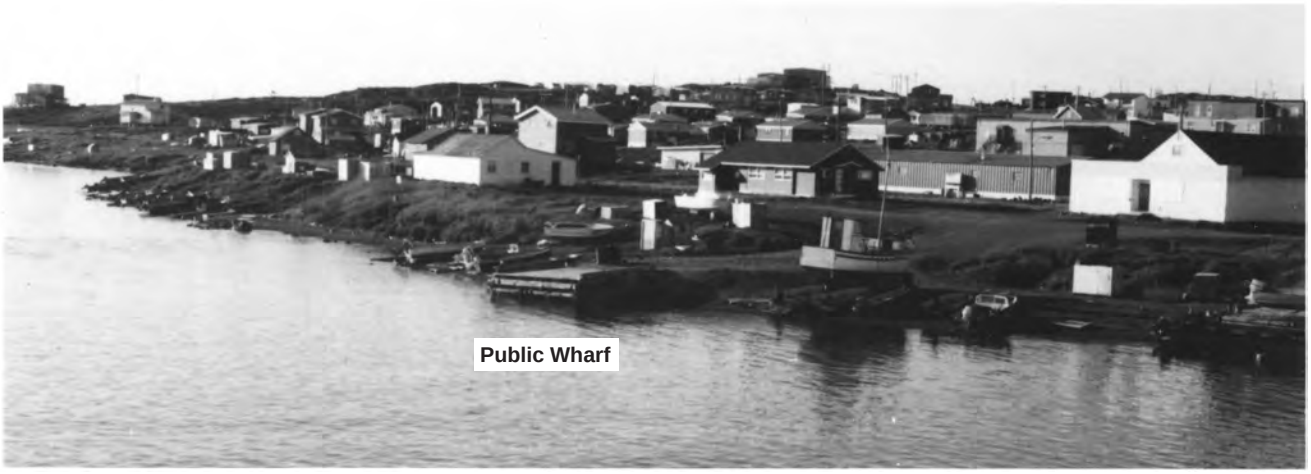
BLOODY FALL (1991)

KUGLUKTUK (1991)



TUG KELLY HALL IN BUOYED CHANNEL. BARGES MOORED AT PUBLIC WHARF. (1991)

KUGLUKTUK PUBLIC WHARF (1991)



113 *(For **climate** normals and averages for Kugluktuk visit: http://www.climate.weatheroffice.ec.gc.ca/climate_normals/index_e.html.)*

114 **Coppermine Hill**, close SW of the hamlet, and the conspicuous white mark on Blaze Island *(previously described)* are useful landmarks when approaching Kugluktuk. Prominent radio masts are in the hamlet and SW of Coppermine Hill at the airport. Three green and several red oil storage tanks are on the NW slope of Coppermine Hill and some white storage tanks are in the hamlet. The church spire is prominent.

115 A tripod **beacon tower** 9.1 m high, with a red daymark and a radar reflector, is 1.5 miles west of the hamlet.

116 An **aeromarine radiobeacon** *(67°49'16"N, 115°05'53"W)* transmits on 372 kHz with identification *Morse* "YCO" (— • — — — • — • — — —).

117 An aeronautical rotating **light** is shown from near the airstrip.

118 **Anchorage** can be obtained in 11 to 18 m in the berth north of the airstrip; this anchorage varies from year to year because of river silt deposits. Currents sweep east and west under the influence of strong winds and care should be taken not to set on the bank where depths of 2 m can be found. The anchorage affords little shelter from winds, which usually blow from NE to NW, or from ice, but the holding ground is good. Should the anchorage become untenable as a result of northerly winds, shelter can be found in the anchor berth 2.8 miles east of Coppermine Hill in 27 m, mud. The anchorage in Expeditor Cove, 3.5 miles NW *(previously described)* would also offer alternative anchorage in northerly winds. Small vessels anchor in an area close south of the sand bars, north of the hamlet.

119 Currents of 2 knots have been experienced at the anchorage.

120 The Public **wharf** is 19 m long and 5 m wide. Shifting sand bars in the approach to this wharf can cause considerable loss of time and difficulty in berthing. Deadman anchors are used for mooring. Small craft are beached on either side of the Public wharf. A 300-m long dog-leg shaped **breakwater** has been constructed parallel to shore, 1 mile west of the public wharf, north of the airstrip. This structure, 160 m offshore, protects a 60-m long by 14-m wide **wharf** used for off-loading barges. A large staging area is adjacent to the wharf.

121 **Caution**. — The water **depth** decreases rapidly from 25 to 2 m with little warning.

COPPERMINE HILL BEARING 203° — 3.8 MILES (1991)

COPPERMINE HILL BEARING 180° — 1.5 MILES (1991)

122 **Historical note**. — The first European known to have visited Kugluktuk (Coppermine) was Samuel Hearne, who was sent out in 1769 to discover where pieces of native copper were coming from. The Inuit had fished and sealed at Kugluktuk for many years but a permanent settlement was not established until 1928 when over half the population of Bernard Harbour, because of an epidemic there, moved to Kugluktuk.

Kugluktuk to Port Epworth

123 **Napaaktoktok River** *(67°49'N, 114°44'W)* enters Coronation Gulf 8 miles east of Kugluktuk through a mouth encumbered by bars and tidal flats. Cliffs are on both sides of the entrance.

124 **Caution**. — **Shoal water** is reported to extend almost 2 miles off the river mouth. Small craft up to 0.5 m in draught can enter the river fairly easily by various channels but its navigable extent is less than 1 mile.

125 Between Kugluktuk and Port Epworth, 72 miles east, the coast is fronted by the following groups of islands lying between 5 and 15 miles offshore: **Couper Islands** *(67°56'N, 114°35'W)* of which the western island is Seven Mile Island *(previously described)*; **Berens Islands**, which are rocky and barren with high cliffs; **Sir Graham Moore Islands**, **Lawford Islands**, and **Home Islands**. **Haodlon Island**, 6 miles north of Lawford Islands, rises on its south side to about 15 m. Several good small-craft harbours exist along the south side of these islands. The best harbour is on the south side of the island 3 miles east of Seven Mile Island.

125.1 **Caution**. — A 2.3-m shoal, rising rapidly from a depth of 111 m when approaching from the south and a depth of 26.7 m when approaching from the north, is 1.3 miles NE of the easternmost of the Lawford Islands group.

126 **Caution**. — A small islet, 1 m high, and a **shoal** with a depth of 9.1 m lie 2.5 miles NNW and 4.7 miles NNE, respectively of the NW island of the Berens Islands.

127 **Caution**. — Several small islands extend up to 5 miles east of Home Islands, and **shoal areas**, reported in 1959 and 1960, lie up to 7 miles NW of the largest of Home Islands. Little is known about these islands *(1997)* or of depths between or north of them. A line of sounding along the south side of the north Berens Islands, obtained by MV *Fort Hearne* in 1990, indicates depths varying between 18 m at the west end and 120 m at the east end.

128 **Caution**. — Several more islands lie between these groups and the south coast of Coronation Gulf; limited soundings indicate a fairly uneven bottom with **depths shoaling** within a few miles of shore.

129 **Onitkok Island** *(67°50'N, 114°33'W)* is the only named island of a group lying close offshore between the mouths of Napaaktoktok and Asiak Rivers.

130 **Asiak River** has bars and sand flats in its entrance and in 1954 was difficult to enter, even by canoe. Rising in a lake complex about 40 miles to the south, it reaches the gulf over a comparatively level sandy coastal plain. In 1910, Captain Josephy Bernard ascended the river some distance in his schooner *Teddy Bear* which had a draught of 1.8 m. Between 1910 and 1920 Bernard wintered his schooner in the mouth of Asiak River on three occasions.

131 **Kugaryuak River** *(67°42'N, 113°18'W)* and **Hanerok River** enter the head of a small bay, with the east side formed by a steep bluff.

WEST END SIR GRAHAM MOORE ISLANDS BEARING 063° — 3.6 MILES (1991)

ISLAND AT 67°46'N, 113°42'W BEARING 263° — 2 MILES (1991)

ONITKOK ISLAND (WEST END) BEARING 152° — 2.2 MILES (1991)

SE END OF ISLAND AT 67°47'N, 114°20'W BEARING 255° — 1.8 MILES (1991)

132 A broad steep-sided valley reaches the gulf in a wide bay 5 miles east of Kugaryuak River. Several islands, some with bluffs on their south sides, front the bay.

Port Epworth

133 **Port Epworth** *(67°43'N, 111°56'W),* an inlet named by Franklin in 1821 after a town in England, has been described as one of the best harbours on the coast. Dark cliffs with long slopes of rock debris at their base rise to 180 m on both sides of the harbour and afford excellent shelter. *St. Roch* wintered here four consecutive winters from 1930–34.

134 **Caution**. — A granite mountain on the east shore of the harbour, known locally as **Kittirigaluk**, is fronted by **shoal water** and an islet.

135 An abandoned *RCMP* post is 3.5 miles inside the inlet on the west side of the east arm. An abandoned *Hudson's*

KUGARYUAK RIVER BEARING 180° — 3.6 MILES (1991)

POINT AT 67°44'N, 112°20.8'W BEARING 220° — 1.8 MILES (1991)

PORT EPWORTH (WEST ENTRANCE POINT) BEARING 150° — 1.4 MILES (1991)

PORT EPWORTH (WEST ENTRANCE POINT) BEARING 180° (1991)

Bay Company post is on the east entrance point of Tree River. The only visible remains of the *RCMP* post are a white picket fence surrounding a grave site on the hill slope. No buildings remain at either site.

136 Due to the comparatively warm fresh water of the Tree River, Port Epworth is usually clear of **ice** fairly early in the season. Local break-up normally begins in the second week of July followed by complete melting about a week later. Drift ice from Coronation Gulf seldom enters the inlet itself and even when it does, it is considerably broken up and tends to drift along the east side. Freeze-up normally begins in the second week of October.

137 The main entrance channel lies west of a high island in the entrance. A narrower channel on the east side of the island has a reported depth of 27 m.

138 **Caution**. — A **shoal patch**, existence doubtful, is 0.25 mile north of the high island.

139 **Anchorage** can be found at the entrance to the west arm in 15 to 16 m close to the beach. Vessels have moored to the beach at this anchorage.

140 A second **anchorage**, reported to be the better of the two, is in the east arm, 1 mile north of Tree River mouth, in 20 to 35 m. The bottom is mud and holding is excellent.

PORT EPWORTH (EAST ENTRANCE POINT) BEARING 200° — 2.8 MILES (1991)

PORT EPWORTH (EAST ENTRANCE POINT) BEARING 200° — 2.8 MILES (1991)

INSIDE PORT EPWORTH, ENTRANCE TO EAST ARM (1991)

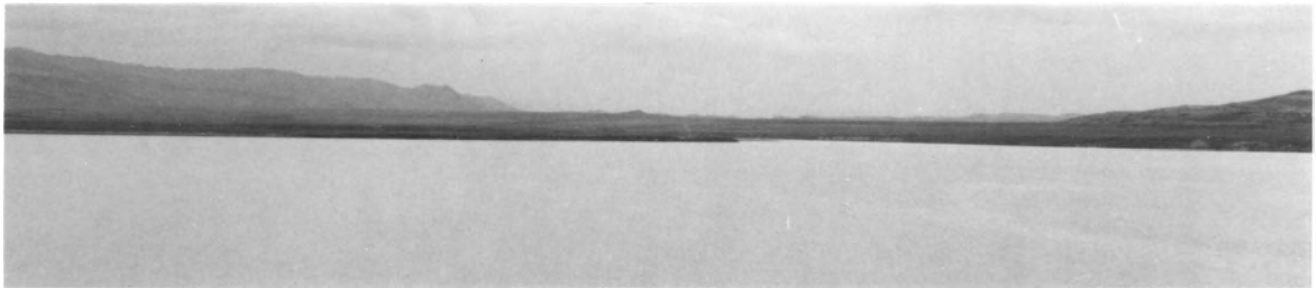
INSIDE PORT EPWORTH, ENTRANCE TO WEST ARM (1991)

KITTIRIGALUK FROM WEST ARM, PORT EPWORTH (1991)

ANCHORAGE IN WEST ARM PORT EPWORTH, VIEW OF WEST SHORE (1991)

ANCHORAGE IN WEST ARM PORT EPWORTH, VIEW OF RIVER AT HEAD (1991)

ANCHORAGE IN EAST ARM, VIEW OF TREE RIVER (1991)



141 **Caution**. — In the approach to the east arm there is a **shoal depth** of 2.3 m, and **submerged rocks**, positions doubtful, lie off the west entrance point and in the mouth of the Tree River. Supply vessels drawing about 4.6 m are reported to have **grounded** or touched bottom on several occasions when approaching or leaving the anchorage in the east arm. From information available, it appears the best place to land supplies is at the anchorage off the former *RCMP* post, as difficulty has been encountered due to **shallow water** when lightering supplies ashore off the former trading post.

142 **Caution**. — **Shallow water** exists along the shores of the western entrance to the inlet. If anchorage in the east arm is selected, take care when approaching it to avoid the submerged **rocks** lying close off the west entrance point.

143 **Tree River**, which enters the head of the east arm of Port Epworth, rises about 60 miles SSW in a maze of lakes. The river has a considerable volume of water and is navigable by small craft as far as rapids about 5 miles upstream. **Fresh water** is easily obtained from this river. A sport fishing lodge, which operates in July

and August, and an abandoned airstrip are at the foot of the rapids 5 miles upstream. A summer camp, occupied by guides employed by the lodge, is 2 miles inside the river mouth.

Chart 7778

Port Epworth to Bathurst Inlet

144 **Caution**. — Between Port Epworth *(67°43'N, 111°56'W)* and Cape Barrow, 44 miles ENE, the only information on **depths** is from a few lines of track soundings; they indicate an uneven bottom.

145 **Caution**. — A **shoal**, position approximate and reported in 1976, with 13 m over it, lies about 5 miles NW of Hepburn Island *(67°54'N, 110°56'W)*.

146 A large island, 4 miles east of Port Epworth, is separated from shore by a narrow channel. The bay on the south side of the island is reported to be deep and protected by impressive bluffs on all sides. A beach of fine gravel, suitable for mooring a small vessel, is near the SE corner of the island. **Fresh water** can be obtained from several creeks on the mainland south of the island.

147 **Caution**. — The narrow channel between the large island and shore was reported by MV *Fort Hearne* to be navigable in a least depth of 5 m *(1991)*; it is also reported to contain several dangerous **rocks** and **shoals**.

148 The large island 8 miles east of Port Epworth has a 4 m high **cairn** on its north extremity. It was erected by Dease and Simpson in 1839 and is reported to be visible from about 1 mile offshore and completely intact *(1991)*. A small boat can pass between the mainland and this island although the channel is narrow and depths unknown.

149 **Grays Bay** *(67°49'N, 110°57'W)* is formed, on its west side, by a peninsula nearly separated from the mainland by a chain of lakes and inlets. **Anialik River** enters the south side of the bay through a gap in the hills.

150 **Caution**. — Grays Bay contains several above- and below-water **rocks**, and several small islands and islets lie off its south side.

151 Between Grays Bay and Cape Barrow the **coast** is low and grassy for about 1 mile.

152 **Hepburn Island** rises in steep cliffs to about 120 m on its SE side, but rises gradually from the sea on its NW side. Between Hepburn Island and Jameson Islands, 9 miles ENE, there is a chain of unnamed islands and islets.

153 A narrow inlet in the SE side of Hepburn Island leads to a small, almost landlocked basin with 9 m of water close to shore. The entrance channel is very narrow with a depth of 5.5 m. The harbour offers protection from any weather and is reported to make perfect winter quarters. Vessels can moor to the beach if necessary.

154 A narrow, shallow channel at the head of the harbour leads into a lake-like inlet that extends to the north side of the island. A narrow but fairly high ridge across the north end of the inlet prevents the island from being cut into two.

155 In 1945, the only signs of early inhabitants were the remains of houses, partially constructed of bone, which were caved in and covered with soil. MV *Fort Hearne* visited this harbour every year between 1988-1992 and reports there is no longer any sign of human habitation.

156 A river, 6 miles NE of Anialik River, has bars obstructing its mouth with depths over them reported to be 0.6 m *(1982)*. Small craft can enter and proceed upstream about 6 miles to the foot of a waterfall. Wildlife abound in the area and the falls are reported to provide excellent fishing.

157 **Wentzel River**,12 miles NE of the Anialik River, enters the gulf through a narrow opening barely visible from close offshore. A bar at the river mouth is reported *(1982)* to have about 1 m over it with depths of 2 to 3 m just inside. It is reported that a small vessel can moor alongside a steep sand beach on the west bank. Small craft can ascend the river for about 5 miles to the foot of a rapid.

158 **Inman Harbour** *(67°58'N, 110°12'W)* is reported to have depths of 50 to 80 m in the approaches, 50 m in mid-channel at the entrance, and depths inside vary from 15 to 40 m. The shoreline shelves steeply and is fronted by cliffs and steep bluffs. The topography creates a funnel effect with winds blowing either up or down the harbour; sudden wind shifts of 180° are common. A number of creeks enter the harbour; the best is at the head of the SW arm where **fresh water** is easily obtained.

Bathurst Inlet and Approaches

Chart 7082

159 **Bathurst Inlet**, entered between Cape Barrow *(68°01'N, 110°06'W)* and Cape Flinders, 32 miles ENE, penetrates the mainland for 120 miles. It has irregular shores encumbered with numerous islands, islets and rocks.

160 The land surrounding the inlet consists of rolling, hilly plateaux dissected by deep river valleys. Elevations of about 1,500 feet (450 m) are attained on its west side, while the hills on the east side rarely exceed 1,000 feet (300 m).

161 Melville Sound, with Elu Inlet at its head, extends from the east side of Bathurst Inlet.

162 Consolidated first-year **ice** covers Bathurst Inlet from October to June. Deterioration and cracking of the ice occurs in June when puddles begin to cover the surface. Break-up usually occurs during the second and third week of July but can be delayed until the first two weeks of August. Thereafter, open water prevails until thin new ice forms about mid October, and the ice surface consolidates in late October.

163 The **tidal range** in Bathurst Inlet is probably little more than 0.3 m and contributes little to the currents in the inlet. Several rivers of considerable length, which drain a large land area, flow into the inlet; their outflow toward Coronation Gulf produces a predominantly northward-setting **current**. In some of the narrower channels, such as those through the Barry Islands, the flow sometimes attains 5 knots. It is reported the narrow channel separating North Quadyuk Island from Red Islands does not freeze over at all some years due to the strength of the current.

Charts 7778, 7779, 7790, 7791, 7792, 7793

164 A **shipping corridor** has been sounded south from Dease Strait between Entry Islands and Wilmot Islands into Bathurst Inlet. The corridor continues south from between Breakwater Islands and Fishers Island to the mouth of Western River, at the south end of the inlet. A secondary corridor, sounded from NW of Fisher Island, extends NE to Melville Sound.

165 **Caution**. — Mariners without local knowledge should use the corridors, as they are surveyed more accurately and completely than the surrounding areas. Soundings in areas outside the corridors are based on **reconnaissance surveys** and **track soundings**.

166 **Caution**. — Several shoals lie in the approaches to Bathurst Inlet. A **shoal** with a depth of 7 m, position approximate and reported in 1984, lies 9 miles NW of Jameson Islands in 68°13'N, 110°15'W. A **shoal** with a depth of 17 m, position approximate and reported in 1985, lies 9 miles NW of Jameson Islands in 68°15'N, 110°10'W. A **shoal** with a depth of 5 m, position approximate and reported in 1989, lies in the passage 8 miles WNW of Cape Barrow in 68°03'N, 110°27'W. **Shoals**, reported in 1959, lie NE of the NE island of Jameson Islands and a **shoal**, **awash**, position approximate, lies south of Jameson Islands in 68°08'N, 109°40'W. A **shoal** *(shown on Chart 7082)* lies about 2 miles NNW of the largest island of Wilmot Islands. There is evidence that **shallow water** extends SW from this shoal along the north side of Wilmot Islands. If passing between Wilmot Islands and Jameson Islands, to the NW, favour the Jameson Islands side of the passage.

167 **Caution**. — **Shoals** north of Jameson Islands found during the 1994 survey are 7.5 m in 68°19'N, 110°42'W; 9.7 m in 68°21'N, 110°35'W and 11.8 m in 68°22'N, 110°36'W.

168 Prior to the establishment of the shipping corridor, the most-used route into Bathurst Inlet led between Entry Islands and Kent Peninsula, then about 1 mile west of Wedge Island, Triple Islands and Patsy Klengenberg Island. Piercey Islands were passed on either side at a distance off of about 1 mile. In heavy ice concentrations, vessels could pass east of Wedge Island and Triple Islands in a least known depth of 14.6 m.

169 The sounded track between the two large Jameson Islands and the track between Cape Barrow and Jameson Islands, both appear from sparse soundings to offer good deep water, but note the 5 m depth, position approximate and reported in 1989, in the passage 8 miles WNW of Cape Barrow. If entering by this route note that a **ridge** probably exists between Chapman Islands and Galena Island and note the **irregular depths** in the narrow channel between Chapman Islands and Stockport Islands.

Chart 7778

Bathurst Inlet — West Entrance

170 **Jameson Islands**, across the west entrance, rise sharply to moderate heights on their south sides and slope gradually on their north sides. Several bays along the south side of the islands offer shelter from north winds; the best is the harbour in 68°12'N, 109°41'W.

171 **Cape Barrow** *(68°01'N, 110°06'W)*, a bold headland of red and dark granite, rises sheer from the sea in many places to a maximum elevation of about 90 m.

172 Two good **small-craft harbours** are at the tip of Cape Barrow. The east harbour, reported to be the better one, is roughly circular in shape and about 300 m in diameter. On its east side is a good but steep sandy beach with a fresh water lake behind it. While "ample water" is reported, small craft are advised to enter from the west, keeping about 50 m from shore to avoid a **rock awash** about 150 m off the entrance.

173 **Caution**. — The west harbour at Cape Barrow is larger but suspected of being **shoal** in places.

174 **Desbarats Inlet**, entered 4.5 miles SE of Cape Barrow and its unnamed extension, an inlet that extends

JAMESON ISLANDS — SW END OF ISLAND 68°10'N, 109°49'W BEARING 117° — 2 MILES (1991)

GALENA ISLAND BEARING 182° — 8 MILES (1991)

NE END OF LEWES ISLAND BEARING 345° — 7.2 MILES (1991)

from the NW coast, almost sever Cape Barrow from the mainland. A low isthmus, suitable for a portage, separates the two inlets.

175 **Caution**. — There is a **shoal depth** of 10.4 m in mid-channel 6 miles ENE of Desbarats Inlet.

176 **Detention Harbour** is entered 4 miles south of Desbarats Inlet; the coast between the inlet and harbour consists of rough granite hills which rise sharply to about 150 m. **Galena Point**, the east entrance point, is fringed with islands and rocks. A large island in the middle of the harbour divides the entrance in two. Small islets lie in both entrance channels. The best entrance is reported to be on the west side of the island with a **least depth** of 5 m.

177 **Caution**. — The east channel is reported to be very narrow with a **depth** of only 1 m.

178 **Anchorage** for small craft is reported to be excellent in the inner part of Detention Harbour. The bottom is sand, with reported depths of 15 to 30 m. It is sheltered from all winds. **Fresh water** can be obtained from several creeks, the largest is at the south end near the base of some steep hills; it is possible to moor to a steep gravel beach while taking on water.

179 **Galena Island** *(67°53'N, 109°40'W)*, elevation 90 m, is the largest of a group of islands and islets off the NW entrance point of **Daniel Moore Bay**.

180 A bare granite plateau on the west side of Daniel Moore Bay attains an elevation of 180 m. An Inuit family live *(1992)* near the mouth of a creek at the foot of the plateau.

181 **Caution**. — There is a **shoal depth** of 9 m in mid-channel 4.4 miles ESE of Galena Island.

182 **Anchorage**, suitable for small vessels, can be found in the SW corner of the inner part of Daniel Moore Bay, at the foot of the scarp. South of the anchorage, a narrow channel leads to a small lake fed by several streams.

183 **Caution**. — There is a **shoal depth** of 14.6 m 6 miles ESE of Galena Island.

Chart 7791

184 **Chapman Islands** *(67°55'N, 109°15'W)*, an extensive group, are generally low and rocky with very little vegetation. **Lewes Island**, the largest and only named island of the group, has an elevation in excess of 90 m.

185 **Caution**. — The **channels** among the Chapman Islands are reported to be extremely **shallow**.

186 A narrow ridge of rock with a maximum elevation of about 90 m extends NNE/SSW through the centre of the Chapman Islands. The central islands of the Wilmot Islands group are probably an extension of this ridge to the NNE.

187 **Caution**. — It is probable that the above-mentioned feature extends SW toward Galena Island as an **underwater ridge**.

188 **Caution**. — Track soundings indicate a very irregular bottom, with **depths** as little as 8.3 m, 5 miles SSE of Galena Island.

189 **Caution**. — **Stockport Islands** are separated from the south end of Chapman Islands by a channel with irregular depths, the charted **soundings** varying from 2.6 to 78 m. The largest island of the Stockport Islands group, **Marcet Island**, has an elevation in excess of 90 m. The **channels** between the various islands of the group are reported to be extremely **shallow**.

190 **Kater Point** *(67°43'N, 109°01'W)* is a high bluff.

191 **Snug Harbour**, reported to be a good, well protected harbour for shallow-draught vessels, is entered from the east through a narrow channel between Kater Point and the southernmost island of Stockport Islands.

192 **Caution**. — A **depth** of 5.5 m is reported to exist in the entrance to Snug Harbour.

Chart 7790

Bathurst Inlet — East Entrance

193 **Cape Flinders** *(68°16'N, 108°48'W)*, the east entrance point of Bathurst Inlet and the west extremity of Kent Peninsula, rises to 60 m 1 mile inland. The **coast** 1.5 miles SE of the cape is **radar conspicuous**.

194 **Entry Islands**, 6.5 miles NNW of Cape Flinders, and a group of smaller unnamed islands, islets and rocks 2 miles south of Entry Islands, have a maximum elevation of 30 m.

Chart 7791

195 **Wilmot Islands**, consisting of two large and several small islands interspersed with numerous rocks, lie across the east entrance of Bathurst Inlet between 5 and 13 miles SW of Cape Flinders. Several buildings of an abandoned trading post are located near the NE extremity of the largest island *(1992)*. A backbone of high ground, probably a continuation of a similar formation in the Chapman Islands, trends NNE through the islands; they have been described as "high, haystack-looking".

196 **Wedge Island** is a small rocky island, 1.5 miles west of Cape Flinders.

197 **Caution**. — Two **shoal depths** lie 1.1 miles south of Wedge Island. The shallowest depth is a **rock** with a depth of 4.6 m, the other is a depth of 7.6 m.

198 **Triple Islands**, consisting of one main island and several rocky islets, a small group of unnamed islands, and **Patsy Klengenberg Island**, which is small and low, lie near mid-channel up to 6 miles south of Cape Flinders.

199 **Caution**. — A **rock** with a depth of 3.2 m is 0.5 mile SW of Triple Islands.

200 **Caution**. — A **shoal depth** of 0.7 m is on the west side of the shipping corridor west of Patsy Klengenberg Island.

201 **Riley Bay**, 3 miles SE of Cape Flinders, is reported to be a suitable anchorage for small craft only. The SE and SW sides of the bay are formed by **Porden Islands**.

202 *(The coast east of Riley Bay and Cockburn Islands to the SSE are described later in this chapter under Melville Sound.)*

203 Commencing 2 miles west of Patsy Klengenberg Island, an unnamed chain of islands extends 5.5 miles south. The NW island of this chain is conspicuous. **Piercey Islands** *(68°00'N, 108°47'W)* are 10 miles south of Patsy Klengenberg Island.

204 **Breakwater Islands** *(67°55'N, 108°30'W)* are steep on their south and east sides and separated by a narrow channel navigable only by small craft.

205 **Caution**. — **Shoal water** and above-water rocks extend south and SW from the south extremity of the west island. A **shoal depth** of 12.9 m lies 1.2 miles NNW of the NE end of the islands.

206 **Walrus Island**, 2 miles SSW of the west island of Breakwater Islands, is 46 m high and **radar conspicuous**. A chain of small islands and islets extends 5 miles SSW of the island.

207 **Caution**. — A 5.8-m **shoal** is 0.6 mile ENE of Walrus Island and an area of **breakers** lies 0.8 mile SSW of the same island.

208 **Everitt Point**, which forms the west side of Baychimo Harbour, is composed of bare, rounded granite hills. An island lies close SSE of it. The coast between Everitt Point and Buchan Bay, 11 miles north, has cliffs along most of its length. *(Buchan Bay and Fishers Island are described later in this chapter under Melville Sound.)*

209 **Caution**. — A small island with above- and below-water **rocks** in its vicinity is close offshore about 2 miles NNW of Everitt Point.

210 **Ekalulia Island**, the largest island of the Barry Islands, attains a maximum elevation of 300 m in its central part. The south half of the island has cliffs rising sharply to 60 m.

211 **Baychimo Harbour** *(67°42'N, 107°56'W)* is a good, well sheltered harbour and site of the unorganized settlement of **Umingmaktok**. Survey ship *Richardson* found excellent shelter here from a NW gale and reported the harbour would

WALRUS ISLAND BEARING 115° — 2.4 MILES (1991)

NORTH POINT OF EKALULIA ISLAND BEARING 108° — 3.8 MILES (1991)

BAYCHIMO HARBOUR — ISLAND SSE OF EVERITT POINT BEARING 340° — 1.8 MILES (1991)

UMINGMAKTOK (1991)

appear to provide protection from any weather. The shores of the west side of the harbour, and of the island off it, rise fairly steep to bare, rounded, granite hills; the north and east sides are low but backed by high hills. **Oil tanks**, visible from seaward, are on the north point of the above-described island and a **landing beach** for barges is on the east shore of the island.

212 **Anchorage** can be obtained in the NW part of the harbour in about 27 m, fine clay and mud.

213 *Northern Transportation Company* barges are berthed bow-to abreast the oil tanks to discharge fuel. Dry stores are lightered ashore. The landing beach is sand with vegetation but there are no deadman anchors *(1989)*, therefore tugs must hold the barge alongside.

214 **Historical note**. — Umingmaktok, a long time Inuit seasonal camp, became a permanent settlement in 1964 when a *Hudson's Bay Company* post was moved here from Bathurst Inlet. The post was taken over by the Northwest Territories Government in 1968 and continued to function as a traditional Inuit camp. Umingmaktok became part of Nunavut in 1999, but only as an outpost camp. The population, in 2001, was only 5. In 2006, *Statistics Canada* census figures showed no permanent inhabitants.

215 The outpost camp, with a gravel airstrip close north, is in the NE corner of the harbour. The camp is obscured by a rock bluff when approaching from south. A small cluster of houses is on the west side of the harbour, 1.5 miles NNE of Everitt Point.

216 The Government of Nunavut provides only a limited amount of heating fuel to the camp. Satellite telephone, only, is available. Contact *Cambridge Bay Hunters and Trappers Organization* or *Bathurst Inlet Lodge* to ascertain what, if any, supplies are available at Umingmaktok.

UMINGMAKTOK (1991)

NE END OF CHEERE ISLANDS BEARING 175° — 3 MILES (1991)

Arctic Sound and Approaches

217 **Cheere Islands** *(67°42'N, 108°53'W)*, in the approaches to **Arctic Sound**, are reported to have a good small-craft harbour in the SW tip of the west island.

218 **Wollaston Point**, the east entrance point of Arctic Sound and the north extremity of **Banks Peninsula**, is barren, rocky and rises to 30 m about 0.5 mile inland.

219 The east side of Arctic Sound is generally rocky with elevations of about 180 m. The west side of the sound, between Cheere Islands and a low sandy point 7 miles south, is precipitous and rocky rising to over 150 m; south of this point the land near the coast is low and grassy.

220 **Hood River** enters the west side of the sound, near its head, through an estuary filled with low sand bars. It discharges a considerable volume of water into Arctic Sound. The deepest water found in 1915 over the bars was 1 m; the main channel inside the bars was reported to have 3 m of water. There are rapids 7 miles within the entrance of the river. **James River** and **Booth River** are tributaries about 15 and 35 miles, respectively, upstream from the mouth of Hood River.

221 **Baillie Bay**, at the head of Arctic Sound, has an abandoned Inuit campsite and an astronomical monument on its west side, about 3 miles south of the mouth of Hood River. The south side of Baillie Bay is a low, grassy plain.

Bathurst Inlet — Inner Part

222 **Barry Islands** are an extensive group of five large and several smaller islands, including Ekalulia Island *(previously described)*, across the entrance of the inner part of Bathurst Inlet, south of Wollaston and Everitt Points. Although many deep, sheltered and almost landlocked harbours are reported to exist among Barry Islands, nothing is known of them.

223 **Iglorua Island** *(67°37'N, 108°24'W)*, 4.5 miles east of Wollaston Point, has cliffs along its east side reaching 180 m in two places. Several islets lie off its east side.

224 **Algak Island** has a striking horn-shaped hill at its north end, rising to about 150 m, and makes a useful landmark. A wide, low, grassy valley runs down the middle of the island between hills about 60 m high. An unnamed island east of Algak Island attains an elevation of about 120 m.

225 **Kanuyak Island**, the southernmost of the Barry Islands, is hilly and rises in places to about 180 m. The channel to the NW, between Kanuyak and Ekalulia Islands, is reported to have a depth of about 3 m.

226 **Shoe Island**, an islet 7 miles SSE of Baychimo Harbour, is shaped like a shoe and fairly flat on its SE side.

227 **Caution**. — A **shoal depth** of 19.7 m is 0.8 mile NNW of Shoe Island.

228 **Boulder Falls** discharge into a small cove 15.5 miles SSE of Baychimo Harbour.

HORN SHAPED HILL ON ALGAK ISLAND BEARING 206° — 9.2 MILES (1991)

229 **Rideout Island** *(67°17'N, 107°39'W)* and a larger island SSE of it are very hilly, reaching elevations of about 180 and 210 m, respectively. The shores of the larger island are steep cliffs. A chain of low islets fringes the west side of Rideout Island.

230 A square skeleton **beacon tower** 6.1 m high, with red daymarks and a radar reflector, is on the northernmost of a group of islets 2 miles NW of the north end of Rideout Island. The tower has an elevation of 12.6 m.

231 **Caution**. — An underwater ridge with several **shoal depths** lies west of the centre of the shipping corridor opposite Rideout Island; the shallowest depth is 12.6 m.

Chart 7792

232 **Fowler Bay** indents the mainland east of the south end of Rideout Island. The coast between Fowler Bay and the mouth of Hiukitak River, 10 miles SSE, is cliffy.

233 **Hiukitak River**, entering Bathurst Inlet through a steep-sided valley, has rapids about 10 miles upstream. Its water, almost silt free, is a good source of drinking water. An Inuit campsite is on the south bank near the river mouth.

234 **Gordon Bay** *(66°57'N, 107°15'W)* is reported to be deep with steep shores. **Bear Island**, in the middle of the bay, rises steeply to 150 m.

235 An unnamed bay, close west of Gordon Bay, is encumbered in its inner part with islands, islets and rocks.

Chart 7791

236 An abandoned trading post is on the NE coast of Banks Peninsula, about 6.5 miles SSE of Wollaston Point *(1994)*. **Fresh water** can be obtained from a small stream in the vicinity.

237 **Brown Sound** *(67°25'N, 108°27'W)* has steep mud slopes about 150 m high, backed by dolomite cliffs rising to 270 m on its west side. Its east side, formed by **Goulburn Peninsula**, is low and rocky to the south but rises to a red quartzite bluff 120 m high at its north extremity. A small river flows through a wide, low, marshy valley at the head of Brown Sound.

238 **Goulburn Lake**, a lagoon of considerable extent, is connected by a shallow channel to a narrow inlet on the east side of Goulburn Peninsula. An Inuit family live on the west side of the entrance to this inlet *(1992)*.

239 The east coast of Banks Peninsula, south of Goulburn Peninsula, has many cliffs and is fronted by several islands and islets.

240 **Caution**. — The sounded track leading through the centre of the Barry Islands group has a **least** charted **depth** of 27 m but is very **narrow** in two places. The route along the west side of the islands has **shoal soundings** and some small islets in the narrow part between Algak Island and Goulburn Peninsula and several small low islets in mid-channel between Banks Peninsula and Kanuyak Island. The **shoals** and islets indicate pinnacle **rocks** may exist.

Chart 7792

241 **North Quadyuk Island** *(67°05'N, 107°49'W)*, close off the SE extremity of Banks Peninsula, attains elevations of 150 m. **Razor Top Point** is its north extremity.

242 **Red Islands** are four low islands composed of red rock. An islet lies close off the SE end of Red Islands.

243 The **route** leading between Red Islands and North Quadyuk Island, based on track lines, has a least charted depth of 18.7 m east of Razor Top Point.

244 **Caution**. — A **shoal area**, with islets and obstructions, and an **isolated rock**, with a depth of 3.6 m, lie 0.7 and 1 mile, respectively, SE of the largest of the Red Islands. A **shoal** with a depth of 1.2 m is 3.3 miles SW of the largest of the Red Islands, close east of North Quadyuk Island. A **shoal** with a depth of 15.8 m lies 0.6 mile east of the 1.2 m shoal.

245 **Manning Point** *(67°01'N, 107°44'W)* is the north extremity of **Tinney Hills**, which extend 18 miles south along the east coast of Bathurst Inlet. The hills reach elevations of about 460 m.

246 **Caution**. — A **shoal**, with several above-water rocks, is 0.6 mile NW of Manning Point. The rock at the south end of the shoal has an elevation of 1 m. A **shoal**, **awash**, is 2 miles north of Manning Point.

247 **Quadyuk Island**, separated from North Quadyuk Island by a very narrow channel, rises in a narrow ridge of hills to 210 m.

RAZOR TOP POINT BEARING 185° — 6.4 MILES (1991)

NORTH QUADYUK ISLAND, FROM A POSITION WITH MANNING POINT BEARING 030° — 1.8 MILES (1991)

NORTH PEAK OF QUADYUK ISLAND BEARING 207° — 6.7 MILES (1991)

ISLET CLOSE SE OF RED ISLANDS BEARING 180° — 2.2 MILES (1991)

NORTH END OF WIGNICK ISLAND BEARING 270° — 3 MILES (1991)

Chart 7793

248 The southernmost of two low islands off the SE end of Quadyuk Island is 3 m high.

249 **Caution**. — This section of the shipping corridor, from abreast the south end of Quadyuk Island WSW to a position south of Wignick Island, crosses several **underwater ridges**. There are many depths less than 20 m; the shallowest is 11.6 m, found 1.7 miles ESE of the 3 m high island south of Quadyuk Island.

250 **Wignick Island**, in mid-channel between Quadyuk Island and **Elliot Point**, the east entrance point of **Burnside Bay**, has an elevation of about 30 m.

FROM ANCHORAGE IN BURNSIDE BAY, VIEW OF BATHURST INLET LODGE (1991)

FROM ANCHORAGE IN BURNSIDE BAY, VIEW OF PRIVATE AIRSTRIP (1991)

BATHURST INLET LODGE FROM RIVER (1991)

251 **Burnside River**, rising in a maze of lakes about 100 miles SW, is joined by **Mara River** about 37 miles from its mouth. The mouth of Burnside River is choked by sand flats which barely cover at high water. **Burnside Inlet**, close inside the river entrance, extends south from the south side of Burnside River.

252 **Bathurst Inlet**, now an outpost camp, was established in 1929 by a mining exploration company on a low bluff forming the east entrance point to Burnside River. There had been a series of trading posts previously. The buildings of a *Hudson's Bay Company* post *(closed in 1964)* were converted *(1969)* to the *Bathurst Inlet Lodge*, a tourist lodge which operates during summer months. The **buildings** are white, **conspicuous**, and the church spire is prominent *(1991)*. Accommodation at *Bathurst Inlet Lodge* is in summer only, by prior arrangement. Resident caretakers stay year round. The private airstrip, on the west shore of Burnside Bay SE of the buildings, has prominent bulldozed cliffs on one side; air travel is usually by floatplane.

253 Fresh water is available from the Burnside River about 2.5 miles from the lodge.

254 **Caution**. — The **channel** through the entrance of Burnside River to Bathurst Inlet outpost camp changes from year to year. **Local knowledge** is advised to approach the camp.

255 **Kringaun Hill** *(66°48'N, 108°01'W)*, the highest elevation on **Bathurst Ridge**, makes a good landmark. Bathurst Ridge consists of high bedrock hills with pointed crests.

BATHURST INLET (1977)

CCGS NAHIDIK ANCHORED IN BURNSIDE BAY, FROM THE LODGE (1991)

KRINGAUN HILL IN TRANSIT WITH 3 M HIGH ISLAND, BEARING 235° — 1.2 MILES (1991)

256 **Anchorage** can be obtained in 11 m, sand bottom, in Burnside Bay about 0.3 mile WSW of Elliot Point. Good anchorage with shelter from north winds can be found in 6 m about 3.5 miles north of Elliot Point at the head of a bay in the south end of the **Young Islands**. *Northern Transportation Company* barges usually anchor in Burnside Bay and lighter their cargo ashore.

257 Confined but well-protected anchorage can be obtained by small craft in 3 m in the entrance to Burnside Inlet, about 0.1 mile NNE of Bathurst Inlet outpost camp.

258 **Caution**. — About 0.2 mile NW of Bathurst Inlet outpost camp, the north side of the entrance channel to Burnside River is fringed by **rocks**. The area is backed by a grassy island and should be easily identified. Due to shifting sand banks, **local knowledge** is advised for the entrances to Burnside Inlet and Burnside River.

259 **Portage Bay**, west of Young Islands, has low shores except in its NW part where high cliffs occur. **Wilberforce Hills** lie 3 miles west and parallel to Portage Bay.

260 **Caution**. — **Shallow water** is reported to exist close offshore in all parts of the bay.

261 SW **winds** prevail during summer months; NW during winter. It is reported that there is little or no fog during summer.

262 **Ice** usually breaks-up in the latter part of July and freeze-up occurs around mid October.

263 **Tinney Cove** *(66°46'N, 107°43'W)*, 6 miles SE of Elliot Point, is formed by the Tinney Hills on the east side and a hilly ridge on the west which continues 4 miles NNW as two long narrow islands; the south island is hilly. At the head of the cove, where two streams enter, the land is low. Seaplanes have landed in Tinney Cove.

264 **Caution**. — The northern of two small islands in the approaches to Tinney Cove has **foul ground** off its north end, and the north island on the west side of the cove is low and surrounded by **shallow water**.

265 **Caution**. — The inlet entered west of **Young Point** *(66°46'N, 107°51'W)* is unsurveyed but known to have above- and below-water **rocks** about 3.5 miles inside its entrance.

266 The west side of Bathurst Inlet between **Fishing Creek**, 8.5 miles SSE of Young Point, and **Amagok Creek**, 5 miles farther SSE, is relatively low. **Fresh water** is obtainable from these creeks.

267 Close SE of Amagok Creek a drumlin ridge, attaining elevations of 240 m in places, falls sharply to the water and forms the remaining 15 miles of the west side of Bathurst Inlet.

268 On the east side of Bathurst Inlet, **Bear Creek Hills** are fronted by steep cliffs and rise to elevations of about 330 m.

269 **Caution**. — Near the south end of Bathurst Inlet, a large **shoal patch** extends 2.8 miles NNW from an unnamed point on the east shore. Depths as little as 2.1 m are on this patch.

270 **Western River** enters the head of Bathurst Inlet through a gorge about 2 miles wide. The river is reported to be navigable by canoe for 20 miles or more. There is a bar over which even a canoe must be portaged during the lower water levels that occur toward the end of the summer.

Melville Sound and Approaches

Charts 7790, 7791

271 **Melville Sound** *(68°08'N, 107°52'W)* extends 60 miles along the south side of **Kent Peninsula**. Its inner part is called Elu Inlet.

272 A shipping corridor has been sounded from Breakwater Islands, in Bathurst Inlet, into Melville Sound. The corridor terminates at Roberts Bay.

273 **Caution**. — **Spot soundings** through Melville Sound, outside the shipping corridor, and two lines of **reconnaissance soundings** from Roberts Bay to the mouth of Elu Inlet indicate an uneven bottom and a number of off-lying **shoals**; **caution** is required.

Chart 7791

274 **Walker Bay**, on the north side of the approach to Melville Sound, has **Augustus River** at its head *(Chart 7779)*. An inlet on the east side of the outer part of the bay is entered through a gap with steep cliffs on either side.

275 **Cockburn Islands**, in the middle of the approach to Melville Sound, consist of two large and several smaller islands and islets. The east side of the largest of Cockburn Islands is formed of steep cliffs, about 60 m high.

276 **Caution**. — **Shoals** lie 0.7 mile NE and 4 miles east of the largest Cockburn Island.

277 **Fishers Island** *(67°56'N, 108°07'W)*, on the south side of the approach to Melville Sound, is the largest of a number of islands and islets fronting Buchan Bay. On the SW side of the island, a quartzite ridge attains elevations of 180 m.

278 **Buchan Bay**, encumbered with several hilly islands up to 90 m high and numerous islets and above-water rocks, forms a good harbour for small craft. The bay is surrounded by hills; **Buchan Hills** on its SE side attain elevations of 250 m, and a prominent hill 375 m in elevation lies 4 miles east of its head.

279 **Footprint River***(not named on the chart)*, rising in a chain of lakes 15 miles SE, enters the south part of Buchan Bay.

Chart 7790

Melville Sound

280 **Cape Croker** *(68°07'N, 107°49'W)*, the south entrance point of Melville Sound, is the north extremity of an unnamed island. Islets lie close offshore and up to 2 miles off the cape, and hills of moderate elevation rise close south of it.

281 **Caution**. — An **underwater ridge** joins Cape Croker to Kent Peninsula. **Isolated shoals** with depths as little as 4.9 m are on the ridge. Mariners are cautioned to use the route usually followed, ice permitting, past these dangers.

282 Both shores of Melville Sound are irregular and fringed with islands and islets.

283 **Hurd Islands**, close off **Beechy Point** on the north shore of the sound, lie across the mouth of Parry Bay.

284 The NE island of Hurd Islands has a prominent knoll rising to about 90 m on its south side.

285 **Caution**. — **Shallow water** lies along both the north and south sides of the NE Hurd Island. **Isolated shoals** with depths of 2.6 m and 3.9 m lie 2 and 4 miles, respectively, east of this island. A **rock** with a depth of 0.8 m lies 4 miles SE of the island, on the south edge of the shipping corridor.

286 **Parry Bay** has several north/south ridges terminating in cliffs at its head.

287 **Sarvaatuuq River** *(68°03'N, 107°28'W)* enters the south side of Melville Sound 8.5 miles ESE of Cape Croker. **Naujaat Hills**, 10 miles farther east, rise to 280 m and form a prominent landmark. **Koignuk River**, 7 miles east, flows into the head of **Hope Bay**.

288 **Caution**. — A hilly peninsula, bordered on its west side by a chain of islands and islets, extends 6 miles north from the east side of Hope Bay. A **shoal**, with 9.9 m over it, extends 0.8 mile north into the shipping corridor from an island lying close north of the peninsula.

289 **Point Hay**, elevation about 60 m, is the south extremity of a group of islands forming the west side of Warrender Bay. An island 1 mile SW of Point Hay is steep on its east side.

290 The head of **Warrender Bay** is shallow and filled with islets. The peninsula forming the east side of the bay reaches elevations of 120 m.

291 Two inlets indent the south shore of Melville Sound opposite Warrender Bay. The west inlet is known locally as **Roberts Bay**; **Angimajuq River** enters the SE corner of the unnamed east inlet.

292 **Caution**. — A cove on the west side of Roberts Bay has a 7.9-m **shoal** in the entrance. The south end of Roberts Bay has shingle shores, with islands, islets and **drying shoals** projecting from the south shore.

292.1 The facilities of the Hope Bay gold mine are located on the SE side of Roberts Bay. There are buildings, fuel storage tanks, and a road leading to a barge landing site. There is also an airstrip with landing lights.

Elu Inlet

293 The north side of **Elu Inlet** is generally low; numerous streams and rivers enter the inlet. The south side is rocky and mountainous, backed by the **Gloucester Hills**.

294 **Kuururjuaq Point** *(68°18'N, 106°31'W)*, on the west side of the narrow entrance channel to Elu Inlet, has cliffs with apparently fairly deep water close off them. Hills on the east side of the channel rise to about 90 m.

295 A prominent peak, 5 miles NE of Kuururjuaq Point, has an elevation of about 120 m. **Uvaajuuq Hill**, 4 miles farther NE, has an elevation of 197 m. These hills are reported to be prominent from Melville Sound.

296 The head of Elu Inlet is separated from Queen Maud Gulf by a peninsula 4 miles wide.

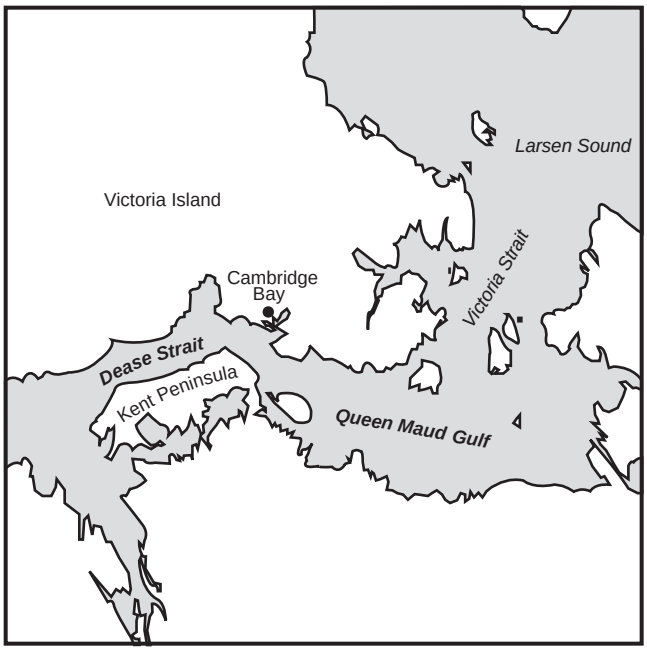
Dease Strait — Queen Maud Gulf

General

Charts 7082, 7083, 7737, 7738, 7750, 7778, 7779, 7782, 7783, 7784

1 This chapter covers the coastal route from Coronation Gulf, south of Victoria Island, to the channels leading to the entrance of Simpson Strait, at the east end of Queen Maud Gulf.

2 *(For a description of the coastal route from Amundsen Gulf to Larsen Sound, see the beginning of Chapter 5.)*



3 *Northern Canada Vessel Traffic Services (NORDREG) Zone* covers all waters described in this chapter. The primary objective of this system is to assist the master in the safe and expeditious conduct of the vessel by promulgating information on ice conditions, giving advice on routes and providing icebreaker support where available and considered necessary.

4 Traffic clearance requests and reports required by this system shall be addressed to *NORDREG CANADA*. Requests and reports may be passed through any *Canadian Coast Guard Marine Communications and Traffic Services (MCTS)* centre free of charge. All times shall be given in *Co-ordinated Universal Time*.

5 *(For further information concerning Vessel Traffic Services in the Arctic, consult Radio Aids to Marine Navigation, available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.).*

6 A **shipping corridor** has been sounded through Dease Strait to Cambridge Bay. From Cambridge Bay, the corridor continues through the NW part of Queen Maud Gulf, past Jenny Linde Island, then northward. The corridor ends between Collinson Peninsula, the easternmost point of Victoria Island, and the north tip of King William Island. *(For exact limits of this corridor see appropriate larger-scale charts.)*

7 *(For general **weather** conditions in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For present and forecast weather conditions, visit: http://www.weatheroffice.gc.ca/canada_e.html. For **climate** normals and averages for selected locations in this area, visit: http://www.climate.weatheroffice.gc.ca. For maps relating to general weather patterns, visit: http://atlas.nrcan.gc.ca/site/index.html.)*

8 *(For general **ice conditions** in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For detailed information on*

present and forecast ice conditions in Northern Canada, visit: http://ice-glaces.ec.gc.ca.)

Dease Strait

Chart 7082

9 **Dease Strait**, entered between Cape Flinders *(68°16'N, 108°48'W)*, on Kent Peninsula, and Murray Point 34 miles NW, extends about 100 miles ENE between Victoria Island and Kent Peninsula to its junction with Queen Maud Gulf, a line joining Cape Colborne *(68°58'N, 105°14'W)* and Trap Point, 12 miles WSW. The strait is generally about 15 miles wide.

10 A solid sheet of non-moving first-year **ice** covers Dease Strait during winter and spring months. Break-up, normally a matter of the ice melting in place, develops from the west and spreads to the east.

11 A feature of this ice is its smoothness and even thickness. As a result, puddling becomes very extensive, and once the ice begins to break, the entire area clears very quickly.

12 In Dease Strait, fracturing of the consolidated ice cover can be expected in the third week of July with complete clearing in the first week of August.

13 Some first-year and multi-year ice from Queen Maud Gulf has been known to penetrate the east end of Dease Strait. Ice begins to form along the south coast and in Cambridge and Wellington Bays, in the NE part of Dease Strait, in late September, and by the third week of October the strait is solidly frozen except for a tongue of heavy but unconsolidated ice which may persist in mid-channel from the entrance of Queen Maud Gulf to the vicinity of Wellington Bay until early December. *(For more information, visit: http://ice-glaces.ec.gc.ca.)*

14 The **tidal range** of large tides in Dease Strait is 2 feet (0.5 m).

15 The **magnetic variation** is erratic in Dease Strait.

Chart 7778

Murray Point to Byron Bay

16 The coast of Victoria Island east of Murray Point rises in shingle slopes or steps to elevations, near the sea, of 30 to 46 m. However, at the NE end of the strait in the Cambridge Bay area, the land is low-lying. The coast of Kent Peninsula is generally low, rising inland to hills of moderate elevation.

17 **Caution**. — Much of the **depth** information in Dease Strait is based on reconnaissance soundings. The shipping corridor has been surveyed more accurately and completely than the surrounding waters. *(For details see Source Classification Diagram on the charts.)*

18 **Wilbank Bay** *(68°37'N, 110°10'W)*, entered east of Murray Point *(previously described)*, has low shores which appear to be bordered by shallow water. The land surrounding and east of the bay is composed of low, rocky ridges and numerous lakes and ponds.

Chart 7779

19 **Sinclair Creek** *(68°44'N, 108°58'W)* is a dry creek bed through a gorge cut in rolling tundra-covered hills, rising gently from the foreshore to over 120 m about 3 miles inland.

20 The *Byron Bay Distant Early Warning (DEW) Line* station, 3 miles NW of the mouth of Sinclair Creek, is abandoned and due to be demolished by 2011 *(2009)*. An abandoned airstrip is at the site.

21 A former **landing beach** 0.15 mile long and 0.1 mile wide, close west of the mouth of Sinclair Creek, is composed of sand and coarse gravel. At the water line, the gradient is 1:15; the remainder of the beach, composed of small rock and shingle, has a gradient of 1:40. About 0.25 mile off the beach, the bottom, composed of sand and medium to large rocks, has a gradient of about 1:49.

22 A prepared earth ramp, no longer maintained, was 14 m long.

23 **Caution**. — The composition and contour of the bottom can be changed by ice action from year to year.

24 The **tidal range** in the Byron Bay area is reported to be about 0.3 m. **Currents** flowing westward at rates to 3 knots, and appearing to diminish to 1 knot 0.2 mile offshore, have been noted off the landing beach.

25 Small- and medium-sized vessels have anchored 0.3 to 0.6 mile offshore in depths of 9 to 30 m, larger vessels up to 1 mile offshore in about 50 m, over a bottom of sand and scattered boulders.

Byron Bay to Wellington Bay

26 **Byron Bay** *(68°56'N, 108°28'W)*, with **radar-conspicuous cliffs** on its north shore, is well protected from north and NW. The bay is reported to be deep in its central part but with sandy shoals at its head near the mouth of **Lauchlan River**. A good supply of **fresh water** is available from the river.

27 **Caution**. — A **shoal** with 5.2 m over it is 12 miles SE of Byron Bay, just inside the north edge of the shipping corridor through Dease Strait.

28 A low sand-coloured **island**, 0.7 mile offshore, 13 miles east of Byron Bay, is **radar conspicuous**, as is a prominent large **ravine** with steep sides 8 miles farther ENE.

29 **Cape Peel** *(69°03'N, 107°16'W)* is the west entrance point of Wellington Bay.

30 A former *DEW Line* **landing beach**, 0.35 mile north of the cape, is about 275 m long and 80 m wide. It is composed

of coarse gravel and has a gradient of 1:12 for the first 10 m offshore, decreasing then to 1:60. From the 5 m contour, about 0.3 mile offshore, the sand and mud bottom slopes up to the beach with an average gradient of about 1:65.

31 The **tidal range** in the Cape Peel area is about 0.5 m; **currents** are reported to be negligible.

32 Shallow-draught vessels anchor about 0.45 mile off the beach in 7 to 11 m; larger vessels anchor 0.7 mile off in 15 m.

33 **Wellington Bay** *(69°17'N, 106°39'W)* is reported to be shoal near its head from the deposits of two large and several smaller rivers. The largest of **Lemming Islets**, in the centre of the bay, has an elevation of 18 m.

34 Track soundings in Wellington Bay *(1990)*, along the meridian 106°30'W from 69°15'N to 69°22'N showed irregular depths of 22.6 to 59 m and a depth of 9 m in 69°22.7'N.

35 **Cape Enterprise**, the east entrance point of the bay, is formed of huge blocks of red sandstone with an elevation of 45 m; these are prominent from seaward.

36 The east shore of Wellington Bay is formed of sandstone ledges rising to a little over 45 m between the cape and an unnamed bay 4 miles north. A river draining **Kitiga Lake** flows into the bay. The north entrance point of the bay is marked by a prominent south-facing bluff which becomes visible soon after passing Cape Enterprise. The bay has not been sounded, but is probably shallow.

37 **Caution**. — The water is **shoal** over an uneven bottom between the islets off the north part of the unnamed bay and the mouth of Ekalluk River.

38 **Ekalluk River**, draining **Ferguson Lake**, is navigable by small boats to the rapids 1.5 miles upstream. The mouth of the river, obstructed with boulder shoals and small islands, is difficult to locate, but a rounded hill near its mouth provides a steering mark when approaching from the south. An Inuit camp with three permanent huts is on the north bank of the river 0.5 mile from its mouth *(1961)*.

Cape Flinders to Trap Point

39 The coast in the vicinity of Cape Flinders *(68°16'N, 108°48'W) (previously described)* and along the west side of Kent Peninsula is mostly composed of rolling tundra with streams from numerous inland lakes and ponds reaching the sea across soft sand beaches.

40 **Cape Franklin**, 23 miles NNE of Cape Flinders, is low and fronted by shoal water. There are hills, rising to about 120 m, 4 miles inland.

41 **Turnagain Point** is a low, flat point with a prominent ridge rising to the east. It was given this name by Franklin because it was the point at which he turned on his canoe journey, in 1821, to return to Fort Enterprise. The fort was 120 miles north of Great Slave Lake.

42 **Caution**. — **Depths** under 10 m lie up to 2 miles offshore between Cape Flinders and Cape Franklin and **depths** under 5 m extend more than 1 mile offshore between Cape Franklin and a position 3 miles east of Turnagain Point. About 10 miles farther east, a **shoal** with 4.6 m over it is reported to extend about 1 mile off the mouth of **Hargrave River**. **Shoal depths** of 5.5, 5.7 and 9 m lie 2.5 miles WNW, 1.5 miles north and 3.5 miles NNE, respectively, of Hargrave River. A **rock ledge** with 4.6 to 6 m over it is reported to extend 1 mile offshore, 2 miles ENE of Hargrave River; a little farther ENE, the 10 m line is charted 1.5 miles offshore.

43 The coast between Turnagain Point and Cape Alexander, 50 miles ENE, is without useful landmarks. **Mount George**, elevation 180 m, is 5 miles inland midway along this stretch.

Chart 7750

44 **Cape Alexander** *(68°57'N, 106°12'W)* is the extremity of a rounded rocky ridge, about 120 m in elevation, with red sandstone visible where streams have formed ravines.

45 **Caution**. — **Shoal rocks** lie close off the cape and a **depth** of 10.5 m, discovered during the 1994 survey, lies 2.5 miles north of it.

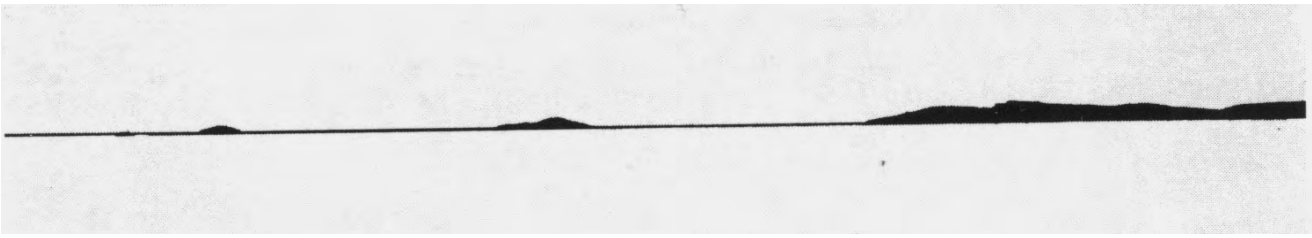
46 The **tide range** at Cape Alexander is reported to be about 0.9 m.

47 **Norberg Islands**, 4 miles NW of Cape Alexander, are good radar targets. The largest island is cone-shaped and very **conspicuous**.

48 **Caution**. — A **shoal** 0.5 mile WNW of the northernmost of Norberg Islands has a depth of

NORBERG ISLANDS BEARING 120° — 2.5 MILES (1991)

TRAP POINT BEARING 119° — 9 MILES (Prior to 1961)



13.7 m; a **shoal** 6 miles NNW of the same island has a depth of 9.2 m.

49 **Caution**. — **Rocks** with 7.5 to 18 m over them lie in the shipping channel between Norberg Islands and Cape Alexander and **shoal depths** of 4 and 9.1 m lie about 1.8 miles SW of Cape Alexander.

50 **Anchorage** is available close SW of the larger of the Norberg Islands; another anchorage is 2 miles SW of Cape Alexander.

51 **Trap Point**, a rock bluff 10 miles ESE of Cape Alexander, is **radar conspicuous**. **MacAlpine Islands** lie off Trap Point; the two largest are **Qikirtaq Island** and **Nunaritgak Island**.

Wellington Bay to Cambridge Bay

52 The coast for 10 miles ESE of Cape Enterprise *(69°10'N, 106°21'W) (previously described)* is formed by low isolated hills of rock and rubble with elevations less than 60 m. Raised beaches form level stretches between the hills.

53 **Caution**. — A wide bay between Cape Enterprise and **Tikigayok Point** *(69°08'N, 106°09'W)*, the west entrance point of **Oxford Bay**, is reported to be **foul ground**. A **shoal depth** of 3.4 m is charted 0.8 mile SE of Tikigayok Point.

54 **Finlayson Islands**, a group of reddish sandstone islands, are **conspicuous**. **Duncan Island**, with sides marked by raised beaches, has an elevation of 30 m. A small cove in the SE part of the island has depths of 4 to 13.1 m. Duncan Island is reported to have deep water off its west side and 7.3 to 9.1 m between its SE end and an unnamed island close SE.

55 **Caution**. — **Shoal patches** and an islet lie between the unnamed island and **Nicol Island**, which is lower than Duncan Island. Navigation through this area is not advised.

56 **Caution**. — A **shoal** with a depth of 4.3 m lies 1.8 miles SW of Duncan Island.

57 **Unahitak Island**, elevation 30 m, is separated from Nicol Island by a channel with a depth of 1.8 m.

58 A tripod **beacon tower** 9.1 m high, with red daymarks and a radar reflector, is on the west island of **Qikiqtaaryuuk** *(68°59'N, 105°49'W)*. The tower has an elevation of 17 m.

59 **Caution**. — **Rocks** with 5.6 m over them extend 0.5 mile SSE, and a **boulder** with 2 m over it lies 0.3 mile SW, of the east island of Qikirtaarjuk Islands. **Rocks** with 9.3 to 15.3 m over them lie up to 2 miles ENE, east and ESE of the same island.

60 **Starvation Cove** *(69°10'N, 106°00'W)*, in Victoria Island north of Finlayson Islands, has depths of 5.8 to 6.7 m at its head. The cove affords **anchorage** in its mouth in reported depths of 7.3 to 9 m. The cove is well sheltered and Inuit schooners used to secure against the beach, where there were two huts occupied during the spring and early summer sealing season. The east entrance point of Starvation Cove is rugged, steep-to and marked by raised beaches to its top. On the west side of the cove two parallel ridges terminate in points. Fresh water is difficult to obtain in the cove and elsewhere along this part of the coast.

61 A wide bay between an unnamed peninsula east of Starvation Cove and Tikiraaryuaq, 11 miles ESE, has **Augustus Hills** at its head. These **conspicuous hills**, rounded and gullied where streams have cut their slopes, rise to 80 m and form the best landmark in this area. The gullies stand out as light strips against the dark hills and are visible for 10 miles or more.

Cambridge Bay

62 **Cambridge Bay** *(69°03'N, 105°07'W)*, the site of the hamlet of the same name, is surrounded by low flat land with only Mount Pelly to relieve the flatness. In summer the ground thaws only to a depth of about 0.3 m, producing numerous shallow ponds which are unusable for drinking water. There is very little vegetation, mostly sparse clumps of short grass and moss with a few Richardson's willows not more than 0.3 m high.

63 **Mount Pelly** is 7 miles NE of the hamlet. The mountain is table-topped, rising to 220 m, with very steep east and south sides. Rising in isolation from the plain, it appears gigantic and can be seen for a considerable distance.

64 *(For details concerning **hydrographic surveys** of the Cambridge Bay area, see the Source Classification Diagram on the chart.)*

CAMBRIDGE BAY (1991)

PUBLIC WHARF, CAMBRIDGE BAY (1991)

CAMBRIDGE BAY (1991)

CAMBRIDGE BAY (1991)

CAMBRIDGE BAY DOME BEARING 051° — 5.5 MILES, MOUNT PELLY (1991)

65 **Caution**. — **Shoaler depths** may exist in the area covered by these surveys.

66 **Caution**. — A ridge, with several **shoals** under 20 m and a least known depth of 9.3 m, lies across the entrance to Cambridge Bay midway between Tikiraaryuaq and Kinngaaryuk. **Depths** within the bay are irregular and there are numerous **shoals**.

67 The average thickness attained by winter shore-fast **ice** is 210 cm with a record maximum thickness of 246 cm measured in 1973. Break-up usually starts about mid June and the bay is usually ice-free by the third week in July, but an ice barrier often persists between Tikiraaryuaq, Kinngaaryukand the Finlayson Islands until the end of July or early August. Freeze-up starts late in September with complete coverage by mid October. *(For more information, visit: http://ice-glaces.ec.gc.ca.)*

68 *(For **climate** normals and averages for Cambridge Bay, visit: http://www.climate.weatheroffice.ec.gc.ca/climate_normals/index_e.html.)*

69 **Ice** and **weather** reports and forecasts are broadcast daily by *Iqaluit Marine Communications and Traffic Services* centre *(see Radio Aids to Marine Navigation (Pacific and Western Arctic), available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids)*.

70 The **tidal range**, large tides, is 0.6 m but this may vary considerably as a result of strong winds in Dease Strait and Queen Maud Gulf. In the vicinity of Aliitimaaq, the tidal stream flows east at 0.5 knot on the flood and west and NW at 1 knot on the ebb. *Cambridge Bay (Index No. 6240)* is a reference port in *Canadian Tide and Current Tables, Volume 4*.

71 There are two **aeromarine radiobeacons** at Cambridge Bay. The stronger station, east of the hamlet, transmits on 245 kHz with identification *Morse* "CB" (— • — • — • • •). The other station, in the entrance to West Arm, transmits on 327 kHz with identification *Morse* "MG" (— — — — •).

72 **Long Point** *(69°06'N, 105°26'W)*, the NW entrance point of Cambridge Bay, is a low, sandy point which continues as a submerged spit for 1 mile or more.

73 **Caution**. — Long Point should be given a wide berth as the water **shoals** rapidly near the spit. **Breakers** may be observed on the spit, and occasional **boulders awash**, left by ice, can exist well off the point. A **shoal depth** of 4.3 m lies 1.2 miles south of the point.

74 A tripod **beacon tower** 9.1 m high, with a red daymark and a radar reflector, is on Long Point. The tower has an elevation of 10.1 m.

RADIO TOWER ON EAST SHORE OF CAMBRIDGE BAY (1991)

75 Most of the north shore of Cambridge Bay between Long Point and Napaqtilik, 9 miles ESE, is less than 20 m in elevation.

76 **Cape Colborne** *(68°58'N, 105°14'W)*, the south entrance point of Cambridge Bay, terminates in a low, inconspicuous sand spit.

77 A tripod **beacon tower** 9.1 m high, with red daymarks and a radar reflector, is on Cape Colborne. The tower has an elevation of 11.4 m.

78 The SE shore of Cambridge Bay is low, featureless and indented by the mouths of streams draining numerous ponds inland.

79 **Flagstaff Point**, on the north side of the bay, is a narrow ridge rising sharply from the water to about 22 m.

80 A low, rocky island, 1.5 miles west of Flagstaff Point, is steep-to on its south side. Although difficult to see, against the high land to the north, the island shows up well on radar up to 6 miles.

81 **Caution**. — **Shoal water** surrounds the island and extends north and NE to the shore.

82 Tripod **beacon towers** 6.1 m high, with red daymarks and radar reflectors, are on Flagstaff Point and on the west and south extremities of the island described above.

83 **Aliitimaaq** *(69°02'N, 105°06'W)*, 1 mile south of Flagstaff Point, is a large pile of tumbled rocks 0.9 m high. The rock itself does not make a good radar target; it has remained undetected until inside 2 miles.

84 A tripod **beacon tower** 6.1 m high, with red daymarks and a radar reflector, is on Aliitimaaq. The tower has an elevation of 11.2 m.

85 **Caution**. — A **rocky ledge** extends 0.3 mile SSE of Flagstaff Point and **shoal patches** lie close to both sides of the range line 0.3 mile farther SSE. Aliitimaaq is surrounded by very **shallow water**, and **shoal patches** extend across the bay south of the rock. Both shores of Cambridge Bay east of Aliitimaaq are fringed by **shoal water**, and isolated **shoal patches** lie more than 1 mile offshore.

86 **Napaqtilik**, 1.6 miles east of Flagstaff Point, is low.

87 **Caution**. — Napaqtilik is surrounded by very **shallow water**. **Shoal patches** extend across Cambridge Bay east of Napaqtilik.

88 Lighted **buoys** mark the north side of the shoal north of Aliitimaaq and the narrow channel past the SE side of Napaqtilik.

89 A tripod **beacon tower** 9.1 m high, with red daymarks and a radar reflector, is on an islet close SE of Napaqtilik. This beacon is reported to show up well both on radar and visually.

90 *Cambridge Bay range 1* **lights** *(2520, 2521)*, on the mainland ESE of Napaqtilik, are in line bearing 095½° and visible only on the range line. The lights lead from a position 2 miles west of Flagstaff Point to SSE of Napaqtilik.

91 *Cambridge Bay range 2* **lights** *(2522, 2523)*, on the mainland 2 miles NNE of Napaqtilik, are in line bearing 015½° and visible only on the range line. The lights lead from the intersection of *range 1* and *range 2* to 1 mile NE of Napaqtilik.

92 *Cambridge Bay range 3* **lights** *(2524, 2525)* are in line bearing 137°. The front light is 0.5 mile north of *range 1* front light and the rear light is on the same tower as *range 1* rear light. The lights lead from the intersection of *range 2* and *range 3*, NE of Napaqtilik, to the approach of West Arm.

93 A **conspicuous** red and white radio **tower**, with red air obstruction **lights** and quick flashing white strobe **lights**, is on the east shore opposite the hamlet. This tower can be seen for a considerable distance from the approaches. **Oil tanks** close north of the public wharf and two near the beach on the north side of the entrance to **West Arm** make good landmarks when approaching the hamlet.

94 Red air obstruction **lights** are shown from **towers** near the airstrip and an aeronautical **light** is shown from a hangar at the airstrip.

95 A *North Warning System* station and supply depot are 0.6 mile north of the airport buildings. A **radome** mounted on a tower is **conspicuous**; it has an aircraft warning **light**. Two domes, at ground level, and a fuel tank are prominent.

LANDING BEACH, WEST ARM CAMBRIDGE BAY (1991)

TUG AND BARGES AT LANDING BEACH, WEST ARM (1991)

96 A **landing beach** 0.25 mile long and 0.1 mile wide near the beach oil tanks, on the north side of the entrance to West Arm, is composed of coarse gravel and has an average gradient of about 1:35. It is suitable for all types of landing craft. The 20 m contour lies about 60 m off the beaching area. The bottom, mud with scattered rock patches, rises to the beach with an average gradient of 1:14. No underwater obstacles or bars have been reported in the vicinity of the beach. Barges moor end-on to the beach.

97 Good **anchorage** can be found close to the beach in about 40 m over a bottom of grey mud.

98 **Caution**. — The West Arm of Cambridge Bay has an extensive **shoal area**, with a **rock** drying 0.3 m 0.2 mile off the south shore 1 mile west of the inner end of the entrance narrows. About 0.25 mile farther west, another **shoal area** extends from the south shore. **Shallows** extend 0.25 mile from the head of the arm. When navigating West Arm favour the north side of mid-channel.

99 **Anchorage** has been obtained at the head of West Arm.

100 The **NE arm** of Cambridge Bay is bordered by shores less than 30 m in elevation. **Freshwater Creek**, draining **Ekaloktotiak (Greiner Lake)**, is at the head of the arm. The water in the arm is clear and the bottom in the shallower places can be seen. The hamlet is on the west shore at the mouth of the arm.

101 **Caution**. — A **shoal spit** projects 0.1 mile south off the shore at the hamlet. There is a 5.7 m **shoal sounding** close east of the spit.

102 **Caution**. — An islet lies in mid-channel east of the hamlet; NE of this islet the inner part of the NE arm is scattered with **shoals**.

103 **Anchorage** in the outer part of the NE arm is good; the holding ground consists of mud, gravel and stones, but because of the low terrain shelter from wind is only fair. Winds from NW, often very strong, are reported to produce waves up to 2 m high. Such winds are likely to occur late in the shipping season. Small vessels anchor in shallow water off the hamlet, and there is a good boat anchorage in 5 m NE of the islet mentioned above, but note the shoals. Supply ships anchor in 30 m in the central part of the outer arm.

104 An above-water **wreck** lies on the east beach of the NE arm. The partially exposed **wreck** of Amundsen's *Maud* lies near the east side of the arm, ENE of the hamlet.

105 Cambridge Bay is a **water aerodrome**. The seaplane base *(not shown on the charts)* is on the west shore of the NE arm, 0.4 mile upstream of the above-mentioned islet.

106 **Caution**. — An **overhead cable**, clearance unknown *(not shown on the charts)*, crosses the NE arm at the narrows 0.2 mile upstream from the seaplane base.

107 **Cambridge Bay hamlet**, population 1,477 *(2006)*, was named after the Duke of Cambridge by Warren Dease and Thomas Simpson of the *Hudson's Bay Company* during an exploratory journey in 1839. This area had been an important Inuit campsite for many years because of the abundance of caribou, seal, fish and wild fowl but a permanent settlement was not established until 1955, when a *DEW Line* station was built here. It is now a key Arctic administration, transportation and supply centre.

108 Cambridge Bay is connected to other northern settlements and to population centres to the south by full-service satellite **telecommunications**, including internet. The community has a post office and a detachment of *Royal Canadian Mounted Police*. There is a Regional health centre with a general practitioner and nurses, and a dental clinic; specialists visit regularly. Urgent cases are airlifted to Yellowknife or, occasionally, to Edmonton.

109 The *Royal Bank* has a branch in Cambridge Bay; the *Automated Teller Machine (ATM)* is open until 10:00 PM. A *Northern Store* and the *Ikaluktutiak Co-op* store, with an *ATM*, provide groceries, clothing and some hardware. *Kitikmeot Supplies* offers building materials, small engine parts and general hardware. *Kitikmeot Foods* processes arctic char and muskox for sale locally and abroad.

110 Local firms can undertake electrical, plumbing and general machinery repairs. Accommodation is available at any of five hotels and lodges.

111 The airport, a gravel airstrip 1,524 m long by 46 m wide, is served by regular scheduled flights from Yellowknife and Edmonton on *First Air* and *Canadian North*; *Kenn Borek Air* and *First Air* provide service from Cambridge Bay to other northern communities. *Adlair Aviation Ltd.* provides charter service on a wide variety of aircraft.

112 Bulk supplies are brought in by annual sealift, using *Northern Transportation Company Limited* tugs and barges, from Tuktoyaktuk. Other supplies are brought in, year-round, by air.

113 *Iqaluit Marine Communications and Traffic Services* centre operates an unmanned peripheral radio site at Cambridge Bay. *(See Radio Aids to Marine Navigation (Pacific and Western Arctic), available at http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*

114 The local *RCMP* detachment handles customs and immigration issues *(see "Regulations" in Chapter 1 of ARC 400 and visit: http://www.cbsa-asfc.gc.ca)*.

115 A T-shaped Public **wharf**, at the centre of the south shore of the hamlet, measures 46 m along the outer face and has a minimum depth of 3.2 m alongside.

116 **Tidal streams** near the public wharf require attention when berthing.

Queen Maud Gulf

Chart 7083

117 **Queen Maud Gulf**, entered from Dease Strait between Kinngaaryuk *(68°58'N, 105°14'W)*, on Victoria Island, and Trap Point, 12 miles WSW on Kent Peninsula, extends about 170 miles east to its junction with Simpson Strait, a line joining Cape John Herschel *(68°41'N, 98°02'W)*, on King William Island, to Cape Geddes, 8 miles south. The border between Queen Maud Gulf and Victoria Strait is a line joining De Haven Point, on Victoria Island, to Cape Davidson, on Royal Geographical Society Islands, to Fitzjames Island, lying close off the SW part of King William Island.

118 Queen Maud Gulf is bordered on all sides by land of very moderate elevation. The south coast of Victoria Island between Cape Colborne and Kean Point rises from the sea to low, rocky hills amidst rolling tundra, lakes and streams, and there are few distinctive natural features. The SW coast of King William Island is also low, with no elevations more than 50 feet (15 m) near shore; inland there is gently rolling tundra with many raised gravel beaches and ridges. Along the south side of the gulf, the mainland coast is low and rocky and most of its length has no features recognizable from seaward. Inland low undulating hills and plains mantled with glacial drift are intersected by numerous rivers and strewn with innumerable lakes.

119 The tracks usually followed through Queen Maud Gulf, south and east of Jenny Lind Island, are shown on *Chart 7083*. The tracks through Requisite Channel and Storis Passage are shown on *Charts 7725 and 7731*.

120 **Caution**. — Some of the referenced charts in Queen Maud Gulf are drawn on an **unknown horizontal datum**. *(See North American Datum 1983 (NAD 83) in ARC 400 — General Information, Northern Canada.)*

121 **Caution**. — **Depth** information in Queen Maud Gulf is sparse and mainly of a reconnaissance nature. *(See the Source Classification Diagrams on Charts 7782 and 7783.)*

122 **Depths** charted within 2 miles of the track usually followed, between the west entrance and Nordenskiold Islands, are more than 11 fathoms (20 m).

123 **Caution**. — Requisite Channel, which leads about 25 miles NE of Nordenskiold Islands, is very encumbered with **rocks** and **shoals**.

124 A weak easterly drift is probably the dominant **current** in Queen Maud Gulf. It has been recorded as attaining about 1 knot at times near the Nordenskiold Islands. Tidal observations at various places on the shores of the gulf show a maximum **tidal range** of 1 to 2 feet (0.3 to 0.6 m). As elsewhere in the western Arctic, the water level varies considerably with the prevailing wind.

125 **Ice** in Queen Maud Gulf is the most difficult on the coastal route east of Cape Parry, probably because of the gradual drift of cold water through Victoria Strait. This results in somewhat thicker floes and later break-up. Old ice from M'Clintock Channel can intrude during the navigation season, and occasionally 10 to 20% of ice present during winter is old ice. Usually, the maze of islands, islets and shoals between Victoria and King William Islands prevents any large scale transport of ice, and the invading ice is formed of strips and patches. *(For more information, visit: http://ice-glaces.ec.gc.ca.)*

126 Puddling of the ice begins in mid June and becomes extensive before break-up begins during the last week of July. Clearing progresses quite steadily from Dease and Simpson Straits with the drift ice normally reducing to scattered patches by mid August. At this time the ice of Victoria Strait is most mobile, and northerly winds can carry ice into Queen Maud Gulf if the extent of clearing in the channels to the north has been less than usual.

127 Freeze-up begins during the first week of October and spreads quickly over the area because of the low water temperatures. A smooth solid layer of fast ice, usually formed by the end of October, increases steadily in thickness through the winter months.

128 Mirage effect is severe in the east part of Queen Maud Gulf when ice is present, making it almost impossible to take visual bearings.

129 It is reported that NW **gales** are not uncommon in Queen Maud Gulf during summer months.

130 *(Current and forecast **weather** conditions for this area, during the shipping season, are available at: http://www.weatheroffice.gc.ca/marine/index_e.html. For the general climate of Canadian Arctic, see Chapter 4 of ARC 400 — General Information, Northern Canada.)*

131 Due to rapid changes in **magnetic variation** over distance and time, the magnetic compass is erratic in Queen Maud Gulf.

Chart 7782

Queen Maud Gulf — North Side

132 Between Cape Colborne *(68°58'N, 105°14'W) (previously described)* and Back Point, 17 miles ESE, the coast changes to cliffs of horizontally bedded limestone, often steep-to or with short stretches of beach, with elevations of 45 to 60 m. Midway along this stretch, **Ippiugaq Cliff**, sheer and light tan in colour, is **conspicuous**.

133 **Back Point** is a low, tapering point; the land rises gently inland.

134 **Anderson Bay** has low shores but they are reported to show up well on radar from about 5 miles south of Back Point. The west side of the bay is composed of strands and low outcrops of limestone fronted by sand beaches. The land to the north and west of the bay is rolling, with hills rising to about 90 m. An island near the head of the bay has an elevation of 15 m.

135 The eastern of the two arms at the head of the bay is the deeper, with reported depths over 55 m. Much of the shore consists of large boulders. Steep rock cliffs near the head come close to the water.

136 Excellent **anchorage** and shelter can be found near the head of the east arm. Inuit small craft anchor in the west arm and small schooners have been drawn up to winter here.

137 **Sturt Point** *(68°47'N, 103°25'W)* projects off the SW end of an unnamed peninsula; both are low but the point shows up well on radar from about 5 miles south.

138 The coast between Anderson Bay and Sturt Point has occasional outcrop hills occurring within 1 mile of the shore. Beaches are limestone shingle and gravel. A river mouth 5 miles east of Anderson Bay provides a suitable landing place for boats. An Inuit camp is located here in spring and summer.

139 A **conspicuous radome**, mounted on a tower and topped with an aircraft warning **light**, marks a *North Warning System* station 13 miles NW of Sturt Point. Prominent domes, at ground level, and a blue building are nearby.

140 **Caution**. — Several **shoal patches** of 2.4 to 9.1 m lie 3 to 6 miles WSW and west of Sturt Point; 7.5 m **shoals**, reported in 1987, lie 1.5 miles south and 1.8 miles SE of the point.

141 A group of abandoned **buildings** and two **oil tanks** are **conspicuous** 1 mile west of **Enterprise Point** at an elevation of 15 m. Two more **oil tanks** are close to the beach SSE of the buildings. These are the remains of *Sturt Point Distant Early Warning (DEW) Line* station, closed in 1963. *(The remnants are to be dismantled and the site completely remediated by Indian and Northern Affairs Canada, beginning about 2015.)*

142 The former **landing beach**, near the SE end of the peninsula, is about 230 m long. The foreshore, about 20 m wide, is composed of shale and boulders with diameters of 0.3 to 0.6 m, and has a gradient of 1:40. The 5 m contour lies 0.2 mile off the beach, and the bottom, composed mainly of rocks, slopes up to the beach with an average gradient of 1:50. Beyond the 5 m contour the water gradually deepens to 9

or 11 m about 0.75 mile offshore. An earth ramp, no longer maintained, was prepared to allow medium-sized landing craft to off-load. It is not recommended for landings to be attempted, by any craft, if there is any swell. The beach should be approached from southward to avoid the shoal areas off both sides of the peninsula.

143 **Anchorage** for shallow-draught vessels can be found in 7 to 11 m, over sand and rock, 0.6 mile SE of the beach oil tanks.

144 The **tidal range** in the Enterprise Point area is about 0.3 m. No significant **current** has been noted.

145 **Caution**. — A 7.6 m **shoal patch** lies 2 miles east of Enterprise Point.

Chart 7783

146 **Parker Bay** lies between Enterprise Point and **Macready Point** *(68°48'N, 103°01'W)*.

147 The coast between Enterprise Point and Stromness Bay, 14 miles ENE, is low, composed of limestone hills and strands, and fronted by shoals extending at least 1 mile offshore. There are no good landmarks. Two islands lying SW and south of the entrance to Stromness Bay, and the islands off Kean Point, to the NE, are surrounded by shoal water, although deep water is reported to exist a short distance from them.

148 **Caution**. — **Stromness Bay** *(68°53'N, 102°41'W)*, filled with **shoals** and islets, is surrounded by low, swampy ground which affords poor landing, even for boats.

149 Three entrance channels lead into the bay between islands obstructing its mouth; none of the islands have an elevation greater than 18 m. The east channel, though very narrow, is the deepest, with a greatest depth of 3 m. The centre channel, separated from the east channel by an islet with an Inuit hut on it, appears to be deep until past the islands, when shoals are encountered. The west channel, which has a hut on its west side, has a limiting depth of 0.6 to 0.9 m but will provide some shelter for boats in an emergency. The **tidal range** in Stromness Bay is about 0.6 m.

150 **Caution**. — A **current** of more than 5 knots is reported to run through the entrance channels.

151 **Kean Point** *(68°52'N, 102°27'W)* is a low, stony point fronted by low limestone rocks.

152 **Caution**. — The coast between Kean Point and De Haven Point, 16 miles ENE, is formed of low limestone ledges; **shoals** exist up to 1.5 miles offshore. None of the bays in this stretch provide good shelter, even for boats.

153 **De Haven Point** *(69°00'N, 101°48'W)*, the SW entrance point of Victoria Strait, is formed of limestone ledges which continue 100 m or more underwater. Inland, several light-coloured hills, not exceeding 50 m in elevation, form the only landmarks.

154 A **current** is reported to flow strongly southward off De Haven Point.

155 **Icebreaker Channel**, separating Jenny Lind Island from Victoria Island, has mid-channel depths ranging from 22 to 87 m.

156 **Caution**. — **Detached shoals**, with as little as 6.8 m over them, are in Icebreaker Channel.

157 *(Victoria Strait is described in Chapter 9.)*

158 **Jenny Lind Island** *(68°42'N, 101°57'W)*, composed of rolling tundra with numerous small lakes and streams, is generally low, rising gently northward to rolling hills about 60 m in elevation. **Clestrain Point**, at the south end of the island, is low. The most prominent part of the south coast is the west part, where the land rises more sharply and gives a better radar return. When approaching from the west, Jenny Lind Island has been sighted at 10 miles, appearing as low, tan hills well before the small island off the south coast, looking much darker, comes into view.

159 **Caution**. — **Shoal water** extends approximately 0.5 mile off Clestrain Point.

160 Tripod **beacon towers** 9.1 m high, with red daymarks and radar reflectors, are on Clestrain Point and an unnamed point on the NE side of Jenny Lind Island. The tower on Clestrain Point has an elevation of 15.9 m.

161 **Caution**. — **Shoal patches** with 5.7, 1.3, 11.6 m over them lie 6 miles ENE, 5.4 and 9.4 miles NE of the beacon on the NE side of Jenny Lind Island, and **isolated shoals** with depths as little as 2.8 m lie between 3 and 10 miles farther NE.

162 **Jenny Lind Bay** *(68°39'N, 101°46'W)* offers good shelter except from SE and south winds.

163 At Jenny Lind Bay, **ice** begins to break up during the last week of June and open water conditions arrive by the second week of August. However, south or SE winds can fill the harbour with ice at any time during the navigation season. Freeze-up is usually underway by October 1 with consolidation occurring the first week of November. The time of break-up and freeze-up can vary up to one month.

164 The normal **tidal range** is about 0.6 m but a range of 0.7 to 0.9 m was observed in the bay during strong west winds. No significant offshore **currents** have been noted.

165 Jenny Lind Island was once the site of a *DEW Line* station. A former **landing beach** near the middle of the NW shore of Jenny Lind Bay is about 180 m long and a little over 90 m wide. The foreshore is composed of sand and gravel with occasional rocks between 8 and 20 cm in diameter, and a gradient of about 1:34. Earth ramps 9 m wide and 30 m long, no longer maintained, were constructed at each end of the beach to facilitate off-loading cargo from landing ships.

The bottom, rock and sand, slopes up to the beach with an average gradient of 1:34.

166 **Caution**. — The composition and contour of the bottom can be altered from year to year by **ice** action.

167 Shallow-draught vessels can find **anchorage** in the bay in 7 m, larger vessels anchor 0.5 mile farther out in 12 m.

168 A **conspicuous radome**, mounted on a tower and topped with an aircraft warning **light**, marks a *North Warning System* station 5 miles north of Jenny Lind Bay. Prominent domes, at ground level, and a blue building are nearby.

169 *(Requisite Channel is described later in this chapter.)*

Chart 7083

Queen Maud Gulf — South Side

170 *Queen Maud Gulf Migratory Bird Sanctuary* is the second-largest bird sanctuary in the world. The maritime limits of the sanctuary extend from Cape Roxborough to Whitebear Point, then to the east entrance point of Kaleet River, in the SE corner of Sherman Basin. A permit from the *Canadian Wildlife Service, Environment Canada*, is required to enter the sanctuary. *(For more information, see Migratory Birds Convention Act, ARC 400 — General Information, Northern Canada.)*

Chart 7782

171 **Caution**. — Little is known of the **depths** in the south part of Queen Maud Gulf; only a few track soundings are charted.

172 **Beaufort River** *(68°42'N, 105°30'W)* enters the south side of Queen Maud Gulf 12 miles SE of Trap Point.

173 Between the mouth of Beaufort River and **Dease Point**, 24 miles SSE, several unnamed islands and numerous islets fringe the coast.

174 **Minto Islands**, between Beaufort River and Cape Roxborough, consists of one large island about 60 m high and several small islands.

175 **Cape Roxborough** *(68°28'N, 105°18'W)* is a rock bluff forming the north entrance point to **Labyrinth Bay**.

176 **Foggy Bay**, 5 miles SE of Dease Point, is full of islets and rocks like the rest of this sector.

177 **Brown Point**, 5 miles east of Foggy Bay, is fronted by islands, islets and rocks extending several miles north.

178 **Melbourne Island**, the largest island in the west end of the gulf, has sandy beaches and a few hills between which stretch almost impassable bogs. The **hills**, rising to 60 m, are reported to be **radar conspicuous**; seen from the north the island appears flat.

179 **Caution**. — A **rock** with less than 2 m over it, existence doubtful, is charted off the NE coast of Qikiqtaryuaq.

180 **Conolly Bay** *(68°10'N, 104°30'W)*, west of **Fitzgerald Islands**, and Campbell Bay indent the coast between Brown Point and Whitebear Point, 25 miles east. The shores of **Campbell Bay**, composed of rocky knolls and intervening low beaches, make it difficult to distinguish the mainland from the numerous small islands scattered through the bay. The islands are reported to be so low as to barely pierce the ice cover in winter. **Spalding Islets** lie in the centre of the bay.

181 **Caution**. — Several **uncharted**, isolated **rocks** and islets have been reported to lie in the approaches and middle of the entrance to Campbell Bay.

182 **Ellice River**, which enters the head of Campbell Bay, has been navigated as far as rapids about 8 miles upstream by a shallow-draught craft. Sand bars are reported to exist for many miles off the river mouth; the water is shallow over a mud bottom and very discoloured. The **land** at the mouth of the river is **radar conspicuous** and an unnamed point 8 miles ENE has been picked up on radar at 23 miles.

183 Campbell Bay normally clears of **ice** during the first week of August with freeze-up beginning in the second week of October. Wide variations in break-up and freeze-up can occur. *(For more information, visit: http://ice-glaces.ec.gc.ca.)*

184 The **tidal range** in the Campbell Bay area is about 0.6 m. The **flood stream** flows westward.

185 **Whitebear Point** *(68°10'N, 103°26'W)* is low and stony with rocky knolls separated by flats; it is reported to be **radar conspicuous** and usually sighted soon after visual contact with Melbourne Island is lost.

186 **Caution**. — **Shoal water** extends several miles north of Whitebear Point; a depth of 3.7 m is reported to exist 1 mile north of the point.

Chart 7783

187 The coast from Whitebear Point *(68°10'N, 103°26'W)* to Bowes Point, 40 miles SE, is low and from seaward appears as an undulating ridge. Numerous low, bare islets lie offshore and shallow water extends 2 or 3 miles off.

188 **Gernon Bay** is 5 miles SSE of Whitebear Point.

189 **Atkinson Point** *(67°55'N, 102°56'W)* has islets and rocks extending more than 6 miles north of it.

190 **Mulroak Islands**, 5 miles ENE of Atkinson Point, and the east island of a group 4 miles to the south, are **radar conspicuous**.

191 **Caution**. — A **shoal depth** of 7.8 m, 3.8 miles NNE of Mulroak Islands, was reported in 1986.

193 **Blackwood Point** is the north extremity of **Perry Island** *(67°48'N, 102°34'W)*. **Kettle Island**, 1 mile north, is easily recognized; it is the highest island in the vicinity.

194 **Historical Note**. — A *Hudson's Bay Company* post, at the head of a lagoon on the east side of Perry Island, was

KETTLE ISLAND 340° — 1.8 MILES (1991)

moved here from Flagstaff Island, 6 miles east, in 1958. The post closed about 1968 but the buildings and a radio tower remain; they are not visible from seaward.

195 **Caution**. — **Shoals**, some with approximate positions, lie up to 6 miles north and NE of Kettle Island; other **uncharted dangers** probably exist. The water in this vicinity is reported to be discoloured by numerous rivers and streams, therefore dependence should not be placed on sighting the shallow patches. Local knowledge is advised.

196 Supply vessels used an **anchorage** midway between Kettle Island and Blackwood Point in 7.3 m. Supplies were ferried to the settlement as depths in the lagoon do not exceed 2.1 m.

197 **Flagstaff Island** *(67°48'N, 102°16'W)*, rocky and sparsely vegetated, has an excellent harbour for small craft on its west side. **Keith Islands** are at the north end of a chain of islands extending NNE of Flagstaff Island.

198 **Caution**. — Numerous **submerged rocks** exist among the islands. Reported **breakers**, position approximate, are charted 3 miles NW of Keith Islands.

199 A pyramidal **cairn** is on an island 9 miles NE of Flagstaff Island.

200 **Chester Bay** is encumbered by islets and rocks. **Rainy Island** and **Winter Island** are at the head of the bay in the mouth of **Perry River**. It is reported vessels drawing 3.7 m can enter the river mouth, but local knowledge is advised as the channel is narrow and tricky.

201 The coast from **Bowes Point** *(67°48'N, 101°56'W)* to Johnson Point, 30 miles east, continues low and very broken appearing from seaward as an undulating ridge.

202 **Caution**. — Numerous islands, islets and rocks, all devoid of vegetation, and a number of **reported dangers** lie up to 15 miles offshore; passage near or through these would be hazardous. The outermost charted danger is a **rock ledge** with less than 2 m over it, 13 miles north of **McTavish Point** *(67°48'N, 101°04'W)*.

203 **Ogden Bay** is 10 miles ESE of Bowes Point. **Pitok River** flows into the east part of the bay. **Armark River** enters the gulf on the east side of McTavish Point.

204 **Caution**. — **Shoals** lie offshore between Armark River delta and the mouth of an unnamed river 4 miles east. A line of track soundings running to the mouth of the unnamed river shows **depths** of 3 m and less extending 3 miles off the river mouth.

205 **Anchorage** in 5.5 m, red mud, has been obtained in 67°49'N, 100°56'W with good holding but little shelter from west or NW winds.

Chart 7083

206 **Simpson River** *(67°49'N, 100°34'W)* flows into Queen Maud Gulf 2 miles SE of **Johnson Point**.

207 **Caution**. — From Simpson River to the base of Klutschak Peninsula, the south coast of Queen Maud Gulf is jagged, indented by the mouths of numerous streams, and encumbered for several miles offshore by low islands and below-water **rocks**.

208 **Stewart Point** *(67°46'N, 98°51'W)* is the SW entrance point of **McLoughlin Bay**. **McNaughton River**, which flows into the south side of the bay, has rocks extending more than 3 miles off its mouth.

Queen Maud Gulf — East Side

209 **Klutschak Peninsula** is higher than the south coast of the gulf, having elevations of 100 feet (30 m) within 1 mile of the shore. **O'Reilly Island**, on the north side of the entrance to McLoughlin Bay, is the largest of the islands lying NW of the peninsula. It has elevations of 100 feet (30 m) near its north end.

210 **Caution**. — Reconnaissance soundings show a **rock** with less than 6 feet (1.8 m) over it lying up to 15 miles WNW and a **depth** of 4 fathoms (7.3 m) 5 miles NNW of O'Reilly Island. Approaching McLoughlin Bay or Wilmot and Crampton Bay use special caution as it is certain that **uncharted pinnacles** exist.

211 **Wilmot and Crampton Bay** *(68°10'N, 98°45'W)* and **Longfellow Inlet**, which extends from its east side, are filled with islands, islets and rocks.

211.1 **WRECKS** and **RESTRICTED AREA**. — A restricted area has been set up in Wilmot and Crampton Bay joining
68°14'44.8"N 098°52'22.3"W,
68°17'44.2"N 098°40'17.9"W,
68°13'15.4"N 098°32'16.2"W,
68°10'16.5"N 098°44'19.3"W,
68°14'44.8"N 098°52'22.3"W.
RESTRICTED AREA — No person shall enter the Wrecks of HMS *Erebus* and HMS *Terror* National Historic Site of Canada without written authorization. The restriction does not apply to a Nunavut Inuk accessing the site for harvesting as provided in the *Nunavut Land Claims Agreement*. See *Canadian Coast Guard (CCG) Annual Edition of Notices to Mariners* for more information.

212 *(Grant Point, at the NE entrance to Wilmot and Crampton Bay, and the area north of it are described later in this chapter.)*

213 **Sherman Inlet** leads between shores which rise fairly steep from the water to 150 and 200 feet (46 and 61 m).

214 **Caution**. — **Shoals** are reported to exist off the entrance; Sherman Inlet itself is believed to be deep enough for vessels drawing 10 feet (3 m) to navigate without difficulty.

215 **Caution**. — Although the maximum **tidal range** in the inlet probably does not exceed 2 feet (0.6 m), tidal streams are sufficiently strong to cause **tide-rips**.

216 **Kettle Cove**, on the east side of Sherman Inlet 5 miles within the entrance, offers excellent protection from all but southerly winds. Sandy bluffs, cut by gullies and backed by hills rising to 100 feet (30 m), surround the cove. Firm sand beaches form the shoreline and depths of at least 10 feet (3 m) exist within 20 feet (6 m) of them.

217 **De Haven Island** is reported to have good water in the narrow channel running east of it; the north entrance to this channel is obstructed by a line of rocks.

218 **Caution**. — A **shoal** is reported to exist close off some rock cliffs on the east side of Sherman Inlet, 2 miles north of Ermine Harbour.

219 **Ermine Harbour** *(67°54'N, 98°12'W)*, with an entrance about 0.6 mile wide between 180-foot (55-m) hills, extends about 1 mile NW. At its head, a channel 0.1 mile wide leads between low banks to an almost circular-shaped harbour with an island 40 feet (12 m) high in its central part. Depths of 10 feet (3 m) exist in the outer and inner parts of the harbour, but a limiting depth of 8 feet (2.4 m) lies in the channel connecting them.

220 The harbour provides **anchorage** with excellent shelter. Boats can be run ashore on a sandy beach just west of the point where a stream enters the west side of Ermine Harbour; fresh water may be drawn from the rapids about 1 mile upstream.

221 A maximum **tidal range** of 2 feet (0.6 m) has been observed in Ermine Harbour.

222 **Crescent Harbour** *(not named on the chart)* is on the east side of Sherman Inlet 2 miles SSE of Ermine Harbour. It is protected by hills with elevations of 100 to 125 feet (30 to 38 m). Boats can be beached on sand at its head. Depths are unknown but are reported to be comparatively deep in mid-channel.

223 A maximum **tidal range** of 2 feet (0.6 m) has been observed in Crescent Harbour.

224 **Sherman Basin** *(67°49'N, 97°35'W)*, bordered to the north by **Adelaide Peninsula** and to the east by **McCrary Isthmus**, has numerous islands, islets and rocks, particularly in its SE part. Depths are almost unknown but are probably shoal.

225 **School of Whales**, a group of islets in the entrance to Sherman Basin, are low and appear to be composed of sand, gravel and boulders.

226 **Caution**. — **Rocks** and **shoals** are reported to exist off the west side of School of Whales; the best passage is considered to be around the north end of the group, where 10 feet (3 m) of water can be found.

227 **Caution**. — **Falcon Inlet**, entered south of School of Whales, is reported to have depths of about 5 feet (1.5 m) in mid-channel; the entrance, choked by islets and **rocks**, is difficult even for small boats.

228 A large island in the SE part of the basin, off **Trefoil Bay**, has elevations of about 100 feet (30 m). **Crane Peninsula** is low. **Kaleet River** enters the south arm of Trefoil Bay.

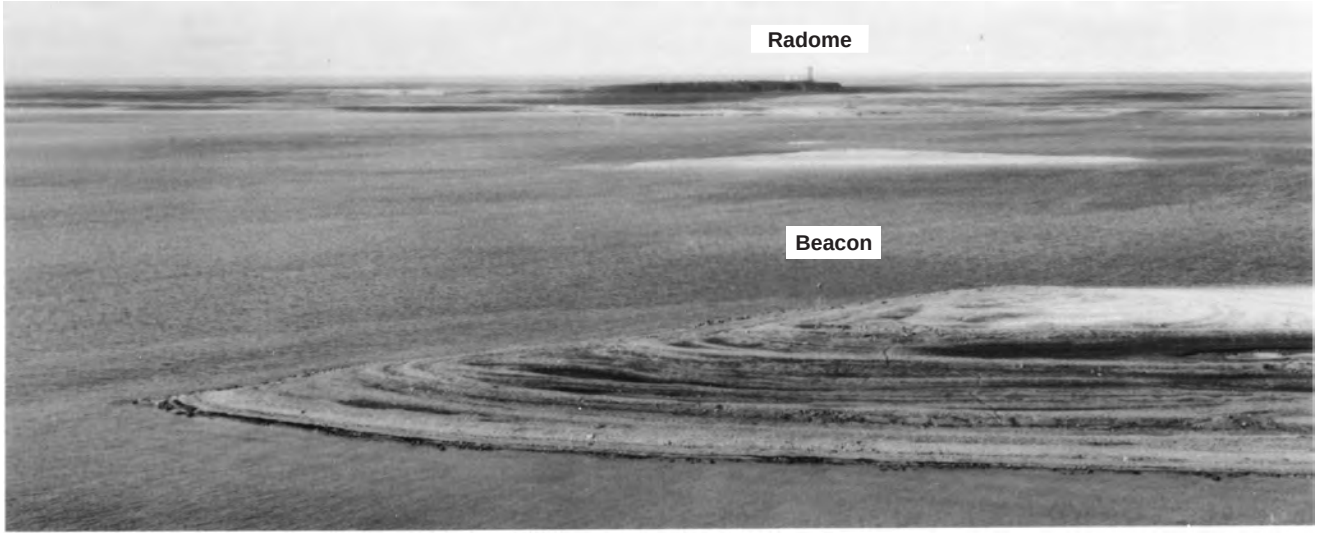
229 **Red Bay** is in the NE part of Sherman Basin. The south shore of a blunt peninsula west of the bay is fringed by shoal water. A hill in the SW part of this peninsula has an elevation of 241 feet (73 m).

230 **Schwatka Islands**, the largest with an elevation of 189 feet (58 m), lie in the NW part of Sherman Basin.

Storis Passage to Requisite Channel

Chart 7737

PUTULIK RADOME FROM EAST OF NORTHPOST ISLAND (1991)



PUTULIK RADOME FROM SOUTH OF TILLER ISLAND (1991)

PUTULIK LANDING BEACH (1991)

231 **Caution**. — East of 101°W, Queen Maud Gulf is encumbered by islands, **rocks** and **shoals**; the channels through these, Markham Strait, Palander Strait and Requisite Channel, are among the most difficult to navigate in the western Arctic. The track usually followed leads through Requisite Channel, the deepest and widest of the three; the other channels are not recommended.

232 **Putulik** *(68°20'N, 100°05'W)* is the most conspicuous island in this part of Queen Maud Gulf. The NW coast is low but the land becomes higher to the south, rising to a flat mesa-like hill. A vessel approaching from northward has sighted Putulik before losing sight of Royal Geographical Society Islands.

233 An abandoned airstrip is on the east side of Putulik. A **conspicuous radome** mounted on a tower and topped with an aircraft warning **light**, and two domes at ground level, mark a *North Warning System* station 0.5 mile north of the airstrip.

Chart 7646

234 The east coast of Putulik is fringed by numerous islands; the named ones are **Northpost Island**, **Spade Island**, **Southpost Island**, **Tiller Island**, **Footprint Island** and **Clog Island**.

235 A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on Northpost Island. The tower has an elevation of 59 feet (18 m).

236 A **beacon range** on Southpost Island, in line bearing 215°, leads between the shoals to the NNE. The range has a red trapezoid front mark, 10 feet (3 m) high, and a red trapezoid rear mark 15 feet (4.6 m) high.

237 A **beacon range** on Tiller Island, in line bearing 351°, leads between the shoals between Clog and Putuliks. The range has a red trapezoid front mark, 10 feet (3 m) high, and a red trapezoid rear mark 15 feet (4.6 m) high.

238 **Caution**. — Numerous **shoals** lie in the sounded areas extending 5 miles south and 4 miles east of Putulik. More **shoals**, indicated by grounded ice, lie, position approximate, up to 9 miles farther east.

239 Putulik was once the site of a *DEW Line* station. A former **landing beach**, on the east side of Putulik west of Southpost Island, is 0.25 mile long. The foreshore, about 45 feet (14 m) wide, has a gradient of 1:8 and is composed of sand and rock. The 5-m contour lies less than 300 feet (91 m) off the beach and the bottom, sand and gravel with some small rocks, slopes up to the beach with an average gradient of 1:15.

240 **Caution**. — Some **boulders** about 4 feet (1.2 m) in diameter lie close off the beach.

241 A good **anchorage** for shallow-draught vessels exists about 0.1 mile off the beach, and for larger vessels 0.5 mile east of the landing beach. The bottom in both anchorages is sand and rock with reported good holding.

242 The maximum **tidal range** in the Putulik area is about 3 feet (0.8 m). Variable **currents** of little significance have been noted.

243 **Ice** normally clears around Putulik during the second week of August with freeze-up beginning about the end of the first week of October. Easterly winds can bring heavy concentrations of ice into the anchorage at any time during the navigation season. Wide variations in break-up and freeze-up can occur. *(For more information, visit: http://ice-glaces.ec.gc.ca.)*

Chart 7737

244 **Caution**. — **Markham Strait** *(68°40'N, 100°40'W)*, between Royal Geographical Society Islands and **Bryde Island**, elevation about 50 feet (15 m), is mainly **unsurveyed** and should not be attempted without local knowledge.

245 A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on an islet 3 miles NW of Bryde Island. The tower has an elevation of 38 feet (11.5 m).

246 **Caution**. — **Palander Strait**, between Bryde and Nordenskiold Islands, is bordered by **shoals** on both sides and has **isolated shoals** in mid-channel. It is only partially surveyed; *U.S. Coast Guard* ship *Storis* tried to find a route through the channel in 1955 but abandoned the attempt because of numerous shoals and difficulty fixing on the low islands on either side of the channel, many of which are barely awash.

247 **Caution**. — **Nordenskiold Islands** are the above-water parts of a vast **shoal**. **Amundsen Island** *(68°26'N, 100°46'W)*, the largest island, has an elevation of 87 feet (27 m) in its north part; there are **radar-conspicuous ridges** here. The islets surrounding Amundsen Island are low and inconspicuous, not appearing to have an elevation greater than 50 feet (15 m); some of the smaller ones are barely awash. They are of little use for visual bearings and, for the most part, only visible for about 4 miles. However, a number of **radar-conspicuous islets** lie off the south end of Amundsen Island.

248 A tripod **beacon tower** 30 feet (9.1 m) high, with red daymarks and a radar reflector, is on a sand and boulder islet 4 miles SSW of Amundsen Island. The tower has an elevation of 38 feet (11.6 m). *Nordenskiold Islands* **Racon**, identification *Morse* "K" (— • —), operates during the navigation season from this tower. A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on a stone and boulder islet, 2 miles east of the south end of Amundsen Island. The tower has an elevation of 56 feet (17.1 m).

249 **Borge Island**, 2 miles NW of Amundsen Island, is low and stony. A tripod **beacon tower** 30 feet (9.1 m) high,

NORDENSKIOLD ISLANDS RACON BEARING 040° (1991)

with red daymarks and a radar reflector, is on Borge Island. The tower has an elevation of 70 feet (21.4 m).

250 **Anchorage** has been obtained 2 miles SW of Borge Island in about 12.8 m, and 4 miles farther south in about 27.4 m. **Anchorage** in 27.4 m is also available 2 miles SW of the islet, with the racon, described above.

251 **Caution**. — **Requisite Channel** *(68°25'N, 100°15'W)*, between Nordenskiold Islands and Putulik, is obstructed by numerous **isolated shoals**, many of them marked by **breakers** in heavy weather. These shoals make the channel difficult for medium-draught vessels, and impossible for deep-draught vessels, to navigate; the least depth is 41 feet (12.5 m). *Canadian Coast Guard* ships make the passage through the channel every year.

253 **Caution**. — Because of the incompleteness of the surveys in this area, **cross bearings** of two features are frequently unreliable; the most dependable fixes are those by range and bearing of one feature at a time. The beacons with radar reflectors show up well on radar at ranges of 4 to 8 miles, though not so well at short ranges where their echoes blend with those of the land.

254 Vessels have experienced **currents** with a southerly set of 1 knot in the channel.

255 **Finger Island** *(68°21'N, 100°16'W)* is on an extensive **shoal** extending from **Helmer Hansen Point**. **Zeta Island**, **Clove Island**, with an elevation about 20 feet (6 m), **Leader Island**, low and formed of sand and boulders, and several unnamed islands extend north of Putulik.

256 Tripod **beacon towers** 30 feet (9.1 m) high, with red daymarks and radar reflectors, are on Finger and Leader Islands. The towers have elevations of 38 and 36 feet (11.7 and 11 m), respectively.

257 **Guard Island** is light tan in colour and composed of small stones with some large boulders; Guard Island and **Grenadier Island** are on the NW side of the channel opposite Leader Island.

258 A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on Guard Island. The tower has an elevation of 66 feet (20.2 m).

259 **Caution**. — Numerous **shoals** and reported shoals lie NW and north of Putulik. Between Grenadier and Leader Islands a **shoal** with 9.8 m over it and a 1.3 m **shoal** which breaks, lie close to the track usually followed.

Charts 7737, 7738

260 **Delta Island** *(68°35'N, 100°02'W)* is composed of gravel and some boulders and identified by its small hill. **Peterhead Islands**, **Ambush Rock**, existence doubtful, and **Spline Reef**, awash, lie NW of the track usually followed.

261 A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark, is on Delta Island. The tower has an elevation of 71 feet (21.6 m). *Delta Island* **Racon**, identification *Morse* "G" (— — •), operates during the navigation season from the Delta Island tower. A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on an islet 8 miles NE of Delta Island. The tower has an elevation of 55 feet (16.8 m).

Chart 7738

262 **Wiik Island** *(68°31'N, 99°33'W)* is the westernmost of a chain of islands extending NW from Wilmot and Crampton Bay; all are **conspicuous**, visually and on radar, although Wiik Island is fairly low and flat.

263 A tripod **beacon tower** 30 feet (9.1 m) high, with red daymarks and a radar reflector, is on Wiik Island. The tower has an elevation of 55 feet (16.7 m); it has been picked up at 12 miles. *Wiik Island* **Racon**, identification *Morse*

"Z" (— — • •), operates during the navigation season from the Wiik Island tower. A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on an unnamed island 4 miles east of Wiik Island. The tower has an elevation of 52 feet (16 m). The island 4 miles ESE of Wiik Island has a pole beacon in its central part *(the condition of this aid is unknown)* and a **cairn** at its SE end.

264 **Caution**. — **Detached shoals** lie close to the track usually followed west, WNW and NNW of Wiik Island. Dangers closest to the track are a **shoal**, depth unknown and position approximate, reported 1961, 5 miles NNW of Wiik Island and a **shoal patch**, reported 1979, with 15 feet (4.6 m) over it, 6.7 miles NNE of Wiik Island; other shoals, reported shoals and discoloured water lie in this general area.

265 **Kirkwall Island** has a rocky ridge along its entire length, rising between 60 and 80 feet (18 and 24 m), surmounted by a stone **cairn** at each end and one in the centre. The cairns are visible from Storis Passage, to the north; the island itself can usually be sighted soon after leaving Putulik. There is deep water right up to the beach on the east side of Kirkwall Island, and to within 300 feet (91 m) of the south side, but the water is shoal off the west and north sides.

266 A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on Kirkwall Island. The tower has an elevation of 69 feet (21.1 m).

267 The islands south of Kirkwall Island are low; only the northern ones are distinguishable from seaward.

268 **Caution**. — The sea bottom south of the islands extending west of Kirkwall Island is very uneven. A supply ship grounded *(1955)* in 2 fathoms (3.7 m) in reported position 68°28'N, 99°16'W.

Storis Passage

269 **Storis Passage** connects Requisite Channel with Simpson Strait.

270 Mid-passage **depths**, except for one patch of 17 fathoms (31 m) and one of 10 to 11 fathoms (18.3 to 20.1 m), are regular with depths over 121 feet (37 m) until 6 miles west of Simpson Strait.

271 **Caution**. — In the south part of the passage there are several **detached shoals**, some with only 3 fathoms (5.5 m) over them. In the easternmost 6 miles of the passage, the bottom is irregular with depths of 36 to 52 feet (11 to 16 m) charted close to the track usually followed.

272 **Grant Point** *(68°24'N, 98°41'W)*, on the south side of the passage, is the NW extremity of Adelaide Peninsula. **Farragut Inlet** lies between Grant Point and **Smith Point**, 5 miles ENE.

273 A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on a **radar-conspicuous island** 2 miles NNW of Smith Point. The tower has an elevation of 73 feet (22.2 m).

274 **Caution**. — **Shoal water** extends about 3 miles NNW of the radar-conspicuous island and also connects the island to Smith Point. **Shoal water** extends off Grant Point and off an island lying 1.5 miles west of the point.

275 **Caution**. — A large **drying shoal**, position approximate, 5 miles NNW of Grant Point, was reported *(1982)* to extend about 2 miles NE of its charted position; be extra cautious in this area.

276 **McGillivray Bay**, between Smith Point and Cape Geddes 13 miles NE, is filled with islands so numerous they cannot, from seaward, be distinguished from the mainland. Most of the **northern islands** in McGillivray Bay are **radar conspicuous**. **Island Inlet** *(Chart 7731)* extends SE from McGillivray Bay.

277 **Cape Geddes** *(68°33'N, 97°59'W)* is surrounded by numerous islands; it cannot be distinguished from seaward. The buildings of an Inuit camp, on an island 1.5 miles NNW of Cape Geddes, are in disrepair *(1989)* but still in use.

278 **Caution**. — A **shoal**, depth unknown and position approximate, reported 1955, is 9.5 miles WNW of Cape Geddes.

Chart 7738

279 The north shore of Storis Passage, formed by King William Island, is very low, with no elevations more than 50 feet (15 m) within 3 miles of the sea, until the entrance to Simpson Strait is approached.

279.1 **WRECKS** and **RESTRICTED AREA**. — A restricted area has been set up in Terror Bay joining
68°54'25.4"N 098°59'42.1"W,
68°48'46.4"N 098°59'42.2"W,
68°48'46.2"N 098°51'31.3"W,
68°54'25.2"N 098°51'29.1"W,
68°54'25.4"N 098°59'42.1"W.
RESTRICTED AREA — No person shall enter the Wrecks of HMS *Erebus* and HMS *Terror* National Historic Site of Canada without written authorization. The restriction does not apply to a Nunavut Inuk accessing the site for harvesting as provided in the *Nunavut Land Claims Agreement*. See *Canadian Coast Guard (CCG) Annual Edition of Notices to Mariners* for more information.

Chart 7784

280 **Terror Bay**, entered between **Fitzjames Island** *(68°50'N, 99°10'W)* and **Irving Islands**, is bordered by shingle beaches.

281 **Caution**. — **Shoals** and islets fill the head of Terror Bay and **shoals** exist in the outer part. Reconnaissance soundings, 5 to 7 miles south of the entrance to the bay, show depths of 11 to 48 m.

282 Terror Bay normally clears of **ice** during the second week of August with freeze-up beginning the first week of October. Wide variations in break-up and freeze-up can occur.

283 **Washington Bay**, with **Nordenskiold River** at its head, is fringed by shallow water. Track soundings in the entrance to the bay show depths of 18 to 48 m. An **islet** 1 mile off the west entrance point is **radar conspicuous**. The land around the bay is gently rolling tundra.

284 **Caution**. — Islets and **shoals** encumber the east part of Washington Bay and extend more than 2 miles off the west entrance point.

Chart 7731

285 **Caution**. — A **shoal depth** of 27 feet (8.2 m) lies 4 miles south of the west entrance point of Washington Bay.

Simpson Strait to Larsen Sound
Coastal route

General

Charts 7083, 7573, 7646, 7736, 7737, 7738, 7739, 7770, 7787, 7788

1 This chapter covers the coastal route leading from Queen Maud Gulf to Larsen Sound through Simpson Strait, Rasmussen Basin, Rae Strait, St. Roch Basin and James Ross Strait.

2 **Caution**. — Some of the referenced charts for this chapter are drawn on an **unknown horizontal datum**. *(See notes on North American Datum 1983 (NAD 83) in ARC 400 — General Information, Northern Canada.)*

3 *(For general information on coastal routes through the Northwest Passage, see Chapter 5.)*

4 *Northern Canada Vessel Traffic Services (NORDREG) Zone* covers all waters described in this chapter. The primary objective of this system is to assist the master in the safe and expeditious conduct of the vessel by promulgating information on ice conditions, giving advice on routes and providing icebreaker support where available and considered necessary.

5 Traffic clearance requests and reports required by this system shall be addressed to *NORDREG CANADA*. Requests and reports may be passed through any *Canadian Coast Guard Marine Communications and Traffic Services* centre free of charge. All times shall be given in *Co-ordinated Universal Time*.

6 *(For further information concerning Vessel Traffic Services in the Arctic, consult Radio Aids to Marine Navigation, available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*

7 *(For general **weather** conditions in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For present and forecast weather conditions, visit: http://www.weatheroffice.gc.ca/canada_e.html. For **climate** normals and averages for selected locations in this area, visit: http://www.climate.weatheroffice.gc.ca. For maps relating to general weather patterns, visit: http://atlas.nrcan.gc.ca/site/index.html.)*

8 *(For general **ice conditions** in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For detailed information*

on present and forecast ice conditions in this area, visit: http://ice-glaces.ec.gc.ca.)

9 The **magnetic compass** is useless in this area.

Simpson Strait

Charts 7736, 7738

10 **Simpson Strait** *(68°30'N, 97°00'W)* separates King William Island, to the north, from Adelaide Peninsula, on the mainland to the south. It is entered from the west between Cape John Herschel, on King William Island, and Cape Geddes, 8 miles SSE, and extends about 45 miles ESE to its boundary with Rasmussen Basin, a line joining Booth Point on King William Island to Ogle Point on the mainland. At its narrowest part, 16 miles within the west entrance, Simpson Strait is about 2 miles wide, but islands and shoals reduce the width of the navigable channel to 0.5 mile or less in places. Because of numerous shoals, narrow channels and strong tidal streams, the passage through Simpson Strait probably presents the greatest navigational hazard in the whole mainland passage.

11 A solid, even layer of shore-fast **ice** covers the area in winter with thickness in the range of 1.8 to 2 m. Puddling begins mid June and becomes extensive before break-up develops in late July. The shoals and islets in this confined waterway restrict ice motion and no significant intrusions of ice from adjoining areas can occur through the narrow entrances. By the second week of August, the strait is normally clear of ice. Freeze-up normally begins during the first week of October with a complete ice cover occurring by the last week of the month. Considerable variations in break-up and freeze-up can occur from year to year.

12 The average **tidal range** in Simpson Strait is reported to be about 2 feet (0.6 m).

13 **Caution**. — The **tidal stream**, from brief and broken observations, is rectilinear, running roughly parallel to the axis of the strait then reversing after a short period of slack water. It is reported tidal streams up to 4 knots, and up to 7 knots near Eta Island, have been experienced, with marked changes of direction, **tide-rips** and **eddies** around the islets and shoals.

Chart 7736

14 A **shipping corridor** has been sounded through Simpson Strait.

15 **Caution**. — Much of the depth information in Simpson Strait outside the shipping corridor is based on **reconnaissance surveys**.

16 **Caution**. — The transfer of a position between **adjoining charts** should be done by means of a range and bearing of a feature common to both charts.

17 **Caution**. — The **channel** through Simpson Strait, marked by **beacons**, **beacon ranges** and **buoys**, has a **least depth** on the range lines of 8.9 m. Numerous **dangerous shoals** of less than 5.5 m lie close to the channel and it is probable that these are altered considerably by ice action each season.

17.1 **Caution**. — Many hazards exist that might force vessels off the range lines. These include **ice**, **high winds**, **poor visibility**, or **inadequate manoeuvrability**, including horsepower.

18 **Caution**. — **Buoys** in Simpson Strait are seasonal but some years it is not possible to lay the buoys because of ice conditions. Buoys are also subject to movement by ice *(see Notice No. 2 in Notices to Mariners 1 to 46, Annual Edition, available at http://www.notmar.gc.ca/)*.

Chart 7738

19 The coast of **King William Island**, on the north side of Simpson Strait, presents a low, regular and rather featureless appearance, with no distinctive landmarks. The land, formed of low drumlins trending NW/SE, seldom rises to more than 100 or 150 feet (30 or 45 m).

20 The Adelaide Peninsula coast is somewhat higher than the north coast, gradually rising to distant hills. The main features of this deeply indented coast are the gravel beaches and ridges running parallel to the north/south alignment of the drumlin and lake topography.

21 The islands in Simpson Strait consist mainly of stones and large boulders, and some have elevations up to 50 or 100 feet (15 or 30 m). From sea they all tend to blend in with each other and with the adjacent shoreline. They are difficult to distinguish as islands and to identify individually.

Chart 7738

Cape John Herschel to M'Clintock Bay

22 **Cape John Herschel** *(68°41'N, 98°04'W)*, on the north side of the west entrance to Simpson Strait, is a low, stony point which rises 0.25 mile inland to about 150 feet (45 m). Only moderately prominent, it can be recognized by a stone **cairn** on the higher ground behind it.

23 **Mitalik Peninsula**, elevation 15 feet (4.6 m), has **Secchi Bay** off its east side.

24 **Caution**. — **Shoal water** lies SW of the peninsula and **shoals** and a **drying rock** lie in the entrance to Secchi Bay.

25 **Salliq Island** *(68°38'N, 98°01'W)* is on the south side of the channel 3 miles south of Mitalik Peninsula.

26 A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on Salliq Island. The tower has an elevation of 44 feet (13.5 m).

Chart 7736

27 **Caution**. — A 1.1-mile long **shoal** lies SE of Salliq Island. A **peak** on this shoal with 1.5 m over it lies 0.8 mile SE, and another with 4 m over it lies 0.5 mile east, of the south end of Salliq Island.

28 **Alicia Island** *(68°41'N, 97°56'W)*, a little higher than Mitalik Peninsula, is **radar conspicuous**.

29 **Caution**. — **Shoals** exist between Alicia Island and **Petersen Island**, a low sand bar 1.5 miles ESE.

30 A **conspicuous radome**, mounted on a tower and topped with an aircraft warning **light**, is 2.4 miles ENE of Alicia Island. Two prominent domes are at ground level with a small building nearby. This is the *Gladman Point North Warning System (NWS)* station.

31 **Caution**. — The *NWS* station is **not manned**. There is an emergency shelter with a motion-activated camera and a telephone, but no supplies or services.

32 The named islands of a large group of generally low drumlin islands on the south side of the west end of the strait are **Comb Islands**, **Albert Island**, which rises to about 30 m on its east side and slopes gently westward, **Taupe Island**, **Kilwinning Island**, **Sarvaq Island** and **St. Magnus Island**.

33 **Caution**. — Isolated **shoal patches**, with 5.5 m or less over them, lie north of the above-mentioned islands, some very close south of the channel.

34 A **beacon range** on King William Island 3 miles SE of **Gladman Point** *(68°39'N, 97°44'W)*, in line bearing 111°, leads through the channel in Simpson Strait from south of Alicia Island to a position SW of Gladman Point. Both towers have red daymarks with white vertical stripes; the rear tower has a radar reflector. The **least depth** on the range line is 14.2 m.

Chart 7736

M'Clintock Bay

35 **M'Clintock Bay** is entered between Gladman Point and **Hobson Island**.

36 **Caution**. — Hobson Island is the above-water portion of an extensive **shoal area**.

37 A tripod **beacon tower** 3 m high, with red daymarks and a radar reflector, is on Gladman Point. The tower has an elevation of 5.3 m.

38 A **beacon range** on the north shore of M'Clintock Bay, in line bearing 016°, leads into the bay in a least depth in the entrance of 6.7 m. The towers are 3 m high, with red daymarks with white vertical stripes. The elevations of the front and rear beacons are 5 and 14 m, respectively.

39 **Caution**. — A 3.1-m **shoal** is on the range line 0.2 mile north of the NW end of Hobson Island. Most of M'Clintock Bay is shallow.

40 An **anchorage** for smaller vessels is within the bay, about 0.1 mile north of Gladman Point. There is protection from seas and ice, in 6 to 8 m, mud and sand bottom.

41 The **tidal range** in M'Clintock Bay is reported to be about 0.9 m.

42 There are no significant **tidal streams** in the bay, but those in Simpson Strait are strong *(see earlier part of this chapter)*.

43 A former **landing beach** is on the north side of Gladman Point, 230 m from the end. The beach is about 275 m long, 23 m wide and is composed of sand and gravel with a gradient of about 1:5. The 5 m contour is about 60 m off the beach. The bottom is composed of large-grade gravel and shale with occasional kelp patches and rocks up to 0.3 m in diameter, and slopes up to the beach with an average gradient of 1:10.

44 *Northern Transportation Company* barges have berthed beam-to at the beach.

45 Vessels can also find **anchorage** about 0.5 mile south of the bay entrance, in 9 to 16.5 m, over a bottom of mud and sand with scattered boulders.

46 *(For maps relating to general **weather** patterns, visit: http://atlas.nrcan.gc.ca/site/index.html.)*

M'Clintock Bay to Ristvedt Island

47 **Beaver Island** *(68°36'N, 97°38'W)*, on a shoal area just offshore of King William Island, **Bear and Cubs**, at the SE end of a similar shoal area 1 mile SE, and **Hook Island** are the named features of numerous islands and shoals on the north side of the buoyed channel up to 5 miles SSE of M'Clintock Bay. **Amittuq Point** projects from the NE shore 1 mile SE of Bear and Cubs.

48 **Boulder Island**, **Minor Island**, **Ujarat Island** and **Saatuq Island** lie within 1 mile of the SW side of the buoyed channel; **Castor Island**, **Pollux Island**, **Zigzag Island**, **Dens Island**, **Chenille Island** and **Club Island** lie farther from the channel on the SW side of Simpson Strait.

49 **Knud Inlet**, which indents Adelaide Peninsula south of the last-mentioned islands, is filled with drumlin islands.

50 **Caution**. — Knud Inlet and most of the approaches are **unsurveyed**.

51 A tripod **beacon tower** 6.1 m high, with two red daymarks and a radar reflector, is on Hook Island. The tower has an elevation of 10.8 m. A tripod **beacon tower** 3 m high, on Minor Island, has two red daymarks and a radar reflector.

52 A **beacon range**, in line bearing 151°, leads from SSW of Gladman Point to SW of Hook Island; it is marked by towers with red daymarks with white vertical stripes, on Boulder Island and Dens Island. A reciprocal **beacon range** 1.5 miles NW of Gladman Point, in line bearing 331° and offset by 0.1 mile from the beacon range bearing 151°, is marked by towers with red daymarks with a white vertical stripe; the front beacon of this range has a radar reflector. Heights of front and rear towers are 6.1 and 9.1 m, respectively, for both ranges.

53 **Caution**. — A 5.8-m **rock patch** lies near the range line WNW of Hook Island.

54 A **beacon range** near Amittuq Point, in line bearing 095½°, and a **beacon range** on Saatuq Island, in line bearing 126°, respectively, lead from SW of Hook Island to a position NW of Saatuq Island. The front and rear range beacons near Amittuq Point are tripod towers, 6.1 and 9.1 m high, respectively, with red daymarks with white vertical stripes; the rear beacon has a radar reflector. The front beacon on Saatuq Island is a square skeleton tower 3.1 m high, with a red daymark with a white vertical stripe; the rear beacon is a tripod tower 9.1 m high, with a similar daymark and a radar reflector.

55 **Caution**. — A 7.8-m **shoal depth** lies north of the range line 1 mile NW of Saatuq Island.

56 **Caution**. — The channel is very narrow north of Saatuq Island and **tide-rips** exist.

57 A tripod **beacon tower** 9.1 m high, with a red daymark and a radar reflector, is on **Peglar Point**, on the north shore 2 miles east of Saatuq Island. The tower has an elevation of 14.4 m.

58 **Eta Island** *(68°33'N, 97°23'W)*, maximum elevation about 15 m, is composed of rocks and boulders interspersed with ponds and grassy patches.

59 A tripod **beacon tower** 9.1 m high, with a red daymark and radar reflector, is on the SW end of Eta Island. The tower has an elevation of 14.5 m.

60 A **beacon range** on the SW side of Eta Island, in line bearing 109°, leads from NW of Saatuq Island to a position west of Peglar Point. The range daymarks, on tripod towers 9.1 m high, have red and white vertical stripes. The rear tower has a radar reflector.

60.1 There is a 117°-297° track from NE of Saatuq Island to SW of Eta Island.

60.2 **Caution**. — The 117° track is not marked by **range beacons**.

61 **Caution**. — A 6.5-m **shoal patch** lies north of the 117° range line east of Saatuq Island.

62 **Dolphin Island**, a low boulder-strewn sand bar, and **Trowel Island** and **Catherine Island**, both strewn with rocks and boulders, are on the south side of the channel.

63 **Cape Seaforth** is the north point of Catherine Island.

64 A tripod **beacon tower** 9.1 m high, with a red daymark and radar reflector, is on Cape Seaforth. The tower has an elevation of 11.1 m.

66 **Caution**. — A **shoal sounding** of 6.2 m lies north of the 117° range line SSW of Peglar Point beacon.

67 **Caution**. — The constriction of the channel near Eta Island causes very strong **tidal currents** and **tide-rips** south of Eta Island. It is recommended that the "narrows" extending from Hook Island to Cape Seaforth be navigated at slack water only.

68 The 117° track continues to a position SSW of the Eta Island beacon.

69 **Ristvedt Island**, 2.8 miles east of Catherine Island, is very low and composed of sand and gravel.

70 A tripod **beacon tower** 9.1 m high, with a red daymark and a radar reflector, is at the SE end of Ristvedt Island. The tower has an elevation of 12.4 m. The **front range** is on the unnamed island to the west of Ristvedt Island. The **beacons**, in line bearing 107°, lead from SSW of Eta Island to east of Cape Seaforth.

71 **Caution**. — A **rock** with 7.8 m over it is north of the 107° range line.

72 The 107° range line intersects a **beacon range**, on Eta Island, in line astern bearing 125°. The front tower is 9.1 m high. Both towers have red and white daymarks.

73 *Ristvedt Island* **Racon**, identification *Morse* "Y" (— • — —), operates from the beacon tower during the shipping season.

74 A **beacon range** with both towers on Catherine Island, in line astern bearing 106°, intersects the 125° *(astern)* range south of Ristvedt Island. This range leads to more open waters in the eastern portion of Simpson Strait. Both towers are 9.1 m tall and have red and white daymarks; the rear is also the rear beacon of a range previously described.

75 **Malerualik River**, 2 miles ENE of Eta Island, drains **Malerualik Lake** and enters the strait along the east side of a relatively high hill terminating in **Peabody Point**.

76 **Anchorage** can be obtained by small vessels in the mouth of Malerualik River, 0.15 mile wide, in a depth of 6.1 m. Small boats can land on either side of the river mouth, but the river is too shallow for vessels to enter for fresh water. Inuit formerly camped here in spring and late summer.

77 **Caution**. — A **shoal** extends 0.7 mile NW of Ristvedt Island, and a **shoal patch** lies 1.4 miles NW of the island, in the western approaches to the Malerualik anchorage.

78 **Tulloch Point** *(68°31'N, 97°07'W)* is moderately high and prominent; its lower levels are covered with rounded boulders. Raised beach lines, a feature of the entire coast, are prominent in this area.

TODD ISLAND BEACON BEARING 340° — 1.5 MILES (1991)

79 **Caution**. — **Tide-rips** occur off Tulloch Point.

80 A tripod **beacon tower** 9.1 m high, with a red daymark and a radar reflector, is on Tulloch Point. The tower has an elevation of 18.2 m. A tripod **beacon tower** 6.1 m high, with two red daymarks and a radar reflector, is on an islet on the south side of the channel 2 miles SSW of Tulloch Point. The tower has an elevation of 10.6 m.

81 **Gould Point**, on the south side of the strait south of Ristvedt Island, is between 18 and 21 m high.

82 **Caution**. — There is a 4.3 m **isolated shoal** 5 miles ESE of Ristvedt Island, 0.6 mile south of the line of the 286° Catherine Island range.

Chart 7788

Ristvedt Island to Rasmussen Basin

83 Numerous drumlin islands parallel the coast for 19 miles SE of Gould Point, the only named one, **Reid Island**, lies across the entrance to **Thunder Cove**. This cove has been described as "a snug little harbour".

84 **Caution**. — **Starvation Cove**, 8 miles SE, has **shoals** in its approaches and its inner part is very broken by islands. It is reported that, in spite of its name, salmon are found in this vicinity in the spring, caribou in the winter and cod in the fall.

Chart 7736

85 **Caution**. — **Douglas Bay** *(68°34'N, 97°02'W)* has a **shoal** with 11 feet (3.4 m) over it in its entrance near mid-channel and its shores are **shoal**, fringed with islets and **submerged rocks**. **Douglas River**, which enters the head of the bay, is navigable for about 0.5 mile by small boats.

Chart 7788

86 **Caution**. — The north shore between Douglas Bay and James Ross Point, 11 miles ESE, is fringed by **shoals**, islets and **submerged rocks** up to 1.5 miles offshore; the **coastline** is **radar conspicuous**. **Peffer River**, a turbulent stream with a **shoal area** off its mouth, is shallow and navigable only by small boats. The **land** on both sides of the river entrance is **radar conspicuous**.

87 **James Ross Point** is low but the land rises inland to over 100 feet (30 m).

88 **Caution**. — A **shoal depth** of 32 feet (9.8 m), reported in 1981, lies 4.4 miles west of the south tip of James Ross Point. Another depth of 32 feet (9.8 m) is 4.9 miles WSW of the point. A **shoal depth** of 36 feet (11 m) is 6 miles SSE of James Ross Point. **Shoal depths** of 27 and 28 feet (8.2 and 8.5 m) lie 4.7 and 8.3 miles, respectively, ESE of James Ross Point. A **preliminary report** from a survey conducted in 1998 indicated a multitude of **shoals** under 6 fathoms (11 m) in the east end of Simpson Strait. These include depths of 30 feet (9.1 m) 5 miles WNW; 35 feet (10.7 m) 5 miles west; 35 feet (10.7 m) 2.3 miles SW; 22 feet (6.7 m) 4.8 miles SSE; 23 feet (7 m) and 32 feet (9.8 m) 1.9 and 8.8 miles, respectively, SE; and 28 feet (8.5 m) 4.9 miles ESE, of James Ross Point.

89 **Booth Point** *(68°29'N, 96°16'W)*, the NE entrance point of Simpson Strait, is a low spit projecting from a stony headland.

90 **Koka Lake** lies north of Booth Point.

91 A **drying channel** lies between Booth Point and the low island close SW.

92 **Caution**. — The passage between the low island and **Todd Island**, 1.5 miles south, is scattered with above- and below-water **rocks**.

93 A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on Todd Island. The tower has an elevation of 62 feet (19 m).

94 **Richardson Point** is on the south side of Simpson Strait.

95 **Barrow Inlet**, south of Richardson Point, has **Squirrel River** at its head.

96 **Caution**. — Barrow Inlet is encumbered by **Maconochie Island** and numerous other islands, **rocks** and **shoals**.

97 **Ogle Point** *(68°18'N, 95°53'W)*, the SE entrance point of Simpson Strait, is a long sandy projection.

98 **Caution**. — A **sand bar**, reported in 1988, extends from Ogle Point to islets and **rocks** lying 3 miles offshore. A **shoal** with 6.1 m over it, reported in 1985, lies 2.5 miles north of the islets and rocks.

Rasmussen Basin

Chart 7788

99 **Rasmussen Basin** *(68°30'N, 95°00'W)* is bounded to the west by King William Island, Simpson Strait and Adelaide Peninsula, to the north by Rae Strait and to the east by the base of Boothia Peninsula. Chantrey Inlet indents the south shore of the basin, penetrating the mainland for 60 miles.

100 **Caution**. — Except for the main shipping routes in the north part of the basin, Rasmussen Basin is mainly unsounded; depth information is from **reconnaissance soundings**.

101 The coastal route through the Northwest Passage leads from Simpson Strait, through Rasmussen Basin, Rae Strait, St. Roch Basin and James Ross Strait to Larsen Sound.

102 **Ice** movement in Rasmussen Basin and Rae Strait is similar to Coronation Gulf and Simpson Strait in that shoals and islets restrict ice motion. A solid, even layer of shore-fast ice covers the area in winter with a maximum thickness of 180 to 220 cm. Puddling begins in mid June and becomes extensive before break-up develops in the last half of July. The area normally clears of ice by the end of the second week of August. Freeze-up usually begins during the first week of October with a complete ice cover by the middle of the month. Wide variations in break-up and freeze-up can occur from year to year.

103 *(For more information, visit: http://ice-glaces.ec.gc.ca.)*

104 Observations in Rae Strait and Shepherd Bay show a **tidal range** of about 1 foot (0.3 m).

105 A strong northerly **tidal flow** has been reported NW of Hovgaard Islands and, later the same day, a strong southerly flow in the south approaches to Rae Strait. This may indicate a rectilinear tidal stream in the north part of Rasmussen Basin.

Chart 7788

Chantrey Inlet

106 **Chantrey Inlet** is entered between Ogle Point *(68°18'N, 95°53'W)* and Cape Britannia, 17 miles SSE. The west side of the inlet is low and flat, with few elevations more than 100 feet (30 m) within 3 or 4 miles of shore. The east side, on the contrary, is predominantly bold and mountainous and composed mainly of red granite.

107 **Caution**. — The only **depth information** is a single line of soundings in the approach to Chantrey Inlet and a single line of soundings commencing south of King Island leading along the east side of the inlet to its head. A line of soundings obtained in 1985, commencing about 4 miles east of Ogle Point and leading south midway between Pechell Point and Cape Britannia to 68°02'N, indicated depths ranging from 31 to 55 m. A **shoal depth** of 8.9 m lies 9 miles north of King Island.

108 **Pechell Point** is a low, sandy point projecting from a coast so flat that a solitary hillock 5 or 8 feet (1.5 or 2.4 m) high has been described as a conspicuous landmark.

109 **Cape Britannia** is a rocky summit about 200 feet (61 m) in elevation. The coast, for 21 miles south of the cape, is formed of moderately high red granite cliffs.

110 **Caution**. — Cape Brittania is fronted by several islets and **submerged rocks**.

111 **Montreal Island** *(67°49'N, 96°04'W)* is very rugged, about 150 feet (45 m) high, and is formed mainly of grey gneiss with whitish vertical bands. It has low beaches and grassy hollows.

112 The Back expedition observed a **tidal range** of about 1 foot (0.3 m) at Montreal Island.

113 **Caution**. — Numerous islets and **rocks** and an extensive **shoal** lie up to 4 miles north and east of Montreal Island.

114 **Caution**. — **Elliot Bay** and an unnamed bay SE of it are filled and fronted by islets and **rocks**.

115 **Cape Hay** projects from the east side of Chantrey Inlet.

116 **Caution**. — The coast between Cape Hay and **Cape Barclay**, a bold, precipitous cape, is fringed by exposed and **submerged rocks**. The north part of the channel between Cape Barclay and **King Island** is encumbered with similar **rocks**.

117 **Backhouse Point** *(67°28'N, 95°24'W)*, south of **Irby and Mangles Bay**, is a high, craggy point of reddish granite. **Victoria Headland**, rising inland to over 600 feet (183 m), is fronted by a cliff that falls almost vertically to the sea. **Cockburn Bay** is SSE of Victoria Headland. **Tariunnuaq Bay** is west of Cockburn Bay. **Back River** and **Hayes River** enter the head of Chantrey Inlet.

118 **Caution**. — Numerous islands, islets and **submerged rocks** obstruct Chantrey Inlet up to 7 miles offshore between Backhouse Point and Victoria Headland and for the same distance off the unnamed peninsula projecting 15 miles NE from the south shore of the inlet.

Chart 7788

Rasmussen Basin — SE Shore

119 The SE coast of Rasmussen Basin between Chantrey Inlet and Shepherd Bay is described by Rae as "decreasing in altitude to a low wet plain". In this area the land is formed of flat-lying sedimentary rocks covered by a heavy mantle of glacial drift; about 25 miles from the sea the land reaches elevations of about 750 feet (230 m).

120 **Arrowsmith Bay** *(68°04'N, 94°53'W)* indents the SE shore of Rasmussen Basin 11 miles east of Cape Britannia

BRENDA ISLAND BEACON BEARING 055° — 1.5 MILES (1991)

STANLEY ISLAND IN TRANSIT WITH CAPE COLVILLE (1991)

(previously described). The shores of the bay are low and sandy and its west entrance point is formed by a gravel ridge.

121 **Ripon Island** is 5 miles NNW of the west entrance point of Arrowsmith Bay.

122 **Caution**. — There is a **shoal sounding** of 17 feet (5.2 m) 2 miles SSW of Ripon Island. There may be **uncharted shoals** in this vicinity.

Chart 7787

123 **Cape Selkirk** *(68°23'N, 94°11'W)* has elevations less than 100 feet (30 m) until 2 or 3 miles inland. Numerous tundra ponds and huge granite boulders are on the cape.

124 **Caution**. — **Shoal water** over a **foul bottom** is reported to extend NE from Cape Selkirk.

125 The coast between Cape Selkirk and the mouth of **Castor and Pollux River** is composed of flat, barren limestone. **Murchison River**, not navigable even by canoe, and **Inglis River** enter the east side of **Inglis Bay**.

126 **Caution**. — The coast is bordered by **shoal water**, up to 2 to 3 miles offshore, from Castor and Pollux River to Inglis Bay.

127 **Acland Point** is low and sandy but the land close NE is prominent from the west.

128 **Minna Island** and **Brenda Island** *(68°37'N, 94°03'W)* are both low and flat.

129 A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on Brenda Island. The tower has an elevation of 39 feet (11.8 m).

Shepherd Bay and Approaches

130 **Cape Colville** *(68°45'N, 94°37'W)*, in the west approach to Shepherd Bay, is a low point with a sand bar extending 300 feet (91 m) to seaward.

131 **Caution**. — **Submerged rocks** lie close off Cape Colville.

132 **Stanley Island** is low and sandy.

133 **Caution**. — Larsen reported **strong tide-rips** near Stanley Island.

134 **Caution**. — An area of **discoloured water** between Cape Colville and Stanley Island extends 3 miles south of the island.

135 **Dryden Point**, a low stony point with an islet lying offshore, is 13 miles NW of Acland Point. **Shepherd Bay** is entered between the two points. **Kate Hill** rises more than 200 feet (61 m) on the west shore of the bay, 10 miles within the entrance.

136 The coast and the islets between Cape Colville and Dryden Point are low and flat.

137 **Ice** break-up in Shepherd Bay normally begins during the first week of July with ice clearing the bay around the first of August. Freeze-up usually begins during the last week of September, forming complete ice cover by mid October. Three weeks to one month variation in the timing of break-up and freeze-up can occur.

138 *Shepherd Bay (Index No. 6160)* is a secondary port in the *Canadian Tide and Current Tables ,Volume 4*.

Charts 7646, 7787

139 **Wilkins Point** *(68°48'N, 93°38'W)*, a low point on the east shore of Shepherd Bay, is the site of the former *Shepherd Bay DEW Line* station and abandoned airstrip. The *DEW Line* station ceased operations in 1987 and has been replaced with an unmanned *North Warning System (NWS)* station.

140 **Caution**. — **Incomplete soundings** show mid-channel depths from the bay approaches to Wilkins Point ranging from 9 to 37 m, but several **shoal depths** of 5.8 to 8.8 m lie up to 6 miles north and NNE of Minna Island. A **shoal depth** of 9.8 m lies 4 miles south of Dryden Point. A low rocky islet is 7 miles north of Acland Point; it has **shoal water** extending NE and SW. A 7.3-m **shoal patch** lies 1.5 miles farther NNE. **Shoal depth**s under 10 m extend more than 0.5 mile off the beach NE of Wilkins Point.

141 The **buildings** and **radome** of the *NWS* station, on a hill with an elevation of 160 feet (49 m) 4 miles east of Wilkins Point, are **conspicuous**.

142 An air obstruction **light** is shown from the radome.

Chart 7646

143 A former **landing beach**, 0.7 mile north of Wilkins Point, is about 0.15 mile long and 0.1 mile wide. It is composed of gravel and sand with a gradient of 1:45. A prepared earth ramp 18 m wide is no longer maintained.

144 The 5 m contour lies about 0.1 mile off the beach and the bottom, composed of mud and rocks, slopes up to the beach with an average gradient of 1:25. About 0.2 mile north of the beach, the 5 m contour extends 0.3 mile offshore.

145 **Caution**. — The composition and **bottom contour** of the beach approaches can alter from year to year because of ice action.

146 **Anchorage** is available about 0.15 mile off the landing beach at Wilkins Point in about 5 m and about 0.4 mile off in 9 m. The bottom in both berths is mud and rock with good holding.

147 **Caution**. — There is **no shelter** at the anchorages.

Chart 7760

Rasmussen Basin — NW Shore

148 The King William Island coast of Rasmussen Basin is low and flat; the land rises gradually in a series of raised beaches to elevations of 40 to 50 feet (12 to 15 m), and occasionally to about 100 feet (30 m), some distance inland.

149 **Lindström Island** *(68°32'N, 96°08'W)* lies close offshore 5 miles NE of Booth Point. It is almost awash at high water and has several islets and rocks off its east end.

150 **Caution**. — An extensive **shoal area** extends 1 mile offshore between 1 and 5 miles NE of Lindström Island.

151 **Hovgaard Islands** lie 10 miles off the NW shore of the basin. The west island reaches an elevation more than 100 feet (30 m) and is **radar conspicuous**.

152 **Caution**. — A **shoal sounding** of 27 feet (8.2 m) lies 2.5 miles NNW of Hovgaard Islands. **Rocks and shoals**, position approximate and reported in 1956, are 3 miles SW of the west island. A **preliminary report** from a survey conducted in 1998 stated that a **shoal depth** of 1 foot (0.3 m) lies 1.25 miles SW of the west Hovgaard Island. A **shoal depth** of 19 feet (5.8 m) lies 1.6 miles NNE of the west Hovgaard Island. A **shoal**, reported in 1988, is 4.5 miles east of the NE end of Hovgaard Islands.

153 A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on the NE extremity of Hovgaard Islands. The tower has an elevation of 47 feet (14.4 m).

154 **Petersen Bay** is entered west of **Betzold Point** *(68°36'N, 95°50'W)*. A small river, draining **Swan Lakes**, enters the head of the bay; a long sand and gravel beach here makes a good landing place for small boats.

155 **Caution**. — **Shallows** extend 0.5 mile off the shores of Petersen Bay.

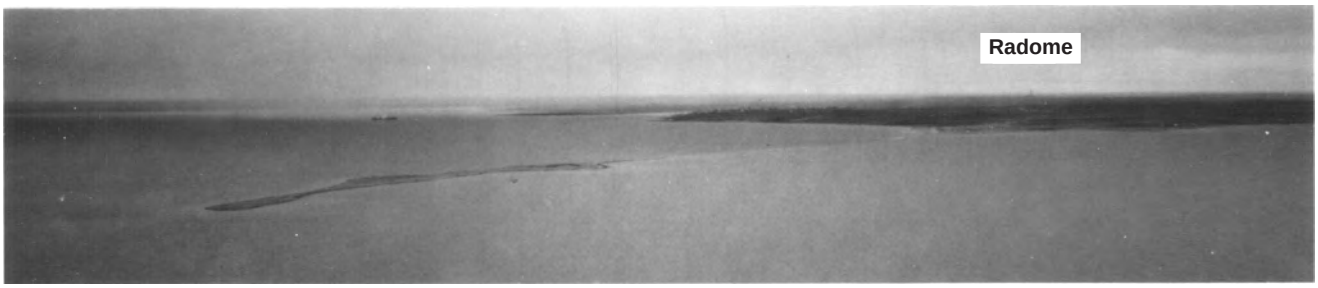
156 **Lund Islet** is close south of Betzold Point.

157 **Caution**. — A **shoal** close south of Lund Islet has a depth of 1.8 m. A **shoal sounding** of 7.2 m lies 1 mile south of the islet.

158 The land surrounding **Gjoa Haven** rises gradually to about 160 feet (49 m).

HOVGAARD ISLANDS BEACON BEARING 190° (1991)

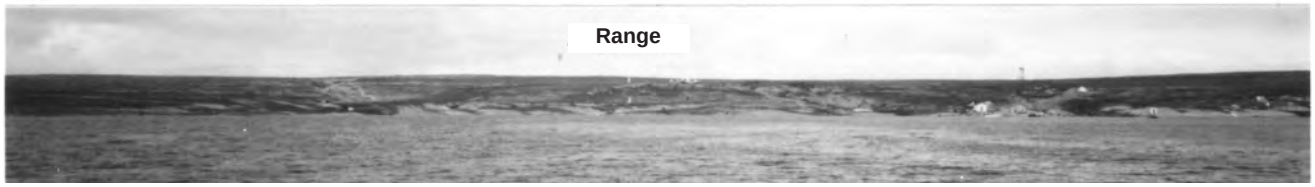
LUND ISLET AND GJOA HAVEN (1991)



GJOA HAVEN (1991)

GJOA HAVEN (1991)

GJOA HAVEN RANGE IN LINE BEARING 358° (1991)



159 Gjoa Haven is an excellent harbour with **anchorage** for small and medium-sized vessels.

160 **Historical Note**. — The harbour was named by Amundsen, the first person to navigate the Northwest Passage, who wintered here in his vessel *Gjoa* in 1904.

161 **Ice** restricts the normal navigation season to the end of July to early October.

162 An **aeromarine radiobeacon** at Gjoa Haven transmits on 236 kHz with identification *Morse* "YHK" (— • — — • • • • — • —).

163 The most **conspicuous** object when approaching is a *North Warning System* **radome** on a tower close north of the hamlet *(68°38.6'N, 95°52'W)*. **Oil tanks** on the east side of the harbour are **conspicuous**.

164 A **radio tower** with red air obstruction **lights** is at the airstrip.

165 A **cairn** is on **Fram Point**, the west entrance point of Gjoa Haven.

166 A **beacon range** at the head of Gjoa Haven, in line bearing 358°, leads to a position just inside the wider part of the harbour in a least depth of 21 feet (6.4 m), and from

GJOA HAVEN (1991)

GJOA HAVEN (1991)

there to the head of the harbour in a least depth of 12 feet (3.7 m). The beacon towers each have a red daymark with a white vertical stripe.

167 **Caution**. — **Shoal depths** less than 6 feet (1.8 m), **breaking** in places, extend 0.1 mile off the east shore of the approaches and entrance to Gjoa Haven, and 300 feet (91 m) off Fram Point. **Shoal water**, off both sides of the harbour, is clearly defined by the light-coloured water, which darkens appreciably where the water deepens.

168 Two rock **breakwaters**, enclosing a small-craft basin, are on the east shore of the harbour east of Fram Point.

169 A **landing beach** for barges, on the east side of the harbour 0.2 mile SE of the range, has two deadman anchors and is composed of soft, loose sand. There is good boat landing on either side of the creek at the head of the harbour.

170 **Anchorage** with excellent shelter from all winds can be found in 7.3 to 9.1 m, as close to the landing beach as swinging room will allow. The bottom is sand and provides excellent holding. Large vessels anchor about 0.4 mile south of Fram Point in 18 m.

171 **Gjoa Haven** hamlet, population 1,064 *(2006)*, is on the east side of the harbour.

172 Satellite **telecommunications**, including internet service, connects Gjoa Haven with other northern communities and population centres to the south. Supplies are brought in by barge from Tuktoyaktuk or flown in from Yellowknife. There is a 4,400- by 100-foot (1,341- by 30-m) airstrip, with daily flights by *First Air* from Yellowknife and flights by *Kenn Borek Air* to Cambridge Bay three days a week.

173 A *Northern Store* and a *Qikiqtaq Co-operative Association Ltd.* store supply food, clothing and hardware. The Co-op has a post office and an *Automatic Teller Machine (ATM)*. Accommodation is available at the *Amundsen Hotel* or *Mary's Inn*.

174 Gjoa Haven has a health centre staffed with registered nurses; other medical professionals visit on a regular basis. There is an air ambulance service to evacuate serious cases. A detachment of the *Royal Canadian Mounted Police* provides law enforcement and customs services *(see "Regulations" in Chapter 1 of ARC 400 and visit: http://www.cbsa-asfc.gc.ca)*.

175 Arrangements can be made through local council for water delivery to the beach by tanker truck.

176 **Historical Note**. — Gjoa Haven settlement has existed since 1927 when the *Hudson's Bay Company* established a post here.

177 **Schwatka Bay** *(68°43'N, 95°39'W)* lies between Betzold Point and **Luigi d'Abruzzi Cape**, low and featureless.

178 **Caution**. — **Shoal water** extends 1 mile off the south end of Luigi d'Abruzzi Cape. Schwatka Bay is fringed by **shoal water** and encumbered by islands and exposed and **submerged rocks**.

179 The terrain inland is generally low but a ridge about 100 feet (30 m) high extends along the middle of **Gibson Peninsula** *(68°48'N, 95°25'W)*.

ASTRUP ISLAND WITH LUIGI D'ABRUZZI CAPE (1991)

BEADS ISLAND (1991)

180 **Astrup Island**, sand and boulder-strewn, is a low island 3 miles ESE of Luigi d'Abruzzi Cape.

181 **Caution**. — Astrup Island should be given a wide berth because of the possibility of nearby **shoals**.

182 A tripod **beacon tower** 30 feet (9.1 m) high, with red daymarks and a radar reflector, is on Astrup Island. The tower has an elevation of 36 feet (11 m). The island itself is visible only about 4 miles.

183 **Caution**. — A **shoal** with 5.5 m over it, position approximate, lies 4.5 miles south of Astrup Island and several **shoal depths** of 6.2 to 9.8 m lie in the area up to 7 miles south and SW of the island.

Rae Strait

184 **Rae Strait** *(68°47'N, 94°56'W)* separates Gibson Peninsula on King William Island from **Saattuq Peninsula** on **Boothia Peninsula** on the mainland, 13 miles east, and joins Rasmussen Basin to St. Roch Basin.

185 The **tidal range** in Rae Strait is reported to be less than 1 foot (0.3 m).

186 The **tidal stream** generally flows north and south with the stronger flow to the south. Variable currents of about 1 knot have been observed close off Brands Point.

187 **Beads Island**, and an islet close SE, are in the middle of the north part of the strait. They are composed of hard packed sand and stones; both are low but readily visible.

188 **Caution**. — **Shoals** extend 1 mile east of the islands. An islet 3 feet (0.9 m) high lies 1 mile ENE of Beads Island.

189 A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on Beads Island. The tower has an elevation of 39 feet (12 m).

190 **Caution**. — **Reconnaissance soundings** through Rae Strait show an uneven bottom with depths ranging between 9.1 and 77 m except for an extensive mid-channel **shoal area** of 4.8 to 18 m extending about 9 miles SSW of Beads Island. **Shoal depths** of 1.3 and 3.8 m lie 1.5 miles E and 2 miles ENE of Beads Island, respectively. A 4.2-m detached **shoal patch** lies 3 miles SSE of **Brands Point** (68°48'N, 95°15'W), an inconspicuous projection on the west side of the strait. An islet, 0.9 m high, and a 3-m shoal lie close east of Brands Point.

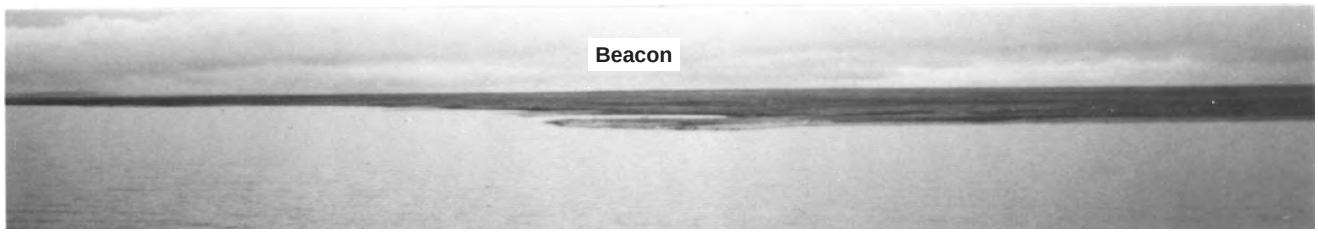
191 **Mount Matheson** *(68°49'N, 95°17'W)*, elevation about 64m, has some **conspicuous** rocky **bluffs** on its SE side. It is the most prominent hill on the south part of King William Island and can often be seen soon after Betzold Point is passed. A fallen radio tower and an abandoned airstrip on Mount Matheson, and 2 groups of oil drums on the shore at Brands Point, are all that remain *(2010)* of a *DEW Line* station abandoned about 1965.

192 Former **landing beaches** are on the south side of Brands Point. The SW beach was used by medium-sized landing craft; landing ships used a prepared earth ramp, no longer maintained, at the NE beach.

193 The 5-m contour lies about 0.1 mile off both beaches and the bottom, consisting of mud, rock and sand, slopes up to the SW beach with a gradient of 1:36 and to the NE beach with a gradient of 1:18. The 20-m contour lies about 0.25 mile off the SW beach and about 750 feet (230 m) off the NE beach.

194 Shallow-draft ships have found **anchorage** within 0.1 mile of the NE beach, larger vessels anchor

CAPE PORTER (1991)



0.25 mile off in about 21.9 m. The bottom is mud, rock and sand with fair holding.

195 **Caution**. — The anchorage areas at Brands Point are **exposed**.

196 The coast between Brands Point and Matheson Point is low and featureless. **Matheson Point** is low and flat.

197 **Caution**. — **Shoal water** extends 0.5 mile east and north of Matheson Point.

198 The east side of Rae Strait between Cape Colville *(previously described)* and **De la Guiche Point** is fairly low. A **point** 1 mile south of De la Guiche Point is **radar conspicuous**.

199 **Caution**. — The inshore waters on the east side of Rae Strait are **not surveyed**. There is moderate **shoaling** offshore in the north section of the east side of the strait.

St. Roch Basin

200 **St. Roch Basin**, between King William Island and the south part of the Boothia Peninsula, is entered from the south through Rae Strait and from the NW through James Ross Strait. James Ross Strait leads to Larsen Sound. The west side of the basin is low and without prominent features but on the east side, some distance inland, hills rise to 1,000 feet (305 m). On the NE side, in the approaches to Spence Bay, moderately high hills reach the coast.

201 **Caution**. — **Reconnaissance soundings** show depths in the central part of the basin of 13.3 to 91 m but a number of isolated **shoal soundings** under 18.3 m lie just east of the central part. Extensive **shoals** and **discoloured water** exist off the entrance to Spence Bay.

St. Roch Basin — East Side

202 **Hay Bay** and **Balfour Bay** lie between De la Guiche Point and **Cape Porter** *(69°10'N, 94°18'W)*. The coast between these points is fairly low.

203 **Caution**. — The entrance to Hay Bay is obstructed by several small islands, rocks and **shoals**.

204 A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on Cape Porter. The tower has an elevation of 42 feet (12.9 m).

205 The coast from Cape Porter to **Cape Macinnes**, 5 miles north, is low with raised beaches.

206 *(Spence Bay and approaches are described later in this chapter.)*

207 **Josephine Bay**, on the north side of St. Roch Basin, lies between **Cape Landseer** and **Cape Cambridge**. **Garry River**, draining **Hansteen Lake**, enters the head of the bay. The east side of Josephine Bay, between **Sullivan Bay** and Artists Bay, is composed of rugged granite hills that gradually rise to over 900 feet (275 m). Both sides of **Artists Bay** are formed of high granite hills; those on the eastern side attain an elevation between 600 and 700 feet (185 and 215 m) a short distance inland.

208 The estuary of Garry River has granite hills on both sides that rise, perpendicularly in places, to 300 feet (91 m). The estuary appears deep with no evidence of shoaling where it enters Josephine Bay.

209 **Josephine River** enters the NW part of Josephine Bay; several rocky islets lie off its mouth. South of the river a rocky peninsula, bare and light-coloured, forms the west side of the bay.

210 **Caution**. — **Shoals** exist about 0.5 mile off the mouth of Josephine River.

211 **Caution**. — From **air photos**, a **detached shoal** 0.8 mile SE of Cape Cambridge appears to dry.

Charts 7770, 7787

Spence Bay

212 **Spence Bay** is between **Cape Farrar** *(69°19'N, 94°16'W)*, a **conspicuous headland** which shows up well on radar, and an unnamed **radar-conspicuous point** 7 miles north. Spence Bay has Stanners Harbour at its head; the hamlet of Taloyoak (Spence Bay) is on the west side of the harbour.

213 The average thickness attained by winter shore-fast **ice** in Stanners Harbour is 217 cm with a record maximum thickness of 239 cm measured in 1976. Break-up in the harbour normally begins during the second week of July with

CAPE FARRAR (1991)

DUNDAS ISLAND AND CAPE FARRAR (1991)

ice clearing the harbour just before the end of the month. Freeze-up in the fall usually begins during the last week of September with a complete ice cover developing by the end of the month. One to three weeks variation in the timing of break-up and freeze-up can occur.

214 Spence Bay is one week to ten days later than the harbour in break-up and freeze-up.

215 *(For maps relating to general weather patterns, visit: http://atlas.nrcan.gc.ca/site/index.html.)*

216 The **tidal ranges** of mean and large tides are 0.2 and 0.3 m. *Spence Bay (Index No. 6150)* is a secondary port in the *Canadian Tide and Current Tables, Volume 4*.

217 An **aeromarine radiobeacon**, at the head of the bay, transmits on 290 kHz with identification *Morse* "YYH" (— • — — — • — — • • • •).

218 **Dundas Island**, close off Cape Farrar, is low, gravelly and light red in colour.

219 A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on Dundas Island. The tower has an elevation of 37 feet (11.2 m).

220 A **radar-conspicuous point** is 2 miles south of Cape Farrar.

221 **Caution**. — A **shoal area** extends more than 5 miles SW of Cape Farrar. A **shoal area**, position approximate and reported in 1960, is 6 miles SW of the cape, and a 12.5-foot (3.8-m) **shoal patch** lies 4 miles WSW of the cape. Reported **shoals** and **discoloured water** lie off the north half of the entrance to Spence Bay. A 17.7-foot (5.4-m)-**shoal patch** lies in the middle of the entrance to the bay, 2 miles NW of Dundas Island.

222 Rugged granite hills rise gradually inland to more than 900 feet (275 m) on the north side of the entrance to Spence Bay. The hills become steeper and closer to shore approaching Cape Isabella. Several islets and islands lie close offshore; the largest is **Imilik Island**.

223 **Caution**. — An extensive **shoal area**, with **rocks** drying 0.9 m, extends 1.5 miles off the south shore opposite Imilik Island. The **sea breaks** on parts of this shoal.

224 A tripod **beacon tower** 30 feet (9.1 m) high, with two red daymarks and a radar reflector, is on an island 0.7 mile east of Imilik Island. The tower has an elevation of 35 feet (10.8 m).

225 **Caution**. — A **shoal** with a least depth of 9.5 feet (2.9 m) lies 1 mile SSE of the above-mentioned beacon.

226 **Cape Isabella**, composed of grey granite, rises sharply to 400 feet (122 m).

227 **Caution**. — Small islands, islets and **shoals** lie up to 1 mile off the north shore between the cape and the head of the bay.

228 The south shore of Spence Bay, from Cape Farrar to the head of the bay, is low.

229 **Caution**. — A **shoal area**, position approximate and reported in 1960, extends up to 2 miles off the south shore NE of **Hull Bay**. Three **shoals** just below

CAPE ISABELLA BEARING 265° — 2.4 MILES (1991)

APPROACHES TO TALOYOAK (SPENCE BAY) (1991)

the surface were observed, by helicopter in 1991, about 0.5 mile NW of the islands in 69°28'N, 93°33'W. Two other **shoals** were observed in the unsurveyed area at the head of Spence Bay.

230 The west side of **Stanners Harbour**, a small inlet at the head of Spence Bay, consists of cliffs rising to about 75 feet (25 m) near the entrance. The cliffs give way to gently rising rocky slopes toward the head of the inlet. The hamlet of Taloyoak (Spence Bay) is here. The east side of the harbour is generally rocky with cliffs rising to about 45 feet (15 m).

231 A **beacon range** at the head of Spence Bay SE of Stanners Harbour, in line bearing 046°, leads south of the shoals on the north side of the inner part of Spence Bay. Each tower has red triangular slatwork daymarks with white vertical stripes. The range beacons are visible from SE of Imilik Island.

232 A square skeleton **beacon tower** 10 feet (3 m) high, with two red daymarks, is at the end of a narrow sand peninsula extending south from the shore about 1 mile west of Stanners Harbour. The peninsula is eroding *(1991)*.

233 **Caution**. — A partly **drying shoal** extends south of the peninsula. The shoal has a depth of 0.4 m, 0.3 mile south of the beacon.

234 **Caution**. — Mid-channel **depths** in Stanners Harbour are about 7 m but a **shoal spit**, with a rock 1 foot (0.3 m) high on it, projects SE from a low sandy peninsula on the NW side of the inlet. The preferred route past this shoal spit has a least depth of 3.7 m and leads close to the east side of the narrow part of the entrance.

235 Good **anchorage** can be obtained, by vessels up to 200 feet (61 m) long, in depths of 8.2 m close off the head of Stanners Harbour. To reduce swinging room vessels moor with stern lines to mooring posts on the beach. Larger vessels anchor in the approaches to the inlet.

236 **Caution**. — **Winds** from the SW may make any anchorage here unsafe.

237 A **landing beach**, with 6 feet (1.8 m) of water close off, is on the south side of the sandy peninsula at the narrow part of the entrance. Another sand beach, with deep water close off, is at the head of the harbour; pilings were installed here in 1988 for mooring barges and for stern mooring.

238 **Taloyoak (Spence Bay** hamlet**)** has a population 809 *(2006)*.

239 Taloyoak is connected to other northern communities and to population centres to the south by satellite **telecommunications**, including telephone service, Internet, radio and TV. Local radio and TV programming is available.

240 The community has a Health Centre staffed with nurses and visited regularly by other health professionals. Serious cases are airlifted to Yellowknife. A detachment of the *Royal Canadian Mounted Police* provides security, as well as customs services *(see "Regulations" in Chapter 1 of ARC 400 and visit: http://www.cbsa-asfc.gc.ca)*.

241 *Northern Stores Ltd.* and *Paleajook Eskimo Co-operative Ltd.* have retail outlets for food, clothing, and hardware. Both stores provide basic banking. The *Co-op* sells handicrafts, has an *Automated Teller Machine (ATM)* and operates the post office. Mail is received 3 times a week. *Lyall Construction Ltd.* offers welding and fuel delivery. Fresh water can be arranged through the Hamlet Office.

242 Bulk supplies are brought in by tug and barge from Tuktoyaktuk during the navigation season. Fresh food, other than 'country food', must be flown in from Yellowknife and is very expensive.

243 *Paleajook Co-op Hotel* and *Boothia Inn* offer accommodations.

244 The hamlet has a gravel airstrip 4,020 feet (1,225 m) long by 100 feet (30 m) wide with scheduled service provided

TALOYOAK (SPENCE BAY) (1991)

TALOYOAK (SPENCE BAY) (1991)

by *First Air*, daily except Tuesday; and by *Canadian North*, daily except Thursday.

245 A **radio tower** 200 feet (61 m) high with red **air obstruction lights** is at the hamlet. Several **oil tanks** NW of the inlet are **conspicuous**. A rotating green aeronautical **light** is near the landing strip WNW of the hamlet.

246 **Historical Note**. — Spence Bay hamlet was established in 1947 when the post at Fort Ross in Bellot Strait was closed and the inhabitants were moved to Spence Bay. The name of the hamlet was changed to Taloyoak in 1992. The women of Taloyoak are well known for their distinctive dolls and attractive parkas and other clothing which they make for sale in the south.

247 **Willersted Inlet** *(69°17'N, 93°40'W)* joins the south side of Spence Bay near the head. The approaches and entrance channel to Willersted Inlet are encumbered by islets, and the main part of the inlet has jagged shores formed by drumlin-like ridges.

Chart 7787

St. Roch Basin — West Side

248 A large unnamed bay lies between the north end of Gibson Peninsula *(68°48'N, 95°25'W, previously described)* and **Livingstone Point**, 12 miles WNW. The coast around the bay is low; **Simmonds Point** projects from the head of the bay. The elevation of Simmonds Point, under 50 feet (15 m), is only slightly greater than the surrounding land.

TALOYOAK (SPENCE BAY) (1991)

TALOYOAK (SPENCE BAY) (1991)

TALOYOAK (SPENCE BAY) (1991)

WILLERSTED INLET FROM SPENCE BAY (1991)

249 **Caution**. — Islets and **shoal water** lie off the shores of the unnamed bay.

250 **LaTrobe Bay** is 4 miles NNW of Livingstone Point.

251 **Caution**. — **Isolated shoals** are in LaTrobe Bay and extensive **shoals** lie along the shores of the bay. A group of islets and a **rock** with less than 6 feet (1.8 m) over it lie 2.5 miles SSE of **Cape Norton** *(69°15'N, 96°01'W)*.

252 **Peel Inlet** has low, heavily indented shores.

253 **Caution**. — Peel Inlet is obstructed by **shoals** and numerous low islands.

254 **Beverly Islands**, close off the south shore of Matty Island, are formed of limestone ridges; most are connected by drying flats. The south shore of **Matty Island** is low-lying without conspicuous features.

255 **Caution**. — An inlet which almost divides Matty Island in two has **shallow water** around its shores and is obstructed at its south end by islets and **shoals**.

James Ross Strait

Chart 7739

256 **James Ross Strait** *(69°40'N, 96°00'W)* lies between King William Island and Boothia Peninsula. The strait connects St. Roch Basin, to the SE, with Larsen Sound, to the NW. Tennent Islands and Matty Island are in the south portion of the strait. Humboldt Channel leads between King William Island and Tennent Islands; Wellington Strait leads between Tennent Islands and Matty Island. The narrow part of James Ross Strait leads between the NE side of Matty Island and Boothia Peninsula. The north entrance of the strait is a line between Cape Felix and Cape Francis; Clarence Islands lie close inside.

257 **Caution**. — Depths in much of James Ross Strait are from **reconnaissance surveys** and track soundings. A **corridor**, north of Matty Island, was surveyed in 1994. **Least depths** found were 2.7 and 2.8 m, 4 miles north of Matty Island.

258 **Caution**. — A vessel passing through the narrow east entrance of James Ross Strait should proceed with great caution because of **extensive shoaling** in the area.

259 **Caution**. — **Tide-rips** occur in mid-channel north of Matty Island.

260 In 1984 cruise ship *Lindblad Explorer* travelled the strait, from NW to SE, in a least depth of 29 feet (8.8 m). The ship followed, in general, the northernmost of the lines of soundings until NE of Brunton Island. *Lindblad Explorer* displaces 2,500 tonnes, has a draught of 15 feet (4.6 m) and carries 98 passengers. *Canadian Coast Guard* vessel *Camsell* escorted *Lindblad Explorer* on this transit.

261 **Historical Note**. — The strait was first navigated by Amundsen, in *Gjoa*, who travelled from north to south in 1903 in the course of making the first "northwest passage".

262 **Ice** conditions in James Ross Strait can vary considerably from one year to another. In a normal year, puddling of the ice begins about mid June, and break-up begins at the end of July; break-up accelerates near mid August with clearing in the early days of September. Freeze-up usually starts during the last week of September with complete ice cover forming in the last week of October.

263 During a summer when NW winds prevail, old drift ice from M'Clintock Channel and Larsen Sound will congest in James Ross Strait.

264 In the narrow part of the strait, between Matty Island and Boothia Peninsula, the current is strong. The larger ice floes ground on the shallow areas.

WELLINGTON STRAIT FROM JAMES ROSS STRAIT (August 27, 1991)

Humboldt Channel and Wellington Strait

265 **Humboldt Channel** is entered south of **Cape Edgeworth** *(69°21'N, 96°07'W)*, the south tip of **Qikiqtarjuaq Island (Tennent Islands)**. Qikiqtarjuaq Island has numerous and **conspicuous** light-coloured **raised beaches**. Tennent Islands *(misnamed on Chart 7760 and Chart 7083)* are the smaller islands off the NW tip of Qikiqtarjuaq Island.

266 **Caution**. — Humbolt Channel is **not surveyed**. **Shoals** and possible **shoal areas** are along both shores and in mid-channel, near its north end.

267 **Thompson Point** lies midway along the SW side of the channel.

268 An excellent **anchorage**, protected to the north by islets and shoals, is reported to lie between the NW tip of Qikiqtarjuaq Island and the largest island of Tennent Islands, elevation about 80 feet (25 m), 1.5 miles west.

268.1 **Sophia Island**, a low island 3 miles north of the anchorage area, has **Cape Sophia** at its north end.

269 **Prince George Bay** *(Chart 7083)* is on the west side of the north end of Humboldt Channel.

270 **Wellington Strait** leads between Qikiqtarjuaq Island and Matty Island.

271 The west section of Matty Island is very low on its east side; elevations reach 50 to 100 feet (15 to 30 m) in its central and west parts.

272 **Caution**. — Wellington Strait is **i**nadequately surveyed. **Shoals**, indicated by a single line of soundings, are in the north and south entrances of Wellington Strait, and more **shoals** are reported to extend about 10 miles NE of **Cape Sabine**, the NW entrance point.

James Ross Strait — East Entrance

273 The south part of James Ross Strait is entered between the south end of Matty Island near **Cape Hardy** *(69°24'N, 95°22'W)* and Cape Cambridge *(previously described)*, 15 miles NE.

274 **Cape Christian Frederick**, on the NE side of the strait, is a fairly level sandy peninsula; low, rocky hills rise gradually to the north and east.

275 **Caution**. — The coast from Cape Cambridge to 4 miles NW of **Cape Maria da Gloria** is fronted by **shoals** extending up to 3 miles offshore. Islets and rocks lie close inshore.

276 **Thomas Island** is a small island of sand and boulders 30 feet (9 m) high.

277 A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on Thomas Island. The tower has an elevation of 40 feet (12.1 m).

278 **Blenky Island (Islands)** and **Brunton Island**, close off the SW shore of the strait, are separated from Matty Island by a narrow and apparently shallow channel. Blenky Island is generally low but has a ridge 50 to 100 feet (15 to 30 m) high in the centre.

279 **Caution**. — **Shoals** and **rocks** extend from Blenky Island well out into James Ross Strait.

280 Tripod **beacon towers** 30 feet (9.1 m) high, with red daymarks and radar reflectors, are on Blenky and Brunton Islands. It has been reported the beacons in this area are generally poor visual marks when seen against the land, but the one on Blenky Island shows up well from NE.

281 **Taylor Point**, a narrow boulder-strewn spit on Matty Island, is 3.5 miles NW of Brunton Island.

282 A tripod **beacon tower** 30 feet (9 m) high, with a red daymark and a radar reflector, is on Taylor Point. The tower has an elevation of 45 feet (13.8 m).

THOMAS ISLAND AND CAPE MARIA DA GLORIA (August 27, 1991)

BLENKY ISLAND BEARING NNW (August 27, 1991)

283 *Taylor Point* **Racon**, identification *Morse* "Q" (— — • —), operates from the beacon tower during the navigation season.

284 **Cape Sussex** *(69°45'N, 95°35'W)* is on the NE side of the strait at the east entrance to Oscar Bay; the bay has low sand and boulder islets in its west half. The coast is low from Oscar Bay to **Cape Gloucester**, 4 miles west. Cape Gloucester is also low.

285 A tripod **beacon tower** 30 feet (9 m) high, with two red daymarks and a radar reflector, is 1.6 miles SE of Cape Gloucester. The tower has an elevation of 45 feet (13.7 m).

286 **Oscar Bay** has been described as an ideal **anchorage** for small vessels.

287 **Caution**. — **Drift ice** from Larsen Sound, on a NW wind, may fill Oscar Bay.

Charts 7573, 7739

James Ross Strait — NE Shore

288 **Cape Victoria** *(69°52'N, 96°08'W)* rises to 21 m 2 miles inland; the cape is reported to be **radar conspicuous** from 15 miles south.

289 **Caution**. — Five floes of grounded ice, indicating **shoals**, were observed *(1991)* to lie approximately 1.5 miles offshore between Cape Gloucester and Cape Victoria. A **shoal area** *(uncharted)* is reported to extend 5 or 6 miles SSW of Cape Victoria.

Chart 7573

290 **Cape Selkirk** and a headland extending north are slightly higher than the surrounding coast.

291 **Caution**. — There is **extensive shoaling** off the mouth of the river at the foot of Cape Selkirk. From **air photos**, **Kent Bay** appears to have low shores and to be encumbered with **shoals**.

BRUNTON ISLAND WITH TAYLOR POINT IN BACKGROUND (August 27, 1991)

TAYLOR POINT (August 27, 1991)

292 The coast from Kent Bay past **Cape Adelaide Regina** to **Cape Francis**, the NE entrance point of James Ross Strait, is rounded and moderately steep with raised beaches. The coast rises 0.5 mile inland to about 30 m.

293 **Caution**. — **Shoals** lie up to about 0.1 mile offshore.

James Ross Strait — SW Shore

294 **Parry Point** *(69°43'N, 97°18'W)* is a very low sand spit. **Port Parry** has low shores and appears from **air photos** to have depths of about 3 m in its central part.

295 **Caution**. — Port Parry is nearly obstructed by **extensive shoals**.

296 The coast from Port Parry to Cape Felix is low, sloping gently up to a maximum elevation of about 15 m. Numerous bare raised beaches extend a considerable distance inland.

297 **Cape Sidney** is a shingle bank thrown up by the sea.

298 **Clarence Islands**, 5 miles off Cape Sidney, have numerous raised beaches and a maximum elevation of about 12 m.

299 *(Cape Felix (69°53'N, 97°57'W) is described in Chapter 9.)*

BEACON SE OF CAPE GLOUCESTER BEARING 090° (August 27, 1991)

CLARENCE ISLANDS (August 27, 1991)

Victoria Strait to Parry Channel

General

Charts 7000, 7083, 7552, 7569, 7570, 7573, 7575, 7740, 7784

1 This chapter covers the waters from Victoria Strait through Larsen Sound to Parry Channel, describing both the waters west of Prince of Wales Island through M'Clintock Channel to Viscount Melville Sound and those east of Prince of Wales Island through Franklin Strait and Peel Sound to Barrow Strait.

2 *(For general information on coastal routes through the Northwest Passage, see Chapter 5.)*

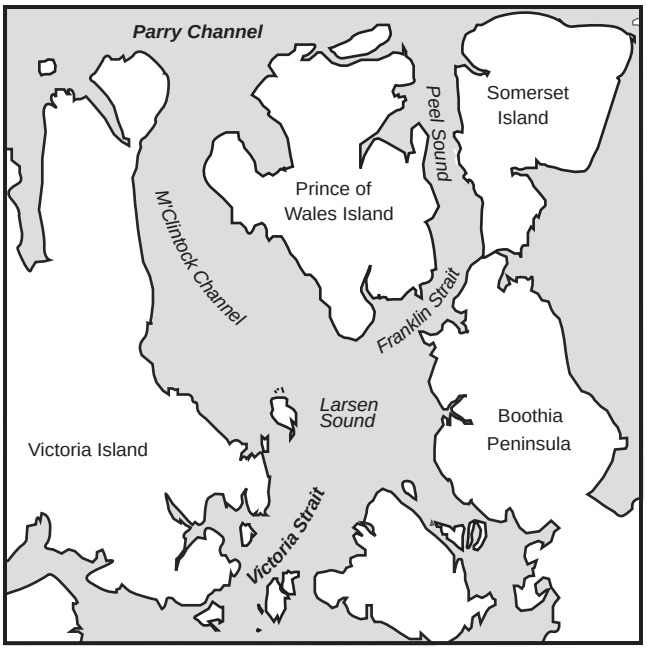
3 *Northern Canada Vessel Traffic Services (NORDREG) Zone* is in effect in all waters covered by this chapter. The primary objective of this system is to assist the master in the safe and expeditious conduct of the vessel by promulgating information on ice conditions, giving advice on routes and providing icebreaker support where available and considered necessary.

4 Traffic clearance requests and reports required by this system shall be addressed to *NORDREG CANADA*. Requests and reports may be passed through any *Canadian Coast Guard Marine Communications and Traffic Services* centre free of charge. All times shall be given in *Co-ordinated Universal Time*.

5 *(For further information concerning Vessel Traffic Services in the Arctic, consult Radio Aids to Marine Navigation, available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*

6 Winter surveys in Peel Sound were made from 1980 to 1989 using a 2,000 m line spacing. Larsen Sound, the south part of Franklin Strait and M'Clintock Channel were surveyed in 1980 to 1994, as shown on *Chart 7573*; survey results are summarized at the appropriate places in the text. *(For details see Source Classification Diagrams shown on the charts.)*

7 *(For general* ***weather*** *conditions in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For present and forecast weather conditions, visit: http://www.weatheroffice.gc.ca/canada_e.html. For* ***climate*** *normals and averages for selected locations in this area, visit: http://www.climate.weatheroffice.gc.ca. For maps relating to general weather patterns, visit: http://atlas.nrcan.gc.ca/site/index.html.)*



8 *(For general **ice conditions** in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For detailed information on present and forecast ice conditions in this area, visit: http://ice-glaces.ec.gc.ca.)*

9 The **magnetic compass** is useless in the area described in this chapter.

Victoria Strait

Chart 7784

10 **Victoria Strait** *(69°30'N, 100°00'W)* separates Victoria Island from King William Island and leads northward from Queen Maud Gulf to Larsen Sound. The south limit of Victoria Strait is a line joining De Haven Point, on Victoria Island, to Cape Davidson, the SW extremity of Royal Geographical Society Islands, to Fitzjames Island, close off the SW part of King William Island. The north limit of the strait is a line from Pelly Point, on Victoria Island, to Cape Felix, on King William Island.

11 **Caution**. — Sparse soundings in Victoria Strait show mid-channel depths in the south part generally ranging from 18 to 55 m with a few mid-channel **shoals** having less than 18 m over them; the **least depth** near mid-channel is 2 m, 10 miles ESE of Driftwood Point. Mid-channel **depths** of 9 and 10 m lie between 10 and 15 miles ESE of Driftwood Point. **Depths** of 4 and 6.7 m lie 6 and 7.5 miles, respectively, south of Driftwood Point. A **depth** of 2.4 m lies 2 miles north of Scott Keltie Island. **Air photos** indicate an area of **shoals** on the east side 5 to 11 miles north and NNW of Little Point; a 9.1 m **shoal patch**, reported in 1981, lies 20 miles north of the same point.

12 *(Inside the magenta pecked lines on Chart 7784, the soundings are from the 1993/94 survey and are more complete than the surrounding areas.)*

13 The **tidal range** of large tides at John Halkett Island, on the west side of the strait, is 1.9 m; at Cape Felix at the NE end of the strait it is 1.7 m.

14 **Royal Geographical Society Islands** *(68°56'N, 100°21'W)* lie in the south entrance of Victoria Strait. The largest island is low, fairly level and completely bare for 10 miles south of **Wharton Point**, its north extremity. The rest of the island is hillocky but does not exceed an elevation of 30 m. **Cape Davidson** is its SW extremity. **Cape Adams** projects from the SE shore of the island. The islets lying off the south shore are also hillocky but no more than 15 m in elevation. The island 4 miles SW of Wharton Point is very low, composed of sand and gravel.

15 A tripod **beacon tower** 9.1 m high, with a red daymark and a radar reflector, is on the island 4 miles SW of Wharton Point. The tower has an elevation of 12.4 m.

SOUTH END OF ROYAL GEOGRAPHICAL SOCIETY ISLANDS (August 21, 1991)

BEACON 4 MILES SW OF WHARTON POINT (August 21, 1991)

RACON 10 MILES NNE OF M'CLINTOCK POINT (August 21, 1991)

16 **Scott Keltie Island** is separated from the shore east of Wharton Point by a shallow channel. A raised sand bar runs southward across the low island.

17 **M'Clintock Point** *(69°10'N, 100°08'W)* is at the north end of a peninsula about 30 m in elevation on the second largest island. The west half of this island is low and completely bare, but there are two isolated hillocks about 30 m in elevation in the NE part. The islands off the east coast are low with numerous shoals around and among them. The islet 10 miles NNE of M'Clintock Point is composed of hard packed sand, some gravel and boulders.

18 A tripod **beacon tower** 9.1 m high, with a red daymark, is on an islet 10 miles NNE of M'Clintock Point. The tower has an elevation of 20.4 m. *M'Clintock Point* **Racon**, identification *Morse* "C" (— • — •), is operated during the navigation season from the tower.

Victoria Strait — West Side

19 The coast of Victoria Island is of limestone formation and generally so low it is difficult to distinguish the shore from the off-lying ice.

20 **Taylor Island** *(69°10'N, 101°35'W)* has an isolated, flat-topped hillock at its south end. The **SE part** of the island, fairly level with an elevation of about 15 m, is **radar conspicuous**; the NW part is lower.

21 A tripod **beacon tower** 9.1 m high, with a red daymark and a radar reflector, is on the east extremity of Taylor Island. The tower has an elevation of 11.3 m.

22 The foreshore near the beacon is rock ledges with large boulders. A small bay south of the beacon is shallow with gravel beaches.

23 **Caution**. — The north half of Taylor Island is fronted by extensive **shoals**.

ROYAL GEOGRAPHICAL SOCIETY ISLANDS FROM BEACON SW OF WHARTON POINT (1991)

24 **Admiralty Island** is low and hummocky with a greatest elevation of 24 m; **Driftwood Point** is its east extremity.

25 A tripod **beacon tower** 9.1 m high, with a red daymark and a radar reflector, is on Driftwood Point. The tower has an elevation of 11 m.

26 **Caution**. — Admiralty Island is bordered by **shallow water**.

27 **Caution**. — The coast of Victoria Island north of Taylor Island is indented by a shallow bight with two **rock**- and **shoal**-encumbered inlets leading inland. A group of small islands, surrounded by **shoal water**, lies east of Admiralty Island.

Chart 7083

28 **Albert Edward Bay** is entered between **Cape Adelaide** and **Cape Alfred** *(69°40'N, 101°14'W)*. Raised beach lines are prominent.

29 **Caution**. — The shores of Albert Edward Bay are fringed by **shoal water** and there appear to be numerous **shoals** in the bay and its inlets. **Padliak Inlet**, which penetrates the south shore of the bay where the topography is quite flat, has extensive **shoaling** across its entrance and along its shores.

30 **Ice** normally begins to break-up in Albert Edward Bay during the last week of July; the bay clears in the first week of September. Freeze-up in the fall usually begins around mid-September with a complete ice cover forming during the last week of October. *(For more information, visit: http://ice-glaces.ec.gc.ca.)*

31 **Caution**. — Easterly winds during the navigation season can cause considerable **ice congestion** in the approaches to the bay.

32 The east coast of **Collinson Peninsula** is flat and scarcely above sea level; elevations of only 100 feet (30 m) are reached 6 miles inland. **John Halkett Island** *(69°57'N, 100°50'W)* is low, flat and gravelly with numerous ponds.

33 **Caution**. — **Shoals** lie between John Halkett Island and Victoria Island. **Air photos** indicate the two are joined by a narrow spit. Numerous islets and rocks lie up to 8 miles offshore between John Halkett Island and Pelly Point.

34 The **tidal range** of large tides at John Halkett Island is 6.3 feet (1.9 m).

35 **Pelly Point**, the NE tip of Collinson Peninsula, is low.

36 **Caution**. — **Shoal water** extends more than 2 miles offshore in the vicinity of Pelly Point and **shoal patches** exist between the point and the island 5 miles NNE.

Chart 7784

Victoria Strait — East Side

37 **Alexandra Strait** *(69°00'N, 99°40'W)* separates Royal Geographical Society Islands from **Graham Gore Peninsula** of King William Island. The peninsula is

TAYLOR ISLAND BEACON (1991)

composed of rolling tundra with many lakes and streams and its coast is extremely low. **Cape Francis Crozier** *(69°01'N, 99°34'W)* and **Cape Hodgson** are named features. **Hornby Island** and **Fairholme Island**, on the east side of the strait, are the largest of a group of low islands surrounded by shallow water.

38 **Caution**. — A single line of track soundings through Alexandra Strait shows **depths** ranging from 8.2 m to 44 m. A **depth** of 7.6 m lies 7 miles ENE of M'Clintock Point.

39 **Little Point** *(69°10'N, 99°15'W)*, formed by the north ends of low ridges, is at the north tip of Graham Gore Peninsula.

40 **Caution**. — The coast in the vicinity of Little Point is fringed by **shoal water** and islets.

41 The NW coast of King William Island is low, barren, and composed of limestone. The land rises behind the shore in a series of low shingle beaches to not much over 9 m.

42 **Erebus Bay**, named by M'Clintock in 1859 after one of Franklin's ships, has low shores; **Rivière de la Roquette** enters the SE part of the bay.

43 **Caution**. — The shore of Erebus Bay is fringed by **shoal water**. A **submerged rock** and a **shoal** lie off **Payer Point**. **Two Grave Bay** and **Grover Bay**, entered north of **Le Vesconte Point**, are encumbered with **submerged rocks**, **shoals** and islets.

44 **Seal Bay** *(69°28'N, 98°30'W)* is reported to be fairly deep and to have sandy beaches with shallow water lying off them.

45 The peninsula separating Seal Bay from Collinson Inlet rises to 50 m in its central part and has many raised beaches. **Franklin Point** *(69°35'N, 98°34'W)* is **radar conspicuous**.

46 **Caution**. — **Collinson Inlet**, entered between **Gore Point** and **Cape Jane Franklin**, has a mid-channel **shoal area** 4 miles within its entrance and **shoal water** bordering its shores. A peninsula obstructing the inlet 4 miles from its head is also bordered by **shoal water**.

47 **Back Bay** is a slight indentation of the coast between Franklin Point and **Victory Point**. Victory Point is inconspicuous and less than 9 m in elevation.

Chart 7083

48 **Cape Maria Louisa**, 6 miles north of Victory Point, is also inconspicuous, but an unnamed point 2 miles farther north shows up well on radar. **Wall Bay**, farther NNE, is shallow.

49 **Cape Felix** *(69°55'N, 98°05'W)*, the NE entrance point of Victoria Strait, is low but reported to be **radar conspicuous**.

50 A tripod **beacon tower** 30 feet (9.1 m) high, with a red daymark and a radar reflector, is on Cape Felix. The tower has an elevation of 44.1 feet (13.45 m).

51 The **tidal range** of large tides at Cape Felix is 5.6 feet (1.7 m).

Larsen Sound

Chart 7573

52 **Larsen Sound** *(70°30'N, 98°30'W)* is bounded to the south by a line joining Pelly Point to Cape Felix to Cape Francis, the north limits of Victoria and James Ross Straits. To the west and north, Larsen Sound is bounded by a line joining Pelly Point to Cape Swinburne, at the south end of Prince of Wales Island, to Andreasen Head on Boothia Peninsula; these are the south limits of M'Clintock Channel and Franklin Strait.

53 A survey at Larsen Sound, by spot soundings through the ice at intervals of about 1 mile, was made in 1981. Depths in Larsen Sound are generally 30 to 200 m.

54 **Caution**. — **Shoal areas**, reported in 1995, and patches of 14 to 25 m lie up to 18 miles off Boothia Peninsula in the approach to Pasley Bay.

Larsen Sound — East Side

55 **Cape Alexander** *(70°26'N, 96°26'W)* is the north extremity of a ridge of hills which rise to 60 m 2.5 miles NE of **Leiven Bay**. Northward, past **Cape Nicholas** to **Point Edwards**, the coast is formed of numerous raised beaches that reach an elevation of almost 90 m 3.3 miles south of the point.

56 **Pasley Bay**, where Larsen wintered in *St. Roch* in 1941/42, is entered between Point Edwards and **Point Davison**. The bay has three arms with gradually rising shores marked by raised beaches.

57 **Caution**. — A bank, 20 miles from north to south and 10 miles wide, lies about 10 miles west of the entrance to Pasley Bay. **Shoal water** and **obstructions** are on the north half of the bank. An **isolated shoal depth** of 16.5 m is about 3 miles north of the bank.

58 Spot soundings through the ice in 1981 show **depths** of 40 and 37 m 1 mile north and 1.5 miles NE of Point Edwards.

59 **Caution**. — Spot soundings in 1981 show a **shoal depth** of 7 m 1.5 miles SE of Point Edwards, and a **shoal depth** of 6 m 2 miles NNE of the north entrance point of Pasley Bay.

60 The **tidal range** in Pasley Bay is 1.2 to 1.8 m.

61 *(For general **ice conditions** in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For detailed information on present and predicted ice conditions in this area, visit: http://ice-glaces.ec.gc.ca.)*

62 **Historical Note**. — *St. Roch* was icebound in Pasley Bay from September 3, 1941 to August 4, 1942, during which time the bay was filled with consolidated drift ice. *St. Roch* anchored and wintered close to shore between the two streams that enter the south side of the NE arm.

63 Larsen's party erected a **cairn** at the north end of the point separating the SW and SE arms of Pasley Bay. Three **cairns** were also erected in the NE arm of Pasley Bay. The first is about 1 mile inland on the high ground between the two streams, the second close to the shore NE of the inner of the two streams, and the third is on the west shore about 1 mile inside the entrance.

64 Larsen reported that depths on the west and north sides of mid-channel in the NE arm ranged from 26 m at the entrance to 7.3 m 2 miles northward, increasing in the next 1.5 miles to between 18 and 24 m.

65 **Caution**. — A **sand shoal**, with 1.8 m over it, was reported to lie in mid-channel in the central part of the arm, abreast the cairn on the high ground. Larsen recommended that vessels entering the NE arm of Pasley Bay should follow the west shore to avoid the shoal.

66 A **cabin** is reported to exist *(1994)* on the south shore of the SE arm of Pasley Bay, about 1 mile inside the entrance.

67 **Caution**. — The SE arm of Pasley Bay has several islets and **shoals**.

M'Clintock Channel

Charts 7570, 7573

68 **M'Clintock Channel** *(72°00'N, 103°00'W)* leads from Larsen Sound to Viscount Melville Sound, between Victoria Island and Prince of Wales Island.

69 **Caution**. — A survey, by **spot soundings** through the ice at intervals of about 0.5 to 3.5 miles, was made in M'Clintock Channel in 1980/81. **Shoal depths**, including those adjoining the shores, were **not examined**. Soundings on *Charts 7573 and 7570* are based on these surveys. *(Some depth information on Chart 7573 is from track soundings recorded by Canadian Coast Guard vessel John A. Macdonald when it made the first passage through the channel in 1962.)*

70 No mid-channel dangers were detected during the 1980/81 surveys. Shoal depths near the shores are described below in conjunction with coastal features.

71 The **tide** in M'Clintock Channel is mixed, mainly semi-diurnal. It enters the channel from Viscount Melville Sound and requires 3 to 4 hours to travel south to Victoria Strait. The maximum range increases from 1.2 m in the north to 1.9 m in the south. The **tidal range** is 0.9 to 1.2 m on the east side and 1.2 to 1.5 m on the west side of M'Clintock Channel.

72 In 1962, a **current** was observed flowing about 140° at 0.8 knot through M'Clintock Channel. Over a 3 month period in the spring of 1983, mean flow was less than 0.1 knot and maximum flow less than 0.4 knot in the north section of the channel.

Chart 7573

M'Clintock Channel — East Side

73 The land on the east side of M'Clintock Channel is mainly low although there are a few stretches with moderate heights. Raised beaches are prominent features and some sections of the shore are fringed with shoal water.

74 **Cape Swinburne** *(71°13'N, 98°33'W)*, the south extremity of Prince of Wales Island, is low but a gentle slope covered with raised beaches rises 0.5 mile inland to about 50 m.

75 An island 4 miles NW of Cape Swinburne is about 15 m high and rises sharply from the water on its west side. **Air photos** indicate moderately deep water between the island and the mainland.

76 **Caution**. — A spot sounding indicates **depths** less than 10 m may extend 1 mile SW of the island.

77 The coast from this island past **Thackeray Point** to Cape Haughton slopes gently from the sea to about 60 m and is marked by raised beaches.

78 **Cape Haughton** *(71°48'N, 99°47'W)* is a low, muddy promontory.

79 **Harvey Point** *(72°07'N, 100°30'W)* was described by Young as "so low as scarcely to be distinguished from the sea".

80 Between Cape Haughton and Harvey Point the land is higher than that to southward and continues to be marked by raised beaches.

81 **Caution**. — Small sand bars, with **shoals** or tidal **mud flats** between them, lie SW and SE of Cape Haughton; **shoals** and many small sandbars fringe the coast to Harvey Point.

82 **Caution**. — The 10 m **depth** contour lies 1 to 5 miles offshore between Harvey Point and Cape Acworth, 48 miles NW.

83 **Landfall Island** is a flat island 11 miles SW of Harvey Point. Depths of 6 to 19 m lie between Landfall Island and Sydney Webb Point.

84 **Acland Bay** has low shores; several islands and islets are close offshore.

85 **Caution**. — The islands and the shore of Acland Bay are separated by **shoal water**. **Depths** in the bay, outside the islands, range from 3 to 9 m.

86 **Sydney Webb Point** *(72°10'N, 100°55'W)* is the south extremity of a low peninsula; an islet lies 1.5 miles west of the point.

87 **Caution**. — **Depths** of 2 m extend 2 miles south and east of Sydney Webb Point. The unnamed bay west of **McKinlay Point** has **depths** of 3 to 7 m and low shores fringed by **shoal water**. Islets and sand bars are in the approaches to the bay.

88 Two narrow sand bars are about 1 mile south of **Allen Young Point**; the longer is about 1 mile in length.

89 **Caution**. — A **shoal patch** with depths of 3 to 19 m lies 6 to 9 miles south and SSW of Allen Young Point.

90 **Sherard Osborn Point** forms the west side of **Crozier Bay**.

91 **Caution**. — Crozier Bay has **depths** of 4 to 9 m in its approaches and entrance. A group of islets, surrounded by and separated from shore by **shoal water**, lies 3 miles WNW of Sherard Osborn Point.

92 The coast from Sherard Osborn Point past **Hamilton Point** to Cape Acworth is very low and marshy with extensive tidal mud flats.

93 A flat-topped hill 2 miles ENE of **Cape Acworth** *(72°36'N, 102°27'W)* rises to 124 m. A **conspicuous**, isolated, conical **peak**, with an elevation of 116 m, is reported to be about 5.5 miles northward of the cape.

94 From Cape Acworth past **Webb Point** and **Cape Richard Collinson** to **Minto Head** *(73°05'N, 102°15'W)*, the coast is low with numerous shallow lakes close inland. In the north part of this stretch **Rawlinson Hills**, which are rounded, rise to almost 150 m.

95 **Ommanney Bay**, between Minto Head and Harrison Point, 23 miles NE, is bordered mainly by wide plains dotted with ponds. The highest ground is in the north part of the west side where Rawlinson Hills approach the coast near **Point Gell**. The land at the head of the bay is low and light coloured. Two groups of islands near the middle of the bay have elevations of about 9 m.

96 **Caution**. — The islands and much of the coast of Ommanney Bay are fringed by **shoal water** and there are several detached **depths** of 15 to 20 m.

97 **Hawkes Point** is the extremity of a low island. **Hollist Point**, **Dean Point**, with an elevation of 14 m 1 mile to the south, and **Bance Point** project from the west shore of the bay.

98 A **conspicuous** bare **hill** with steep sides and a rounded top rises to 111 m about 3 miles east of **Harrison Point** *(73°22'N, 101°17'W)*.

99 **Charles Richards Point** is the north extremity of an island on the south side of the entrance to **Smith Bay**. **Scott Bay** is 10 miles south of Smith Bay.

100 **Caution**. — The entrance of Scott Bay appears to be obstructed by islets and **shoal water**.

101 The **ice** in Ommanney Bay is predominantly first-year with 20 to 40% old ice scattered throughout. The bay is aligned such that NW winds can drive considerable quantities of multi-year ice into it from Viscount Melville Sound, most frequently during the first half of September.

Chart 7570

102 **Cape John Dyer** *(73°30'N, 101°38'W)* is low with raised beaches. Two islets north of the cape are low, narrow sand bars; those to the south are similar but wider.

103 The coast from Cape John Dyer to Drake Bay is low and featureless with raised beaches.

104 **Drake Bay**, entered south of **Baldwin Head** *(73°41'N, 101°03'W)*, is lower on the west side than on the east, but some low, rounded hills on the west side rise to **Mount Clarendon**, elevation about 120 m. The south part of the east shore of the bay is fairly steep rising to 180 m. **Hay Islands**, in the entrance to the bay, are low and featureless.

105 **Caution**. — A **shoal area** *(not shown on the chart)* lies north of the northernmost of Hay Islands.

106 The coast north of Baldwin Head has numerous raised beaches and is fairly low, although rising 2 miles inland to more than 60 m. **Ede Point** has an elevation of 18 m. **Cape Eden** is 3 miles NNE of Ede Point.

107 **Caution**. — The island off Cape Eden is fringed by **shoal water**.

108 **Cowper Point** is 2 miles NNE of Cape Eden.

109 **Milne Point** *(73°51'N, 100°51'W)*, the NE entrance point of M'Clintock Channel, is almost separated from the mainland at high water.

Chart 7573

M'Clintock Channel — West Side

110 The coast of **Victoria Island**, on the west side of M'Clintock Channel, is low and virtually featureless in its south part; only isolated hillocks are noticeable. Extensive mud flats and shoals exist offshore. Inland, there are innumerable lakes and ponds. **Storkerson Peninsula** is the NE tip of Victoria Island.

111 **Gateshead Island** *(70°35'N, 100°30'W)*, with several isolated hillocks more than 30 m in elevation and considerably higher than the neighbouring parts of the mainland, is comparatively prominent. The largest of the islands extending north of Gateshead Island has an elevation of about 30 m, the others are between 6 and 15 m high.

112 The unnamed island lying between Gateshead Island and Pelly Point is low for the most part but two isolated hillocks on its west side rise to about 15 m.

113 **Caution**. — **Shoal water** lies near the islets in the channel between Gateshead Island and the unnamed island just described; general depths in this channel are 5 to 30 m.

114 **Caution**. — The bay between Pelly Point and **Cape Admiral Collinson** is filled with **shoals**. **Shoal depths** of 1 and 2 m lie up to 7 miles off the cape.

115 **Moltke Island**, 5 miles ESE of **Cape Jensen**, has an elevation of 6 m. **Mylius Island** is 4 miles NW of the same cape. The land about 2 miles south and SW of **Cape Hansen** *(70°30'N, 102°36'W)* reaches elevations over 30 m.

116 **Caution**. — **Shoal depths** of 10 m lie 5 miles north and 9 miles NE of Mylius Island.

117 **Homan Bay** lies at the base of a gravelly peninsula with a maximum elevation of 26 m. **Cape Bentzen** is the east extremity, and **Cape Michelsen** the north extremity, of this peninsula. A **cairn** is reported to be on Cape Michelsen.

118 **Caution**. — **Denmark Bay**, entered between Cape Michelsen and **Cape Anker**, has **depths** less than 10 m and is full of **shoals**. **Falsen Island**, **Cloette Island** and the other islands in the bay are low. **Denmark Fiord**, at the head of the bay, has **depths** of 3 to 8 m.

119 **Caution**. — The coast from Cape Anker past **Cape Nygaard** to **Dietrichsen Point** is very low and appears from **air photos** to be fringed with **shoals** up to 1 mile wide.

120 **Caution**. — **Shoal depths** of 5 to 15 m lie 10 to 15 miles ENE of Cape Nygaard.

121 **Cape Sverdrup** *(70°59'N, 104°18'W)*, with two hillocks probably under 15 m in height, is the most prominent feature in this area; it is ringed with raised beaches. **Cairns** were erected on the cape by the Amundsen expedition.

122 **Norway Bay**, between Cape Sverdrup and **Isachsen Point**, has very low shores.

123 **Caution**. — **Shoals** and islets lie up to 5 miles off Norway Bay.

124 The land about 2 miles inshore of **Clausen Point** and **Cape Wiel** rises to more than 30 m.

125 **Frederikshald Bay**, entered south of **Cape Stang** *(71°21'N, 104°17'W)*, has low shores and appears from **air photos** to be fringed by a beach of mud or sand. The islets close off the west shore of the bay are very low.

126 **Caution**. — **Shoals**, extending up to 0.7 mile offshore, line Frederikshald Bay.

127 **Cape Johnke** has an elevation of 16 m.

128 **Caution**. — The 15 m **depth** contour lies 1 to 3 miles off the shore, or coastal islands, between Cape Johnke and Goldsmith Channel.

129 **Cape Copenhagen** is a low, featureless island joined to the mainland by mud flats. **Torup Point** is low and inconspicuous.

130 **Caution**. — **Shoals** surround Torup Point and the islets to the east.

131 **Greely Haven**, entered west of **Ristvedt Point**, has beaches and a shoreline of large limestone rocks surrounded by low, flat terrain. A hill, with an elevation of 44 m, 5 miles WSW of **Cape Geelmuyden** was described by Amundsen as the "most easily recognized point on the entire coast".

132 **Caution**. — **Air photos** indicate **shoaling** in the upper half of Greely Haven and to a lesser extent at its mouth. Amundsen, however, from the presence of large masses of sea ice in the haven, considered there was plenty of deep water.

133 **Caution**. — A **shoal** with 6 m over it, discovered in 1980, is located 3 miles NE of Cape Geelmuyden.

134 The coast, from Cape Geelmuyden past **Cape Nansen** *(72°09'N, 104°56'W)* to the entrance of Goldsmith Channel *(72°59'N, 105°14'W)*, is formed by the east side of Storkerson Peninsula. Numerous islets lie close off the northernmost 20 miles of this stretch. Elevations inland are greater than to the south, reaching more than 150 m in the central part of the peninsula.

Charts 7570, 7573

135 The west side of M'Clintock Channel north of Goldsmith Channel *(72°59'N, 105°14'W)* is formed by Stefansson Island. The coastal terrain in the south part of this island is undulating and low, but toward the north the land slopes up evenly to an escarpment about 1 mile inland, and elevations more than 100 m exist 2 miles inland.

136 *(Goldsmith Channel and Stefansson Island are described in the next chapter.)*

Franklin Strait

Charts 7575, 7573

137 **Franklin Strait** is the south part, and Peel Sound the north part, of the waterway leading from Larsen Sound to Barrow Strait. The south limit of Franklin Strait is a line joining Cape Swinburne and Andreasen Head; its north limit is a line joining Cape Eyre *(71°50'N, 96°31'W)* to Leask Point, at the entrance to Bellot Strait.

138 The terrain on the west side of the strait is low and featureless in the south part but north of Guillemard Bay the land rises to moderate elevations. The east side has heavily rolling terrain in the south, becoming more rugged and precipitous in the north.

139 *(For general ice conditions in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For detailed information on present and predicted ice conditions in this area, visit: http://www.ice-glaces.ec.gc.ca.)*

140 The **tide** in Franklin Strait and Peel Sound is mixed, mainly semi-diurnal. It requires 3 to 4 hours to travel north from Franklin Strait to the north end of Peel Sound.

141 The **tidal range** of large tides is 0.8 m in Franklin Strait and 1.1 m near the north end of Peel Sound.

142 **Caution**. — **Surveys** in Franklin Strait are from reconnaissance surveys consisting of spot soundings through the ice at intervals of about 1 mile. *(See the Source Classification Diagrams on the charts.)*

Chart 7573

Franklin Strait — East side

143 The coast from **Andreasen Head** *(70°49'N, 96°37'W)* to Weld Harbour is composed of gently sloping limestone with numerous raised beaches.

144 **Weld Harbour** *(71°04'N, 96°23'W)* affords good shelter.

145 **Caution**. — **Air photos** indicate **shoal water** fringes most of Weld Harbour.

Chart 7575

146 **Hartstene Point** *(71°12'N, 96°25'W)* is the north entrance point of **Lady Murchison Bay**. An islet lies 1 mile off the point. Elevations over 330 m occur 6 miles inland.

147 The largest of **Tasmania Islands**, separated from the mainland by **Shortland Channel**, has an elevation of 170 m, but all the **islands** are fairly rocky and **conspicuous** and give good radar echoes. **Toms Island** *(not named on the charts)*, the only named island of the group, lies west of the NW side of the largest island and rises to 120 m. There are good **anchorages**.

148 The **tidal range** of large tides at Tasmania Islands is 1 m.

149 **Graham Island** lies 3 miles NE of **Cape Rendel** *(71°16'N, 96°29'W)*.

150 **Cape Hobson**, 8 miles NE of Graham Island, is a low rocky point rising to 140 m 2 miles to the south.

151 **Wrottesley Inlet** lies between Cape Hobson and **Cape Maguire**. The south shore of the inlet is low, rising gradually over raised beaches to rugged terrain. The SW shore rises steeply to over 270 m, becoming low and rocky toward Cape Hobson. Several islets lie close off the SW shore near the cape. **Wrottesley River** enters the head of the inlet south of **Reid Point** through a large SE-trending valley. It has discoloured a large area of the inlet 3.5 miles beyond its mouth. The east side of the inlet is rocky and numerous islets lie off its east and south shores.

152 **Pattinson Harbour** *(71°30'N, 95°25'W)* is entered between **Kangirlujjuaq Point** *(not named on the charts)* and **Point Liardet**. The entrance is obstructed by three islets and a larger island. The outer shores of the harbour are low and rocky, the inner shores are high with cliffs, in places, rising to more than 150 m. **Amituryouak Lake** and **Probe Lake** drain into the harbour.

153 **Ice** conditions in the south end of Franklin Strait, during the shipping season, depend on the amounts of drift ice left over from the local melt and old drift ice coming from the west and north; local break-up normally begins during the first week of August and freeze-up during the last week of September. *(For more information, visit: http://ice-glaces.ec.gc.ca.)*

154 The coast from Cape Maguire past **Cape Sir F. Nicholson** to Gibson Island is rocky, irregular and relatively low, rising inland to rugged hill country 270 m and more in elevation. Numerous small islets lie close offshore, usually less than 30 m in elevation.

155 **Gibson Island** has a greatest elevation of 150 m. It is separated from the mainland by **Goldsmith Channel** *(71°47'N, 95°15'W)*, which has steep rocky shores rising to rounded hills. **Kangirlukutaak Inlet** penetrates Boothia Peninsula to within 2.4 miles of its east shore.

155.1 **Caution**. — A **shoal depth** of 2.2 m, reported in 2012, lies 4.8 miles west of the SW end of Gibson Island.

156 **Coutts Island** *(71°50'N, 95°32'W)* has low shores rising inland to almost 30 m.

157 **Caution**. — A **rock** that dries 0.8 m lies 1 mile north of Coutts Island.

Franklin Strait — West side

158 The coast from Cape Swinburne, previously described, past **Foster Point** *(71°25'N, 98°12'W)* to **Charles Dickens Point** is low and featureless with a sandy or muddy beach. Inland there are numerous bare, raised beaches.

159 **Caution**. — Islets and **shoals** extend more than 1 mile offshore about 6 miles NE of Cape Swinburne.

160 **Guillemard Bay** extends 25 miles NW and north to **Fisher River** at its head.

161 The outer 16 miles of the SW shore of Guillemard Bay has a few raised beaches and the present beach is very narrow. The NW side of the bay has steep shores rising to about 60 m. The land at the head of the bay is low. The islands in the bay are low except for the large island 11 miles from the head which has an elevation more than 30 m.

162 **Caution**. — There is **shoal water** around and among the islands in Guillemard Bay.

163 The north side of Guillemard Bay is fairly low with numerous raised beaches. The outer part of the east side has low land near the coast but a bare and moderately steep escarpment runs parallel to shore about 1 mile inland.

164 **Caution**. — Most of the coves on the north side of Guillemard Bay appear to be **shoal**. All the east side of the bay appears to be fringed with **shoal water**.

165 *(For general **ice conditions** in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For detailed information on present and predicted ice conditions in this area, visit: http://ice-glaces.ec.gc.ca.)*

166 *(For general **weather conditions** in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada and for present and forecast weather conditions, visit: http://www.weatheroffice.gc.ca/canada_e.html.)*

167 The coast from Guillemard Bay to **Coningham Bay** rises gradually to 120 m about 2 miles inland and has numerous raised beaches. This stretch of coastline is reported to give poor radar echoes.

168 **Hobday Island**, about 70 m in elevation and with **Point Walker** at its NE extremity, forms the south side of Coningham Bay. **Dixon Island** *(71°40'N, 96°50'W)*, 3 miles SSE of Hobday Island, has a steep ridge with an elevation of 60 m at its east end; its central part is low. The unnamed island 2 miles NE of Coningham Bay is bare, flat and probably about 15 m in elevation.

169 **Caution**. — The west part of Dixon Island is indented by a **shallow** cove. **Shoal water** extends from the west shore of the island. Two islets and a large **shoal bank**, parts of which may dry, lie between Dixon Island and Hobday Island. The channel between Hobday Island and Prince of Wales Island has **shoals** across its south end. The south part of the west shore of Coningham Bay is fringed with **shoal water**, the north part is very low. The inlet in the NE part of the bay has **shoals** across its entrance. An **obstruction**, depth unknown, exists 1 mile NE of the unnamed island NE of Coningham Bay.

170 **Cape Eyre** *(71°50'N, 96°32'W)* is the NW entrance point of Franklin Strait. The cape is a rounded hill, moderately steep all around, with a small area of flat summits about 120 m in elevation. It is mainly bare with raised beaches on its lower slopes blending into horizontally bedded rock above. A summit with an elevation of 206 m is about 3 miles NNW of the cape.

Bellot Strait — West Approach

Chart 7552

171 **Arcedeckne Island** *(71°54'N, 95°23'W)* and the **islands** close off the mainland coast to the east are **conspicuous** and rocky with elevations of about 30 m.

172 **Caution**. — An **obstruction**, on a **shoal** with 4 m over it, lies 1.8 miles ENE of Arcedeckne Island and there are probably other **shoals** in this vicinity.

173 The mainland coast from Arcedeckne Island to Bellot Strait consists of low, irregular rocky hills forming low points and indentations, rising inland to rough terrain over 300 m in elevation.

174 The west entrance to **Bellot Strait** lies between **Hepburn Point** and **Leask Point** *(71°58'N, 95°11'W)*. Both points are low and rocky.

175 *(Bellot Strait is described fully in Sailing Directions for Arctic Canada Vol. II.)*

176 **Pemmican Rock** is small and rocky; it and another close SSE are, like other rocks and islets in the vicinity, difficult to distinguish against the shoreline in some light conditions.

177 A tripod **beacon tower** 9.1 m high, with a red daymark and a radar reflector, is on Pemmican Rock. The tower has an elevation of 17.7 m.

178 **False Strait** affords good **anchorage** for vessels awaiting favourable conditions to make the eastward passage through Bellot Strait. There is shelter from all but westerly winds and good holding in 27 m about 1 mile within the entrance.

179 **Caution**. — False Strait **shoals** fairly rapidly beyond the anchorage.

180 The **tidal range** of large tides in the west approach to Bellot Strait at False Strait is 0.8 m and in the east approach at Fort Ross it is 2.9 m. *False Strait (Index No. 6100)* and *Fort Ross (Index No. 5930)* are reference ports in *Canadian Tide and Current Tables, Volume 4*.

181 **Cape Bird** *(72°00'N, 95°13'W)*, composed of steep red cliffs rising between 90 and 120 m, is not conspicuous among numerous similar capes along this coast. **Spar Islands**, 3 miles west of Cape Bird, are low and rounded; the south and higher of the two largest islands has an elevation of about 6 m.

182 **Caution**. — An isolated **shoal depth** of 6.8 m lies 2 miles WNW of Spar Islands.

183 From Cape Bird to Fitz Roy Inlet, 6 miles north, the coast is rugged and irregular, rising to low rocky hills between 60 and 90 m in elevation near the coast and to higher rugged land farther east. There are many small bays and points and occasional islets. An unnamed inlet 5 miles north of Cape Bird has an island 30 to 60 m in elevation off its entrance.

184 **Fitz Roy Inlet** is entered between low rocky capes. The shores become higher and steeper 2 miles inside the entrance and in the inner part rise to over 250 m.

185 **Caution**. — An above-water **rock** 0.1 mile in diameter lies on a **shoal bank** 0.5 mile off the north entrance of Fitz Roy Inlet; a small rock with an elevation of 1 m is between the 0.1 mile diameter rock and the Somerset Island shore. Another small rock with an elevation of 1 m is near the SW end of a **shoal** 0.6 mile west of the north entrance of Fitz Roy Inlet.

Peel Sound

Charts 7575, 7573, 7570

186 **Peel Sound** *(72°50'N, 96°10'W)*, between **Somerset Island** on its east side and **Prince of Wales Island** to the west, connects Franklin Strait to Barrow Strait. Its south limit is a line joining Cape Eyre and Leask Point; the north a line joining Lyons Point on Prince of Wales Island to Pressure Point on Somerset Island. **Franklin Trough**, at the west side of the south end of Peel Sound, has depths in excess of 400 m.

187 **Caution**. — **Surveys** in Peel Sound are from reconnaissance surveys consisting of spot soundings through the ice at intervals of about 3 miles. *(See the Source Classification Diagram on the charts.)*

188 A nontidal **current** of 0.3 knot has been observed to flow in a south direction on the west side and a north direction on the east side of Peel Sound.

189 *(**Tidal** and **ice information** for Peel Sound are given with the description of Franklin Strait.)*

190 The coast on the east side of Peel Sound is rocky, rising to about 100 m close to the sea and over 300 m within a few miles of the coast. Numerous small islands, islets and rocks lie close offshore. The west side of the sound is much more regular with smoothly flowing slopes and few indentations. In the south part, rounded limestone hills with even crest-lines are characteristic. The terrain inland is generally lower than the coastal area, which is virtually free of islands and shoals.

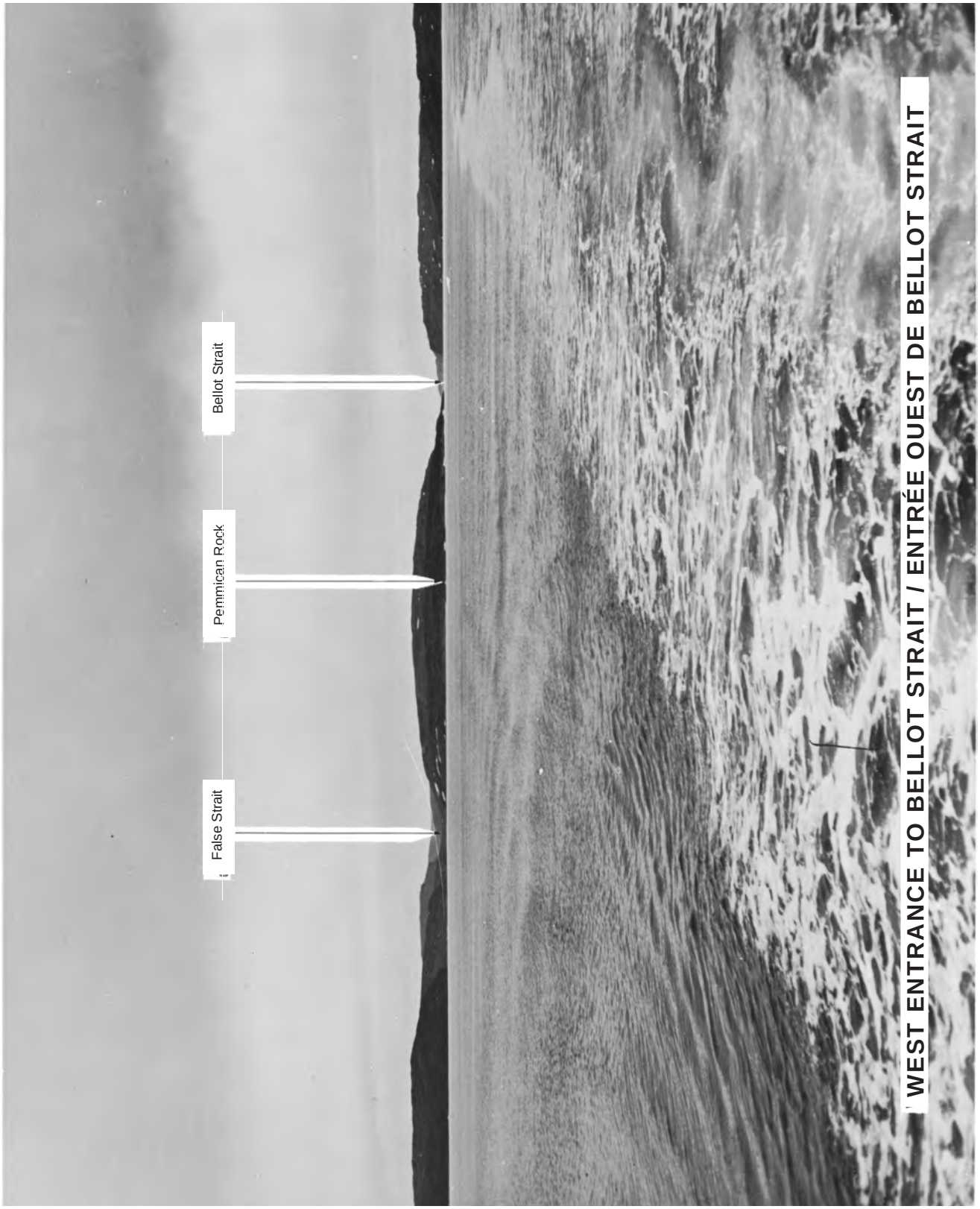
Charts 7575, 7573

Peel Sound — South Part — East Side

191 **De la Roquette Islands** *(72°10'N, 95°28'W) (Chart 7552)* are 6 miles WNW of Fitz Roy Inlet *(previously described)*. The largest island has an elevation of about 50 m.

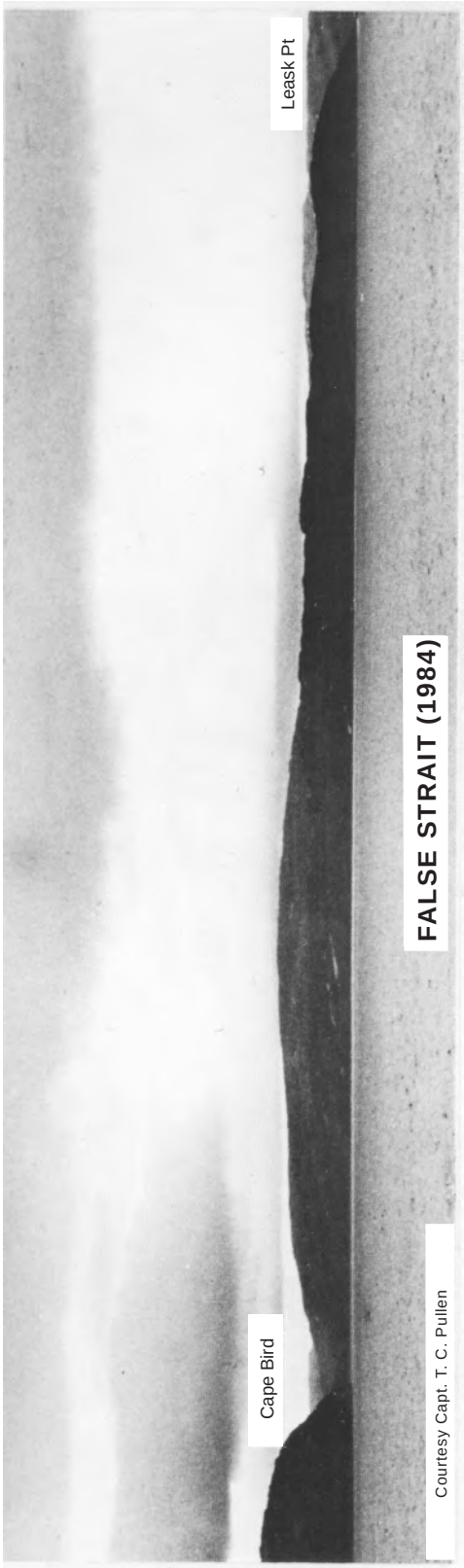
192 **Caution**. — Isolated **shoal depths** over a rock bottom are within 3 miles south to SE of De la Roquette Islands. Among these are a **depth** of 0.9 m found 1.8 miles SSE of the south tip of the largest island; a 10.4-m **depth** found 1.4 miles south of the same point, and

WEST ENTRANCE TO BELLOT STRAIT (1957)



WEST ENTRANCE TO BELLOT STRAIT / ENTRÉE OUEST DE BELLOT STRAIT

FALSE STRAIT (1984)



a **depth** of 8.5 m, found 0.5 mile from the SE point of the largest island. An uncharted **shoal** may exist 0.75 mile WNW of the westernmost island.

193 **Cape John Sibthorpe** has a small island 1.5 miles to the north.

194 **Hurditch Peninsula** *(72°27'N, 95°15'W)* rises gently to 100 m and is connected to the mainland by low land.

195 An islet, about 60 m in elevation, lies 4 miles SW of Hurditch Peninsula. A smaller islet, 2 miles farther SSE, is low-lying but has three jagged little peaks. Both islets show up well on radar.

196 The inlet entered north of Hurditch Peninsula has low rocky shores except at its head where there are a beach and two small deltas. Its north entrance point is low but rises to about 60 m. The outer of two small islands off the point is 20 to 30 m in elevation. A bay on the north side of the point has low shores and narrow beaches.

197 **Caution**. — The bay has a small **shoal** close off its entrance.

198 For 4 miles NNW of the bay described above, the coast is low and rocky in places with knobby hills rising to about 50 m behind beaches of alluvium. The interior rises gradually, reaching 400 m 3.5 miles inland. At the NNW end of this sector a broad rounded cape rises gently to about 210 m.

Peel Sound — South Part — West Side

199 The coast from Cape Eyre *(previously described)* to Willis Bay, 7 miles north, is straight and smooth, rising gradually to rounded limestone hills over 120 m in elevation. In places, short sections of the seaward slope are steep but nowhere do cliffs occur.

200 The south entrance point of **Willis Bay** *(71°56'N, 96°30'W)* is a rounded cape which rises fairly quickly to about 90 m and has a number of raised beaches; the north entrance point rises less steeply. The shores of the bay are low and several streams have built small deltas. Rounded hills rise more than 150 m on both sides of the bay but the land leading SSW from the head is low.

201 Between Willis Bay and **Cape Dalgety**, a bold steep-sided headland 5 miles north, the coast rises smoothly to more than 180 m and there is a 234 m summit.

202 **Transition (Kennedy) Bay** *(72°03'N, 96°37'W)* has low shores rising to rounded hills in the outer part but the land at the head of the bay is low. On the north side of the inner part of the bay there is an extensive delta where several streams enter, but deep water reaches to within 0.1 mile of the shore.

203 From Transition (Kennedy) Bay to Strzelecki Harbour the coast in the south part is low, rising to rounded hills; toward the north the coastal slope becomes steeper and the beach very narrow.

204 **Strzelecki Harbour** has a rounded peninsula rising gently to 90 m forming the east side and on the west a rough

ridge of rock rises sharply to more than 150 m. The west part of the north shore is low. The two hills north and south of the harbour stand out clearly on radar.

205 **Le Feuvre Inlet** *(72°18'N, 96°42'W)* is entered between low points backed by steep slopes rising over 180 m. The inner part of the inlet penetrates low-lying land; a delta is at the head of the inlet.

206 Between Le Feuvre Inlet and **Cape Brodie** the coast rises steeply to over 150 m. At Cape Brodie, steep crystalline rocks rise abruptly to 150 m then gradually to 250 m 1 mile inland.

207 Between Cape Brodie and Flexure Bay, 8 miles north, the coast is steep rugged cliffs, with elevations more than 180 m.

208 The entrance points of **Flexure Bay** are low and rounded; the north point is backed by a higher ridge. Two small deltas backed by a rugged, broken ridge are at the head of the bay.

Peel Sound — North Part — East Side

209 **Barth Island** *(72°35'N, 95°32'W)*, on the east side of Peel Sound, is a rounded hummock with an elevation over 60 m. **Otrick Island** and the larger of the islets to the NNE have elevations over 30 m. The remaining islets in the vicinity are low and rocky. An islet 1 mile SSE of Barth Island is very low-lying and gives only a weak radar response.

210 The mainland shore east of Barth Island and Otrick Island is very irregular with numerous small rocky points and small bays with beaches at their heads.

211 A large headland is 3 miles north of Otrick Island. The south half of the headland rises to a broad domed hill with an elevation of 250 m; the north half is about 150 m in elevation and the immediate coast is fairly low.

212 **Four Rivers Bay** *(72°46'N, 95°35'W)* has rounded hills rising from its shores to between 90 and 150 m. A rocky islet and two rocks close south of it lie in the centre of the bay. A rocky peninsula projects from the north shore of the bay, forming a small inlet on the east side of the peninsula.

213 The coast for 15 miles north of Four Rivers Bay is steep and rocky with elevations more than 150 m a short distance inland. Three large and several smaller islands lie close off this stretch.

214 **Cape Coulman** *(72°47'N, 95°42'W)*, at the south end of the south large island, is a low, rounded, rocky peninsula which probably has a greatest elevation of 50 m. A small islet lies close south of the cape. The west side of the south large island rises in steep cliffs to more than 180 m.

215 Three small islands lie north of the island described above. The westernmost and highest is dome-shaped with an elevation of about 140 m.

216 **Bear Island** *(72°58'N, 95°51'W)* is small but prominent, rising steeply to about 100 m. The large island close east has three distinct rounded peaks.

217 The third large island, 6 miles NNE of Bear Island, is separated from the mainland by a steep-sided channel. The channel is deep except near the small islands at its south end. The third large island is highest in its west and central parts. **Hummock Point** and the NE part of the island are low.

218 **Howe Harbour** has an escarpment, with steep cliffs over 180 m in elevation, running parallel to its south shore.

219 **Caution**. — The NE and south parts of Howe Harbour are **shoal**. **Air photos** indicate two **shoal rocks** in the inner part of the harbour.

Chart 7573

220 The coast between Howe Harbour and **Cape Court** *(73°20'N, 95°38'W)* is of moderate elevation, seldom more than 90 m, and indented by numerous small bays.

Chart 7570

221 **Birmingham Bay** *(73°23'N, 95°37'W)* has a steep sloping cliff on its south side. From **air photos**, the bay appears to be deep.

222 **Wadworth Island** has a round hummock with an elevation more than 30 m in its centre; the remainder of the island is low and flat but shows up well on radar. **Air photos** indicate the channel between Wadworth Island and the mainland is deep.

223 About 2 miles NNE of Wadworth Island there is a river delta 0.5 mile wide. The coast between the delta and M'Clure Bay is irregular and of moderate elevation, becoming lower toward the north; numerous small islands lie close offshore.

224 **M'Clure Bay** *(73°38'N, 95°37'W)* has low, rounded shores. A rounded island with an elevation more than 30 m is in the entrance to the bay. **Cape Whitehead**, the north entrance point, rises to 30 m 0.7 mile inland.

225 **Caution**. — **Air photos** indicate **shoals** lying in the upper part of M'Clure Bay; also indicated is a **sand bar**, surrounded by **shoals**, lying off the tip of Cape Whitehead.

226 **Cape Granite** is a rocky point less than 30 m high projecting NW from hills. An islet about 0.2 mile long from north to south, and 9 m in elevation, lies 1.5 miles WSW of Cape Granite.

227 The **tidal range** of large tides at Cape Granite is 1.1 m.

Charts 7570, 7569

228 **Aston Bay** *(73°46'N, 95°09'W)* has steep, level-topped shores on the NE side; ravines cut the shore in places. On the south side, 4 miles within the entrance, a **conspicuous**,

precipitous **bluff** rises more than 180 m. **Hunting River** flows into the south part of Aston Bay, and **Aston River** flows out of an alluvium-filled valley into the head of the bay through a large delta.

229 **Caution**. — **Air photos** indicate **shoal water** extends for some distance off the Aston River delta.

230 An island 5 miles from the head of Aston Bay has an elevation of 30 to 60 m.

231 The largest and northernmost inlet on the NE side of Aston Bay has steep shores except at its head where **Donner River** enters through a large delta.

232 **Caution**. — A **shoal** about 0.5 mile long lies in mid-channel at the entrance to the northernmost inlet.

233 Two steep-sided inlets, lying close together 5 miles SE of the largest inlet on the NE side of Aston Bay, appear from **air photos** to have deep water.

234 **Caution**. — **Shoals** lie off both entrance points of the southernmost inlet.

235 Low islands and islets lie off the entrance to an inlet just inside the south entrance point of Aston Bay.

236 The coast between Aston Bay and Pressure Point is moderately steep but **Pressure Point** *(73°59'N, 95°18'W)*, the NE entrance point of Peel Sound, has steep cliffs rising sheer from the water to more than 150 m.

Chart 7575

Peel Sound — North Part — West Side

237 The coast from Flexure Bay to an unnamed bay *(72°41'N, 96°33'W)*, 8 miles north, is paralleled by a series of three or four high, steep ridges which reach elevations of 150 m in places. The ridges are broken by gullies fronted by small deltas. The unnamed bay has generally steep shores which in places rise abruptly to rough rocky ridges; its north side is formed by a peninsula whose east side consists of a remarkable straight line of cliffs rising unbroken and precipitously for about 150 m, falling off abruptly in the north to the sharp, low extremity of **Savage Point**. The steep bluffs behind Savage Point are brilliant red sandstone slabs which led Captain Allen Young's men, of HMS *Pandora* in 1875, to refer to it as "Cape Brickfield".

238 **Young Bay** *(72°41'N, 97°00'W)* is entered between **Pandora Island** and the **conspicuous cliffs** projecting NW from the peninsula terminating in Savage Point. The east side of the bay slopes gently up to a flat-topped plateau cut in several places by stream valleys. The west side has gently sloping shores for 5 miles within the entrance and then is low and marshy to the head. Several islets lie close offshore in the inner part of the bay.

239 **Caution**. — The interior of Young Bay is **shallow**. Considerable **shoaling** occurs off the mouths of streams entering the SW part of Young Bay.

240 **Cape M'Clure** *(72°54'N, 96°41'W)*, the north extremity of Pandora Island, is a precipitous rocky promontory more than 200 m high. The east side of Pandora Island is fairly steep for 5 miles south of Cape M'Clure, then trends 1.5 miles SE as a precipitous bluff 230 m high. The remainder of the east side is moderately steep, but without cliffs, and of light-coloured rock. The west side of the island is gently sloping with numerous water courses in the south, becoming progressively steeper toward the north.

241 **Caution**. — A passage between the west side of Pandora Island and Prince of Wales Island is almost blocked by **shoal water** and a small island. Several **obstructions** are in the shallows north of the small island. The coast of Prince of Wales Island west of Pandora Island is low, gently sloping, and fringed by **shoal water** in places.

242 **Muskox Hill**, 10 miles west of Pandora Island, has an elevation of about 150 m.

243 **Caution**. — An inlet 3 miles north of Muskox Hill is deep in its outer part but **shallow** at its head.

244 **Prescott Island** *(73°04'N, 96°51'W)* has a **conspicuous headland** of light-coloured rock in its south part with an elevation of 260 m. The east side of the island is high and steep, of uniform height, and marked by raised beaches. The west side rises gently and has numerous streams flowing through shallow ravines. The north part of the island is steep, with scree below the cliffs. An inlet in the NE part of the island has a light-coloured ridge on the west side and moderately steep cliffs of darker rock on the east; from **air photos** the inlet appears to be deep to within 50 m of shore.

Chart 7573

245 **Browne Bay** lies between a small point 10 miles WNW of Cape M'Clure, on Pandora Island, and the south end of a peninsula 3 miles SSW of Sherard Head *(73°24'N, 97°08'W)*.

Chart 7575

246 The south shore of Browne Bay, NW of the small point WNW of Cape M'Clure, is formed of gently sloping light-coloured rock for 4 miles then gives way to the darker rock of a low, weathered escarpment which reaches the coast 8 miles ESE of **Cape Henry Kellett** *(73°03'N, 97°50'W)*.

247 **Caution**. — The south shore of Browne Bay is bordered by **shoal water** up to 5 miles wide. Cape Henry Kellett is low and bordered by **shoal water** with many **obstructions**.

Chart 7573

248 The north shore of Browne Bay rises rather steeply to inland hills for 5.5 miles SW of the north entrance point. For the next 10 miles SW the coast and the terrain for several miles inland are low and the shore is bare and sandy.

Chart 7575

249 The remainder of the west side of Browne and Inner Browne Bays is formed by a flat coastal plain 1.5 miles wide. Behind the coastal plain there is a steep, flat-topped escarpment with many ravines.

Chart 7573

250 **Caution**. — Extensive **shoals**, beginning 4 miles west of the north entrance point and in some areas over 4 miles wide, border the north shore of Browne Bay.

Chart 7575

251 **Caution**. — **Maze Islands** *(73°04'N, 98°00'W)* are low-lying and numerous with **shoal water** around and between them.

252 **Inner Browne Bay** has **Home Point** *(Chart 7573)* on its west side, and **Dolphin River** *(Chart 7573)* at its head. The east side of the bay is formed by a low marshy coastal strip 2 miles wide with a low, weathered escarpment behind it. **Scarp Brook**, entering Inner Browne Bay 4 miles north of Home Point, has several islets off its mouth.

253 **Ice** normally breaks-up in Browne Bay in the second week of August and freeze-up begins the third week of September. On average, the bay is clear of ice for three to four weeks. *(For more information, visit: http://ice-glaces.ec.gc.ca.)*

254 **Vivian Island**, more than 120 m high, has a bold, distinctive appearance with a plateau-like top. The north and south sides are steep. Three prominent bluffs are on the east side; the middle and most prominent is about 0.75 mile long and rises sheer from a coastal plain 0.25 mile wide. The bays between the bluffs and most of the SW side of the island have low shores.

Chart 7570

255 **Lock Island** *(73°18'N, 97°11'W)* is reported to be shaped like a pork pie. A flat-topped escarpment in its central part is surrounded by a coastal plain about 0.3 mile wide. **Binstead Island**, 2 miles NE, has an elevation of about 120 m and is steepest on its east side.

256 **Sherard Head** *(73°24'N, 97°08'W)*, elevation about 60 m, is marked by raised beaches. A bay between Sherard Head and Whitehead Point is lined by hills of light coloured rock. **Conspicuous** flat-topped **hills** of this type of rock are 2 and 6 miles NW of Sherard Head, the latter with an elevation of 330 m.

257 **Back Bay** is entered between **Whitehead Point** and **Bettison Point**, 5 miles north. **Lowrie Island**, 3 miles NNE of Whitehead Point, has a fairly sharp summit. The north side of the outer part of Back Bay is formed by a low coastal plain backed by a bare escarpment covered with raised beaches.

258 **Caution**. — A sand delta in the north extremity of the outer part of Back Bay is fronted by **shallow water** for about 100 m.

259 **Harvey Peninsula**, extending into the bay from the north side, rises to a **conspicuous** flat-topped **hill** with an elevation of 70 m. A prominent hill with an elevation more than 300 m rises 7 miles NW.

260 **Caution**. — The inner part of Back Bay has very low shores fronted by **shallow water** for 100 m offshore.

261 **Mount Matthias** *(73°29'N, 97°27'W)*, a **conspicuous** round **hill** about 150 m in elevation, is on a broad peninsula that bisects the south part of Back Bay.

262 **Cape Briggs** *(73°38'N, 96°57'W)* rises 1 mile inland to a flat-topped bluff with an elevation of about 180 m. A point 7 miles north of Cape Briggs is marked by prominent cliffs. The coast from these cliffs to **Birthday Bay** rises gently to a low, flat-topped plateau.

263 The **tidal range** of large tides at Cape Briggs is 1.1 m.

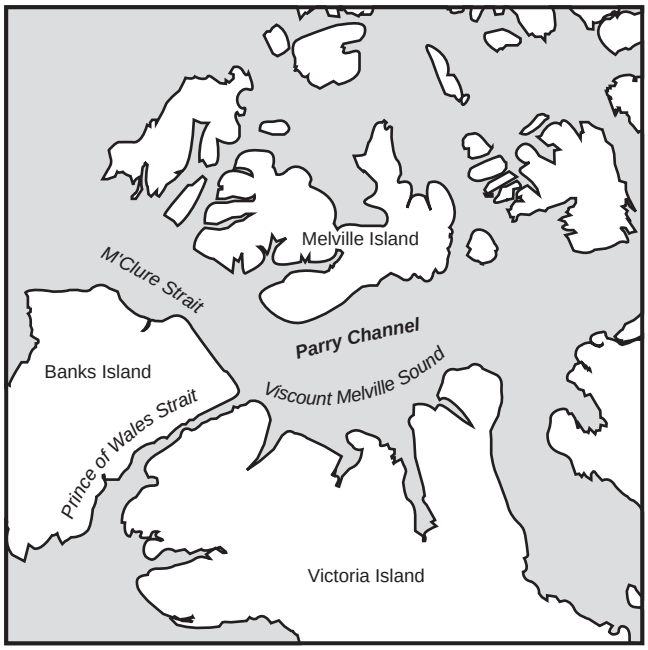
264 **Lyons Point** *(73°51'N, 97°11'W)*, the NW entrance point of Peel Sound, is low and marked by numerous raised beaches. A steep, rocky bluff, over 60 m in elevation, is about 0.75 mile inland.

Parry Channel
West part

General

Charts 7520, 7521, 7540, 7570, 7571, 7572, 7832

1 **Parry Channel** *(74°20'N, 98°00'W)* leads west from Baffin Bay to the Beaufort Sea and Arctic Ocean, a distance of about 720 miles, separating the Queen Elizabeth Islands to the north from the remainder of the Canadian Archipelago to the south.



2 The most ice-free route through Parry Channel to the Arctic Ocean comprises the northern part of Barrow Strait through Resolute Passage and Intrepid Passage *(described in ARC 402)* and then along the northern part of Viscount Melville Sound. The route then leaves Parry Channel and continues SW through Prince of Wales Strait to Amundsen Gulf and the Beaufort Sea.

3 This chapter describes the west part of Parry Channel, made up of Viscount Melville Sound and M'Clure Strait, and includes Prince of Wales Strait, between Victoria Island and Banks Island.

4 *Northern Canada Vessel Traffic Services (NORDREG) Zone* covers all waters described in this chapter. The primary objective of this system is to assist the master in the safe and expeditious conduct of the vessel by promulgating information on ice conditions, giving advice on routes and providing icebreaker support where available and considered necessary.

5 Traffic clearance requests and reports required by this system shall be addressed to *NORDREG CANADA*. Requests and reports may be passed through any *Canadian Coast Guard Marine Communications and Traffic Services* centre free of charge. All times shall be given in *Co-ordinated Universal Time*.

6 *(For further information concerning Vessel Traffic Services in the Arctic, consult Radio Aids to Marine Navigation, available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*

7 **Caution**. — Much of the information in this area is based on surveys of spot soundings through the ice and **shoal depths are not examined**. *(For details see Source Classification Diagrams shown on the charts.)*

8 *(Tidal predictions for Parry Channel are given in Canadian Tide and Current Tables, Volume 4.)*

9 *(For general **weather** conditions in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General*

Information, Northern Canada. For present and forecast weather conditions, visit: http://www.weatheroffice.gc.ca/canada_e.html. For maps relating to general weather patterns, visit: http://atlas.nrcan.gc.ca/site/index.html.)

10 Local **ice conditions** are described in the text. *(For general ice conditions in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For detailed information on present and predicted ice conditions in this area, visit: http://www.ice-glaces.ec.gc.ca.)*

11 The **magnetic compass** is useless in Barrow Strait, Viscount Melville Sound and the entrance to, and in the north part of M'Clure Strait; it is erratic in Prince of Wales Channel and in the south part of M'Clure Strait. *(See Sheet No. 10 of the Geophysical Atlas Series, published by Geological Survey of Canada.)*

Viscount Melville Sound

Charts 7570, 7571, 7572

12 **Viscount Melville Sound** *(74°00'N, 107°00'W)*, about 220 miles long and 80 miles wide, is bounded to the north by Bathurst, Byam Martin and Melville Islands and to the south by Prince of Wales, Stefansson and Victoria Islands.

13 Its boundary with Barrow Strait, to the east, is a line joining Cape Cockburn on Bathurst Island to Cape Berkeley on Prince of Wales Island, and that with M'Clure Strait, to the west, is a line joining Cape Providence on Melville Island to Russell Point on Banks Island.

14 Austin and Byam Channels enter the north side of the sound; M'Clintock Channel and Prince of Wales Strait enter the south side.

15 A solid cover of **ice**, much of which is multi-year ice cemented together by younger ice, blankets Viscount Melville Sound from November to the end of July. Fracture of the consolidated ice cover progresses from east to west, usually starting the first week of August and completing by the end of the second week. Normally the ice cover within 11 miles of the north shore of the sound breaks up and disintegrates to form open water leads by early September. Although the north side of the sound provides the best route for navigation, adverse ice conditions can result when ice is discharged into the sound from the channels on either side of Byam Martin Island.

16 Although most of the ice motion in this area is caused by the wind, a gradual counter-clockwise water motion exists as indicated by the drift of ice island fragments. These have been noted to enter via Byam Martin Channel, circling close to the north side as far west as Winter Harbour and return eastward at some distance to the south.

17 By mid September, freeze-up is normally well underway. Consolidation of the ice cover across the central part of the sound occurs by mid October then progresses both east and west to the remaining areas by the beginning of the last week of October.

18 **Caution**. — Depths have been obtained by spot soundings through the ice and **shoal depths** have **not** been **examined**. *(For details see Source Classification Diagrams shown on the charts.)*

19 Mid-channel **depths** generally range more than 100 m at the east end to a little over 500 m near the west end of the sound. However, a shelf with depths of under 100 m extends to mid-sound south of Cape Cockburn, and patches under 100 m are near mid-sound south of Austin Channel and NW and north of Kilian Island *(73°35'N, 107°45'W)*.

20 Mean **current** flow is generally easterly at about 0.1 knot in summer and much less in winter. Peak flows of 0.6 knot have been observed during measurements in late winter. However in 1948, a southwesterly flow of nearly 0.5 knot was reported in the west part of the sound. In 1970, a strong easterly flow was observed north of Stefansson Island and in 1971 an easterly set of about 3 knots was experienced in the west entrance to Intrepid Passage.

21 The tidal range varies from about 1.5 m in the east to 0.9 m in the west. *Natkusiak Peninsula (Index No. 5643)*, *Winter Harbour (Index No. 5645)* and *Peel Point (Index No. 5650)* are secondary ports in *Canadian Tide and Current Tables, Volume 4*.

Viscount Melville Sound — South shore

Chart 7570

Cape Berkeley to Hadley Bay

22 **Cape Berkeley** *(73°55'N, 100°15'W)*, at the NW corner of Prince of Wales Island, is very low with raised beaches. Cape Berkeley is the east entrance point of Viscount Melville Sound.

23 **Reliance Bay** *(73°49'N, 100°09'W)* is in the NW part of Prince of Wales Island. **Houston Stewart Point** marks the SW entrance to the bay. A low island lies 3.5 miles west of this point.

24 **Caution**. — Reliance Bay is encumbered at its head by islands and **shoal water**.

25 Milne Point, the NE extremity of M'Clintock Channel, is 5 miles west of Houston Stewart Point.

26 *(Milne Point and M'Clintock Channel are described in Chapter 9.)*

Chart 7571

27 The only notable landmark along the north coast of **Stefansson Island** is a hill *(73°42'N, 106°20'W)* rising to 224 m.

28 **Goldsmith Channel** *(73°19'N, 106°05'W)*, separating Stefansson Island from **Storkerson Peninsula** on Victoria Island, has low ridges and hills running parallel to it on both sides for a considerable distance inland. The islands encumbering the channel tend to be elongated and parallel with its axis; they are generally between 15 and 30 m in elevation and most are rounded but a few have cliffs. The narrowest part of Goldsmith Channel has a width of 0.15 mile.

29 **Cape Elvira** *(not named on the chart)*, on Storkerson Peninsula, forms the north part of the west side of Goldsmith Channel.

30 **Caution**. — **Shoal water** extends 3 miles NW, and an unknown distance west and SW, of Cape Elvira.

31 **Kilian Island** *(73°35'N, 107°46'W)* has a moderately steep headland at its NE extremity. An escarpment cuts across the island in a SSE direction from the headland, terminating about 1 mile from the south coast. **Elvina Island**, 13 miles SSE, has an elevation of about 30 m.

Hadley Bay

32 A point with an elevation of 96 m at the NW extremity of Storkerson Peninsula *(previously described)* is steepest on its south side and has closely spaced raised beaches in its lower half. **Hadley Bay** *(73°10'N, 109°00'W)*, entered between the 96-m point and the north point of **Natkusiak Peninsula**, leads 95 miles south.

33 The shores of Hadley Bay rise moderately in many places and there are high, bold headlands with low stretches in between. In general, cliffs are little developed although the land may rise quite steeply to moderate heights. The area is predominantly composed of sedimentary rock of which limestone is common. Numerous islands and islets are in the bay, mostly along its west shore. **Mikkelsen Islands**, the largest group, are 43 miles south of the east entrance point of the bay.

34 *Natkusiak Peninsula (Index No. 5643)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

35 **Caution**. — **Shoal depths** of 7 to 9 m lie 16 miles west and 9 miles SW of the NE entrance point of Hadley Bay. Several **shoal rocks**, with less than 2 m over them, extend from two low islets 12 miles SSW of the same point. A **depth** of 8 m lies 5 miles north of Mikkelsen Islands.

36 **Caution**. — An island, 18 m in elevation, 6 miles south of the east entrance point of Hadley Bay, is reported to have **shoal water** between it and the mainland.

37 **Wilfred Brown Island** *(72°49'N, 109°16'W)* is more than 90 m high. The centre and south islands of Mikkelsen Islands and most of the islands toward the head of Hadley Bay rise to about 60 m.

38 **Elsa Hill** *(72°39'N, 107°55'W, not named on the chart)*, on the east side of the bay abreast Mikkelsen Islands, is the most **conspicuous landmark** in the vicinity with an elevation of 186 m.

39 **Ice** south of Mikkelsen Islands is mainly first-year. The north part contains varying amounts of multi-year ice depending mainly upon winds during the period when the ice is free to move. Northerly winds will drive this older ice south into Hadley Bay.

40 Break-up normally begins during the first week of August with the ice gradually reducing to open and very open ice concentrations by the first week of September. Freeze-up usually begins during the second week of September with a solid ice cover developing by mid October. *(For more information, visit: http://ice-glaces.ec.gc.ca.)*

Wynniatt Bay

41 **Wynniatt Bay** *(72°55'N, 111°10'W)* is entered between the NW extremity of Natkusiak Peninsula and Worksop Point, 25 miles WSW.

42 In the north sector of the east side of Wynniatt Bay the land rises gently or moderately from the sea to a low undulating plateau reaching elevations of 60 to 120 m. The southern sector is very broken, rugged and indented with inlets which have islands in their entrances.

43 **Worksop Point** *(72°53'N, 112°00'W)*, **Hornby Point** and **Cowper Point** are formed by raised beaches; all are inconspicuous.

44 **Bromley Bay** has rounded hills a short distance inland on both sides and is low at its head.

45 **Caution**. — **Air photos** indicate that the water **shoals** gradually toward the head of Bromley Bay.

46 **Greene Point**, at the tip of a small low peninsula, is backed to the west by a group of steep, rounded hills. A small low islet lies close offshore 2 miles NW of the point.

47 Between Greene Point and Biggs Point, 10 miles south, steep rounded hills about 90 m in elevation overlook the coast but generally lose height and steepness to the south. An island 2 miles SSE of Greene Point has an elevation of 43 m.

48 **Eden Point** has two islands lying SE of it. The larger of the two is 24 m high and the smaller is low-lying.

49 **Glenelg Bay** *(72°29'N, 111°07'W)*, the SW extension of Wynniatt Bay, is entered between **Reynolds Point** and **Biggs Point**. Reynolds Point is low but backed by a steep, flat-topped hill. **Washington Islands** are rocky, the highest with an elevation of about 30 m. The western of two arms

at the head of the bay is high and precipitous along its SE shore, with elevations over 460 m in places, while the NW shore slopes up gradually from the sea. An extensive delta is at the head of the west arm. The east arm is high and rugged on its east and south sides, less so on its west side. **Shaler Mountains**, to the south and east, attain elevations of almost 600 m.

Chart 7572

Wynniatt Bay to Prince of Wales Strait

50 The coast between Worksop Point *(72°53'N, 112°00'W)* and Barnard Point, 20 miles NW, is without distinguishing features.

Chart 7520

51 **Richard Collinson Inlet**, entered between **Barnard Point** *(73°01'N, 113°06'W)* and **Loch Point**, is surrounded by moderately rolling country with rounded hills rising between 60 and 90 m but east of it there are several prominent hills rising well above the general level of the land. Several islands near the head of the inlet are low.

52 The east side of Richard Collinson Inlet between Barnard Point and Willoughby Point is low and gently shelving, the narrow coastal plain being backed by a ridge of sedimentary rock rising to 60 m. **Willoughby Point** *(72°45'N, 113°35'W)* rises gradually to a rounded hill. About 5 miles south of Willoughby Point there is a long, narrow peninsula formed by a ridge of low, rounded hills which rise fairly steep to between 30 and 60 m.

53 The head of Richard Collinson Inlet is a wide swampy pass where a braided stream, 4 miles wide, enters the inlet.

54 On the west side of the inlet, between Loch Point and an unnamed point 20 miles south, a narrow strip of sand bars and lagoons about 0.5 mile wide forms the coastline. The unnamed point is low, backed by a low rounded hill with **conspicuous raised beaches**.

55 **Ice** in Richard Collinson Inlet usually breaks up by late July. In most years the inlet will be clear of ice for long periods during August. Freeze-up is normally underway by mid September with consolidation of the ice occurring by the third week of October. *(For more information, visit: http://ice-glaces.ec.gc.ca.)*

56 **Caution**. — **Depths** in Richard Collinson Inlet are **shallow** with several mid-inlet soundings of 3 m.

57 Between Loch Point and Peel Point, 16 miles NW, a narrow strip of sand bars and lagoons about 0.5 mile wide forms the coastline. Behind this the land rises gently to low ridges running parallel with the coast.

58 **Peel Point** *(73°22'N, 114°30'W)* projects from a low-lying coast behind which the land rises gradually inland over gently gullied slopes to a razor-backed ridge cut with ravines. The point itself is so low it is difficult to distinguish where the sea ice ends and the low, shelving beach begins.

59 *Peel Point (Index No. 5650)* is a secondary port in the *Canadian Tide and Current Tables, Volume 4*.

Viscount Melville Sound — North shore

Chart 7570

Cape Cockburn to Bridport Inlet

60 **Cape Cockburn** *(75°02'N, 100°22'W)*, the SW extremity of Bathurst Island, marks the north side of the east entrance of Viscount Melville Sound. It is a low rounded point from which the land rises, at first gradually, then abruptly, to a **radar-conspicuous hill**. Viewed from the west this hill has a rounded or domed summit on a flat, table-topped platform with a gentle north slope and an abrupt south slope.

61 *(Austin and Byam Channels are described in Chapter 11.)*

62 **Cape Gillman** *(75°01'N, 104°13'W)*, the south extremity of Byam Martin Island, is a low, rounded cape.

63 **Caution**. — The south coast of Byam Martin Island is fairly low and bordered by **shoal water**; it has not been picked up on radar until within 10 miles.

Chart 7571

64 **Nelson Griffiths Point** *(75°03'N, 105°59'W)* is the SE extremity of **Melville Island**. **Byam River** flows through a low alluvial peninsula; the delta at its mouth is north of Nelson Griffiths Point.

65 The south coast of Melville Island from Nelson Griffiths Point to Skene Bay is low with a gently shelving shoreline broken by numerous streams. Rounded undulating terrain is found a few miles inland.

66 **Caution**. — **Shoal depths** less than 20 m extend up to 4 miles offshore between Nelson Griffiths Point and a river mouth 14 miles WSW.

67 **Little Point**, 4 miles SW of Nelson Griffiths Point, is a flat-topped bluff 30 m high with smooth steep slopes. The coast between Little Point and Ross Point is low and gives a poor radar response.

68 **Ross Point** projects from a low coast well marked with lines of raised beaches. A fairly steep bluff lies 0.3 mile NW.

69 **Caution**. — **Shoals** with 8.9 and 24 m over them lie 5 miles ESE and 3 miles south of Ross Point.

70 An unnamed point 6 miles east of Ross Point is composed of loose brown sand molded into a few low dunes. The point rises 0.2 mile inland to 15 m at the base of a terrace

25 m in elevation. About 1 mile farther inland a steep-faced ridge rises to more than 60 m.

71 **Skene Bay** is entered between Ross Point and **Palmer Point** *(74°56'N, 107°55'W)*, a black coloured point rising to more than 30 m. A point on the east side of Skene Bay, 5 miles NE of Palmer Point, rises over 150 m and makes a good radar target. The NW part of Skene Bay is low and flat where a river enters, but elsewhere it is flanked by steep rounded slopes.

72 **Beverley Inlet**, at the head of Skene Bay, is very steep-sided, rising to 150 m but is low at its head where two rivers enter.

73 **Caution**. — Skene Bay and Beverley Inlet were surveyed in 1977/78 with **spot soundings** through the ice spaced about 0.3 mile apart.

Chart 7540

Bridport Inlet

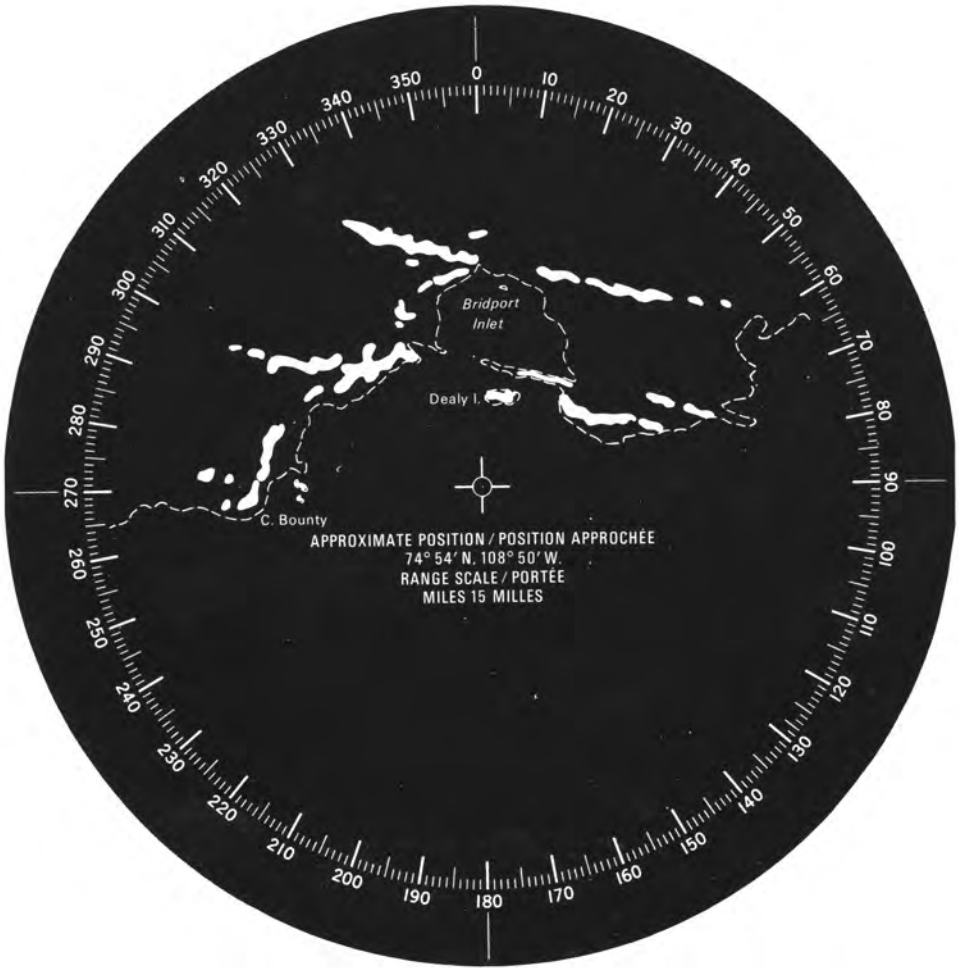
74 **Bridport Inlet** *(75°02'N, 108°44'W)* was the planned site of a gas liquefaction plant and LNG tanker terminal for gas piped in from the Drake Point gas field, 100 miles to the north.

75 The west side of the inlet has a low, shelving shoreline, except in the vicinity of the west entrance point, with hills 3 miles inland rising between 250 and 300 m. On the east side there is a sandy rolling plain and the inland terrain rises no more than 200 m.

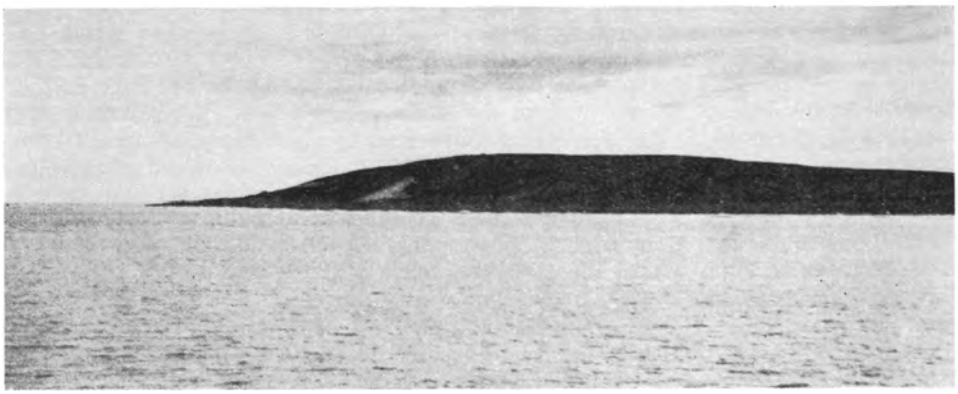
76 **Dealy Island**, on the east side of the entrance to Bridport Inlet, has a steep south side and gentle slopes elsewhere. It is a good radar target. A large **cairn** in the centre of the island and a cabin on its SE side make good landmarks.

77 The peninsula forming the south side of Bridport Inlet is a rough, steep ridge of angular sandstone boulders,

RADAR DISPLAY — BRIDPORT INLET AND APPROACHES



EAST SIDE OF DEALY ISLAND BEARING 180° (Prior to 1961)



somewhat lower and less steep in its west half. The ridge continues underwater for 0.5 mile WNW then drops away, reappearing as a spit on the west shore. A **conspicuous cairn** is on this spit.

78 The **tidal range**, large tides, in Bridport Inlet is about 1.3 m.

79 In the entrance to Bridport Inlet the **current** has been measured at 0.4 knot in winter; maximum tidal current is 0.1 knot.

80 Bridport Inlet normally clears of **ice** for a few weeks during the latter part of August and early September. Freeze-up usually begins around mid September. *(For more information, visit: http://ice-glaces.ec.gc.ca.)*

81 **Caution**. — **Shoal banks**, with least depths of 8.4 and 7.5 m, lie 10 to 12 miles SSW of the west entrance point of the inlet. A 6.4 m **shoal patch** lies 3 miles ESE of Cape Bounty.

82 **Caution**. — **Shoals** covered less than 10 m lie on both sides of the entrance channel west of Dealy Island, and extend 0.5 mile off the east entrance point of the inlet.

83 **Caution**. — Inside the inlet, the west shore is bordered by **shoal water**, and **shoal patches** lie along the south and east shores. **Mecham River** enters the head of the inlet over a delta and mud flats. A large sand and gravel **shoal bank** lies 0.5 mile off the drying delta.

84 Good **anchorage** in 17 to 50 m, mud and clay, is available about 1.5 miles off the south shore of the inlet.

85 **Cape Bounty** *(74°52'N, 109°32'W)*, in the west approach to Bridport Inlet, is a steep headland formed of two hills; the eastern hill has an elevation of 148 m and has a **cairn** on it.

Chart 7571

Bridport Inlet to Cape Providence

86 **Caution**. — Between Cape Bounty and **Wakeham Point** *(74°48'N, 110°17'W)*, the extremity of a rocky rounded ridge 12 miles WSW, **air photos** indicate **shoal water** for about 0.5 mile offshore. A **shoal depth** of 14.6 m lies 3.5 miles ESE of Wakeham Point.

87 **Cape Halse** *(74°50'N, 110°02'W)* was described by M'Clintock as a "very low point with sandy ridges extending off it".

88 **Winter Harbour** *(74°47'N, 110°36'W)*, named by Parry, who wintered there with *Hecla* and *Griper* in 1819/20, and where Bernier wintered in *Arctic* in 1908/09, is surrounded by relatively low terrain sloping gradually down to the shore.

89 Winter Harbour is not normally free of **ice** until mid August and by mid September freeze-up usually begins. *(For more information, visit: http://ice-glaces.ec.gc.ca.)*

90 The **tidal range** of large tides is 1.5 m. *Winter Harbour (Index No. 5645)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

91 The harbour is entered between **Hearne Point** and **Fife Point**, 5 miles NNE. Both points are low but higher ground rises a short distance behind Fife Point.

92 **Caution**. — Depths under 20 m extend 2 miles off Hearne Point.

93 **West Hill**, **North Hill** and **Northeast Hill** are fairly prominent.

94 **Parry's Rock (Parry Rock)**, between two ravines, is a large block of stone estimated to be 5.5 m long and 3 m high. First noted by Parry, it resembles the roof of a house and is a very **conspicuous** mark when approaching from eastward.

95 A small inlet can be entered between Fife Point and **Braithwaite Point**.

96 **Caution**. — The inlet has a **shoal bar** across its entrance; 3 m of water has been found at nearly low water.

97 An inlet, with ravines along the shores, is entered between **Reef Point** and **Parry Point**.

98 **Beacons** are on West and North Hills. A **beacon** and a cross close NW of it, at an elevation of 60 m, are on Northeast Hill.

99 A **beacon** is on Fife Point. **Beacons** are 1 mile south of **Vanase Point** and on **Claire Point**, on the west side of Winter Harbour.

100 A **beacon range**, in line bearing 271°, is close to Parry Rock.

101 A **beacon range**, in line bearing 317°, is west of Parry Point and two beacons are on Parry Point.

102 A **beacon range**, in line bearing 006°, is on Reef Point.

103 **Caution**. — These beacons are **privately maintained** and may no longer exist *(2010)*.

104 **Caution**. — Mid-channel **depths** are 24 m north of Claire Point but **shoal** to 7.3 m at the head of the harbour. **Depths** less than 5 m extend 0.1 mile off the west side, and up to 0.4 mile off the east side and head, of the harbour. South and SE of Reef Point, **depths** of 2.7 m lie up to 0.8 mile offshore. A **depth** of 5.5 m exists in mid-channel 0.7 mile SW of Reef Point. A **depth** of 3 m occurs 0.6 mile south of Braithwaite Point.

105 Good **anchorage**, relatively well protected from ice pressure, was found by the *Arctic* in 12.8 m 0.5 mile SW of Reef Point. A report in 1961 indicates little or no protection is offered against ice pressure resulting from southerly winds.

Chart 7572

106 From Winter Harbour SW past **Cape Phipps** to **Cape Clarendon** *(74°30'N, 111°39'W)*, the land is low and rolling with wide beaches.

107 **Caution**. — There is extensive **shoaling** along the shore from Winter Harbour to Cape Clarendon; the coast does not show up well on radar.

108 From Cape Clarendon to Cape Providence, 11 miles WSW, there are level-topped coastal cliffs ranging in elevation from 60 m at Cape Clarendon, to 180 m at Cape Providence. The cliffs in the last sector are cut by strikingly deep valleys and the streams flowing through them have deposited small deltas. There is little or no beach.

109 **Caution**. — **Shoal depths** extend 2 miles off Hearne Point and 1.5 miles offshore near Cape Clarendon. A **shoal patch** lies 2.5 miles off Cape Providence.

110 In the vicinity of Cape Phipps, Parry observed a well defined line of ripples at a distance of 2 or 3 miles from the land running parallel to shore. A **current** running eastward at about 1 knot was observed south of the line of ripples; inshore of the line there was no perceptible current.

Prince of Wales Strait

Chart 7000

111 **Prince of Wales Strait** *(72°30'N, 119°00'W)* separates Victoria Island from Banks Island and leads from Viscount Melville Sound to Amundsen Gulf. It is part of a deep-draught route. The SS *Manhattan*, length 306.5 m, beam 45 m and draught 15.8 m, is the largest vessel to navigate this strait *(1985)*. Passage from east to west through the strait was September 14, 1969, returning through the strait west to east September 26.

Charts 7520, 7521

112 **Caution**. — The channel in the vicinity of Princess Royal Islands *(72°46'N, 118°05'W)* was surveyed *(1970)* with sounding lines spaced less than 350 m apart. Elsewhere in the strait depths have been obtained by spot soundings through the ice. *(For details see Source Classification Diagrams on the charts.)*

113 A dual **current** pattern in Prince of Wales Strait has been noted with colder water from Viscount Melville Sound setting SW along the NW side of the strait and warmer water from Amundsen Gulf setting NE on the SE side. Small eddy currents which flow counter to the general current can be experienced in bays along the shores of the strait.

114 **Ice** begins to form in mid September, and a solid non-moving ice cover is formed by early November. Since the prevailing winds in autumn do not tend to drive ice from Viscount Melville Sound into Prince of Wales Strait at a time when the ice is most susceptible to wind, the strait is primarily covered with locally-formed ice. Thickness grows to about 200 cm by the spring and puddling follows in mid June. Break-up develops in late July and spreads northward through the strait by mid August, with an appreciable delay in the section north of Princess Royal Islands. Maximum open water occurs in early September; complete clearing can occur but usually patches of very open ice persist in the section north of Princess Royal Islands carried from Viscount Melville Sound by a SW current. In exceptional circumstances persistent NE winds in September can drive ice through the strait into Amundsen Gulf, but this is unusual.

115 *(For more ice information, visit: http://ice-glaces.ec.gc.ca.)*

116 The northern entrance of Prince of Wales Strait *(73°25'N, 115°00'W)*, on the SW side of Viscount Melville Sound, is between Peel Point and Russell Point. There is

deep water throughout the strait except for rocks covered 32 to 39 m in the vicinity of Princess Royal Islands.

117 At Peel Point, in the north entrance, the tide is semi-diurnal with a **tidal range**, large tides, of 0.9 m; at Johnson Point in the vicinity of Princess Royal Islands it is mixed, mainly diurnal, with a **tidal range**, large tides, of 0.2 m.

118 Observations taken in the vicinity of Princess Royal Islands, in September 1970, indicate a south-going **current** with a maximum rate of 2 knots and an average rate of 1 knot. The current is affected by wind and modified by tidal currents which set NE on the flood and SW on the ebb. In the vicinity of Princess Royal Islands the flood is 0.5 knot and the ebb 1 knot.

Chart 7520

Prince of Wales Strait — Northeast part

119 Between Peel Point *(73°22'N, 114°30'W)* and Armstrong Point, the hills close to the coast of **Prince Albert Peninsula** have steep cliffs on their seaward side. In many places the tops of the hills are cone-shaped.

120 Several streams, some with silting near their mouths, enter the strait between the cliffs in this sector.

121 A prominent hill with twin peaks, 13 miles WSW of Peel Point in 73°15'N, 115°06'W, rises steeply from the north side of a river bed to an elevation of 123 m.

122 **Armstrong Point** *(72°56'N, 117°19'W)* is formed by deposits of a stream which discharges into the strait through a narrow ravine. The coastal hills rise sharply about 1 mile inland to elevations of 150 m. Several sharp-pointed cones surmount the hills in this vicinity. A particularly **conspicuous cone-shaped hill** 28 miles NE of Armstrong Point in 73°08'N, 115°52'W rises to an elevation of 154 m.

Prince of Wales Strait — Northwest part

123 **Russell Point** *(73°32'N, 115°19'W)*, the NW entrance point of Prince of Wales Strait and NE extremity of Banks

RADAR DISPLAY — PRINCE OF WALES STRAIT (NORTH ENTRANCE)

Island *(partially described in Chapter 2)*, is a low mud flat. A spit with an islet extends 1.5 miles SSE of the point. A prominent hill with an elevation of 244 m lies 7 miles west.

124 **Caution**. — Russell Point, Peel Point and Barnard Point, to the east, are all **ill-defined** and difficult to distinguish. Russel Point and Barnard Point have been confused with Peel Point; on one occasion it was by a sledge party, on another a ship entered Richard Collinson Inlet instead of Prince of Wales Strait.

125 **Knight Harbour** lies between the spit with an islet extending SSE from Russell Point and the mainland; the spit is separated from the mainland by a narrow channel that is probably only navigable by small craft. The harbour is about 0.7 mile long and 0.2 mile wide at its entrance, narrowing to 0.1 mile at its mid-point.

126 **Passage Point**, 3 miles south of Knight Harbour, is a low and fan-shaped delta; it is backed about 1 mile inland by a razor-backed ridge running parallel with the coast. The stream whose outwash forms Passage Point runs between this ridge and the inland hills.

127 **Wallace Point**, 4 miles SW of Passage Point, is similar in formation to Passage Point but smaller.

128 A **conspicuous peak** *(73°20'N, 116°08'W)*, 12 miles WSW of Wallace Point, has an elevation of 207 m.

129 Between Wallace Point and Johnson Point, 65 miles SW, the coast is notable only for a series of small points formed by streams discharging into Prince of Wales Strait. The coast is backed by rounded hills that rise fairly steep; the hills are deeply ravined by streams.

130 The small, unnamed point 33 miles SW of Wallace Point is formed by river outwash and has an isolated hill, about 9 m high, near its extremity. The land behind the point rises sharply to flat-topped cliffs. The river at the unnamed point reaches the strait through a narrow gorge in the cliffs. The unnamed point 5.5 miles farther SW is more prominent than the other stream-formed points; it is a hook-shaped mud flat that forms the south side of a large creek mouth. A ridge rising from it reaches an elevation of 40 m.

131 **Johnson Point** *(72°46'N, 118°28'W)*, 6 miles west of Princess Royal Islands, is a low spit; the land for 4 miles to the SW of the point is low, flat and bordered by a beach.

132 The tide at Johnson Point is mixed, mainly diurnal with a **tidal range** at large tides of 0.2 m.

133 Johnson Point was once used as an oil exploration support and staging area and later for mining exploration. Buildings and oil tanks have been dismantled and removed. An abandoned airstrip runs parallel to shore.

134 A large beach, alongside the airstrip, was used for unloading supplies.

135 **Princess Royal Islands** *(72°46'N, 118°05'W)* are two islands in mid-strait. The SW island is the largest and has an elevation of 58 m in its central part; it has steep cliffs on both sides. A flagstaff *(1994)*, on the summit of the island, is 11 m. A **cairn** is close SW of the flagstaff. The smaller island, 0.7 mile NE, has an elevation of 19 m.

136 The channel SE of Princess Royal Islands is the route usually taken; it has relatively deep water. Some rocks covered 32 to 39 m lie in mid-channel.

137 **Caution**. — The channel NW of Princess Royal Islands has an extensive **shoal area** on its north side with least depths of 2.4 to 10 m, and depths of 12.4 to 30 m near mid-channel. These shoals are clearly defined by very strong **tide-rips** when the ice is absent.

138 **Anchorage** during north winds can be obtained off the SW island, with its SW extremity bearing 108°, 1 mile, in about 37 m with good holding. In south winds anchorage can be found with the NE island bearing 176°, 1.5 miles, in 22 m.

139 **Caution**. — Drifting **ice** floes can foul these anchorages therefore vessels must be prepared to move at short notice.

Chart 7521

Prince of Wales Strait — Southeast part

140 The east coast becomes generally cliffy 10 miles NE of Princess Royal Islands *(72°46'N, 118°05'W)* and continues SW as high cliffs to about 5 miles north of Hay Point; an escarpment lying along a NNW/SSE axis then trends inland to the east of Hay Point. Several streams empty into the strait through ravines in these cliffs.

141 A hill 8 miles NNE of Hay Point has an elevation of 140 m and is surmounted by a **conspicuous cone**. A stream discharges into the strait west of the above-mentioned hill, through a narrow but deep ravine in the cliffs. A prominent summit, 5 miles SE of the above-mentioned hill, has an elevation of 350 m. Along the east side of Prince of Wales Strait several similar cone-topped hills can be seen.

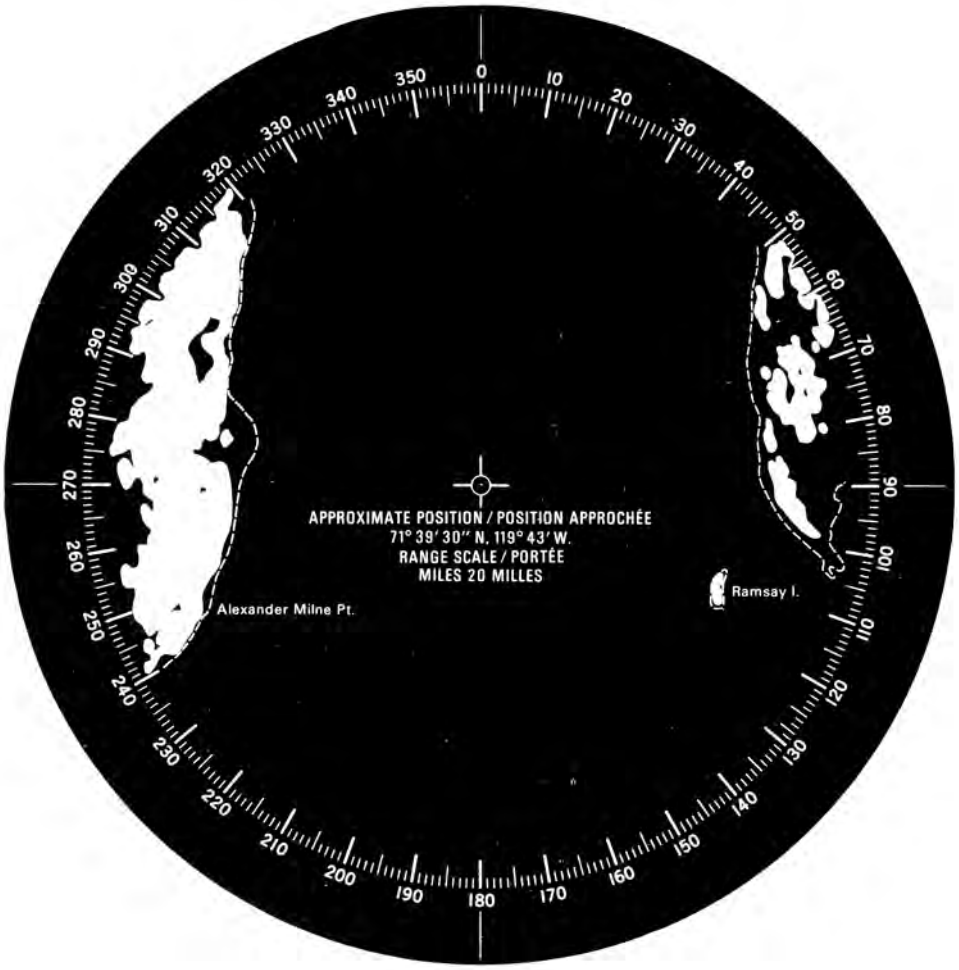
142 **Hay Point** is low, gradually rising to a hill 30 m high. A prominent isolated peak 2 miles NE has an elevation of 100 m and can serve as an identifying mark.

143 **Deans Dundas Bay** is entered between Hay Point and Gordon Point, 12 miles south. The north and east sides of the bay are low and flat, the north side is backed by hills 4 miles inland that rise over 300 m. Several streams empty into the head of the bay through alluvial flats. The SE side of the bay is composed of hills rising to elevations of about 60 m.

144 **Caution**. — The shores of Deans Dundas Bay are bordered with **shoal water**, particularly in the SE and south parts. There are several mid-bay **shoals** under 10 m.

145 The suitability of the bay as an **anchorage** has not been reported; it is open to

RADAR DISPLAY — PRINCE OF WALES STRAIT (SOUTH ENTRANCE)



the west and unlikely to afford much shelter, particularly from **ice**.

146 **Gordon Point** is a prominent headland formed by a hill 60 m high that stands apart from the other hills in the vicinity.

147 The coast between Gordon Point and Berkeley Point, 37 miles south, is formed by a series of low, well-rounded hills, with steep cliffs where they reach the coast, and surmounted in many places by small conical peaks.

148 **Ramsay Island** is on a **shoal area** with depths of 1.5 to 20 m extending 7 miles off Berkeley Point. The channel between **Berkeley Point** and Ramsay Island should not be attempted.

149 *(Berkeley Point (71°35'N, 118°52'W), described in Chapter 4, is the SE entrance point of Prince of Wales Strait.)*

Prince of Wales Strait — Southwest part

150 The west coast of Prince of Wales Strait between Johnson Point and Stewart Point, 29 miles SSW, is quite steep and broken only where streams enter the strait. **Stewart Point** *(72°22'N, 119°17'W)* is low and does not show up well from seaward. Between Stewart Point and the NE entrance to Jesse Bay the coast is backed by barren rounded hills rising to 120 m.

151 **Jesse Bay** *(72°12'N, 120°00'W)* has **Morgan Bluffs** a short distance inland from its NE entrance point. The SW entrance point is low, backed by land rising to an elevation of 220 m about 2 miles inland.

152 **Anchorage** can be found 1 mile SE of the head of the bay in 20 m.

153 There is little shelter from **wind** or **ice** in Jesse Bay.

154 **Jesse Harbour** is at the head of Jesse Bay. The harbour offers good protection for small vessels.

155 A **shoal bar** with depths as little as 2.4 m lies across the entrance to Jesse Harbour. Inside this bar, the entrance passage is restricted to about 0.1 mile wide by a **shoal spit** extending north from the south entrance point. The shallow, narrow entrance is liable to become blocked with wind- or current-driven **ice**.

156 The north and west sides of the harbour are low and boggy. Two braided streams enter the west side and the north side is formed by braided channels of a river mouth. The low terrain of the harbour is relieved by steep cliffs on the SW side of the entrance and at the mid-point of the east side.

157 The **tidal range**, large tides, at Jesse Harbour is 0.3 m.

158 **Depths** in the central part of the harbour are generally over 20 m.

159 **Caution**. — In the north part of Jesse Harbour, **shoal water** extends 0.9 mile offshore in places and there are several **isolated shoals**.

160 Between Jesse Bay and **Schuyter Point**, 18 miles SSW, a coastal plain separates the strait from rolling hills. The hills gradually increase in elevation to about 400 m. Several streams enter the strait across this plain through braided channels. North of Schuyter Point the coastal plain gives way to till bluffs.

161 Between Schuyter Point and Alexander Milne Point, 20 miles south, the coast is composed of sand and gravel beaches that rarely exceed a width of 15 m; the beaches are backed by till bluffs ranging in height from 2 to 8 m. The bluffs between Schuyter Point and **Cape Treadwell**, 11 miles south of Schuyter Point, are heavily gullied by meltwater. Larger streams enter the strait through braided channels across fan-shaped deltas. Inland, the land rises rapidly to a barren, rolling plateau with elevations about 400 m. **Nokaluk River** delta forms Cape Treadwell.

162 **Coal Mine Bluffs** rise from the shoreline south of Cape Treadwell.

163 *(Alexander Milne Point (71°33'N, 120°29'W), described in Chapter 4, is the SW entrance point of Prince of Wales Strait.)*

M'Clure Strait

Charts 7832, 7572

164 **M'Clure Strait** *(74°45'N, 118°00'W)* is bordered by Melville, Eglinton and Prince Patrick Islands on the north and by Banks Island on the south. The strait extends 170 miles NW from its border with Viscount Melville Sound, a line joining Cape Providence *(74°26'N, 112°17'W)*, on Melville Island, and Russell Point, 74 miles SW. Its west entrance is between Griffiths Point *(76°05'N, 123°01'W)* on Prince Patrick Island and Cape Prince Alfred, 108 miles SSW.

165 *(Kellett Strait and Crozier Channel enter the north side of the strait and are described in Chapter 11.)*

166 Most **depth** information is from spot soundings through the ice but some information is from random ships' tracks. *(See Source Classification Diagrams on the charts.)*

167 Soundings indicate M'Clure Strait has deep water throughout with mid-strait depths of 400 to 500 m and with the 200 m line within a few miles of the coast.

168 Large seasonal variations in **ice** cover can occur but the strait usually remains choked with ice throughout the summer. In favourable years vessels have been able to move about; M'Clure, entering the strait from the west in 1851 in *Investigator* reached Mercy Bay *(74°06'N, 119°00'W)* but was forced to abandon *Investigator* there in 1852. In 1954, a *United States Coast Guard* icebreaker succeeded in navigating the entire length of the strait from west to east, and in 1962 a Canadian icebreaker was able to navigate to the west entrance along the north side and retrace its course. In 1963 similar open conditions existed, although no icebreaker navigated the passage. In 1969, SS *Manhattan*, displacing 155,000 tons, escorted by CCGS *John A. Macdonald* was able to penetrate M'Clure Strait from the east only as far west as Rodd Head *(74°14'N, 117°23'W)*. The overall ice conditions depend on the type of ice, the amount of ablation and the winds.

169 **Historical Note**. — The *Investigator* was searching for the Franklin expedition when M'Clure was forced to abandon ship. *Investigator* had already discovered the last link in the Northwest Passage. In 2010, the wreck of *Investigator* was located, in Mercy Bay, by a *Parks Canada* research team.

170 Navigation in M'Clure Strait is variable from year to year but optimum conditions are most likely during the latter part of August and the first three weeks of September. *(For more ice information, visit: http://ice-glaces.ec.gc.ca.)*

171 The tide is semi-diurnal in M'Clure Strait. The **tidal range**, large tides is 1.1 m at Cape Dundas on the north shore and 1 m at Parker Point on the south shore.

172 **Currents** in M'Clure Strait are mainly tidal but there is probably a general easterly drift. In the east part of the strait during winter mean currents are negligible and peak flows do not appear to exceed 0.5 knot. On the south side of the strait, in the vicinity of Parker Point, a current setting SE at 1.5 to 2 knots has been observed and is considered to be connected with the indraught of the flood tidal stream entering the north end of Prince of Wales Strait. In the same vicinity the ebb was noted setting NE.

173 Tidal **currents** are small, amounting to 0.2 knot at spring tides, except near Cape Dundas where tidal currents at 0.4 knot have been observed. In the vicinity of Cape Providence, on the north side of the strait, the flood tidal stream is reported to run westward and the ebb

eastward. However, Parry, in 1819, observed a 1 to 2 knot current setting steadily westward throughout a four day period in the same general area.

M'Clure Strait — North shore

Chart 7572

Cape Providence to Cape James Ross

174 **Cape Providence** *(74°26'N, 112°17'W)*, the NE entry point of M'Clure Strait, marks the break between the cliffs and low land on this part of the coast of Melville Island, providing a useful identifying feature.

175 A **shoal patch** lies 2.5 miles south of Cape Providence.

176 Between Cape Providence and Cape James Ross, 38 miles WNW, the north side of M'Clure Strait has long stretches of fairly high, level-topped cliffs of sedimentary rock, cut by trench-like valleys. These cliffs give good radar echoes. There are some stretches of low coast and a number of large deltas. Elevations generally increase toward the west, the highest part being in the vicinity of Cape Hay.

177 Between Cape Providence and **Cape Hay**, 11 miles west, the cliffs attain an elevation of about 300 m. They are level-topped and broken by a number of canyon-like valleys, extending 4 miles inland, with small deltas off their mouths. There is no beach along this cliffy section of the coast.

178 **Cape Dundas**, 23 miles west of Cape Providence, slopes up sharply from the sea when seen from SE; an unnamed cape 4 miles NW has a similar profile. **Goldsmid Point** and **Cape Airy**, 7 and 14 miles NW of Cape Dundas, appear to have no distinguishing features but the **ravine** adjacent to Cape Airy is **conspicuous**. The ravines in this section of the coast show up well visually and on radar and make good navigation marks.

179 The tide at Cape Dundas is semi-diurnal with a **tidal range**, at large tides, of 1.1 m.

Liddon Gulf

180 **Liddon Gulf** penetrates Melville Island for 64 miles. The south shore of the gulf is formed by the north coast of **Dundas Peninsula**; the peninsula is about 180 m in elevation and gradually slopes to the sea. The terrain around the head of the gulf is under 30 m in elevation.

181 The north side of the gulf is for the most part high, bold and precipitous as far east as Bushnan Cove, then becomes lower.

182 **Caution**. — Little is known of **depths** in Liddon Gulf.

183 **Cape James Ross** *(74°41'N, 114°25'W)* is a prominent headland marking the south entrance of Liddon Gulf. Its cliffs have been sighted at 40 miles.

184 From Cape James Ross to **Peddie Point** the coast is, for the most part, steep cliffs. **Shellabear Point**, elevation about 30 m, is the north entrance point of a small bay.

185 **Caution**. — The south entrance point of the small bay is low and bordered by **shoal water**.

186 From Shellabear Point past **Cape Hoppner** to **Stony Pass**, the coast is mainly cliffs rising over 150 m.

187 **Chevalier Bay** was described by Mecham as having "almost perpendicular" cliffs along its west side. Hills with elevations of about 90 m are about 2 miles inland.

188 The island lying off the east shore, 3 miles from the head of Liddon Gulf, has an elevation of 20 m.

189 A **tidal range** of 1.4 m has been recorded at the head of Liddon Gulf.

190 **Bailey Point** *(74°58'N, 115°02'W)*, the north entrance point to Liddon Gulf, is fairly low; a stream flows through the wide beach here. The point rises to 40 m 0.8 mile NE.

191 **Murray Inlet**, entered 10 miles NE of Bailey Point, is surrounded by high table-topped plateaux which frequently terminate in cliffs rising up to 180 m. About 10 miles inside the entrance **Mount Joy**, with an elevation of 593 m, stands out as a good landmark from southward and has been seen from 35 miles; it rises sharply to a summit on the west side and slopes gently on the east side. **Savage Head**, 7 miles inside Murray Inlet on its east side, rises steeply to 300 m.

192 **Cape Hoare** *(75°03'N, 113°55'W)* is the termination of the high tableland that forms the cliffs along the east side of Murray Inlet.

193 At **Cape Beechey**, a headland rising to 400 m, the coast is penetrated by a steep-sided inlet. **Barry Bay**, 6 miles farther ENE, is characteristically fiord-like. Although the cliffy coast near its entrance has no foreshore, in general the cliff walls of the bay are banked with scree slopes.

194 **Cape Edwards** is a bold promontory with steep cliffs which continue 6 miles east.

195 **Bushnan Cove** was described by Parry as "one of the pleasantest and most habitable spots we have yet seen in the Arctic regions, the vegetation being more abundant and forward than in any other place, and the situation sheltered and favourable for game. We found here a good deal of moss, grass, and dwarf willow". The east side of the cove is fairly steep. Two streams enter its head.

196 **Hooper Island**, 3 miles south of Bushnan Cove, is steep-sided and formed of barren sandstone.

Bailey Point to Cape Russell

197 **Hardy Bay**, entered west of Bailey Point, is low on its east side but rises to steep cliffs at the head of the east arm. The land separating the east and west arms of the bay

has steep cliffs. The west side of Hardy Bay is steep and rises to high ground.

198 **Cape Smyth** rises in undulating steps to a tableland with an elevation of 400 m. The cape is much higher than the land on either side of it and has a very **conspicuous** appearance from southward.

199 Between Cape Smyth and **Cape Victoria** *(75°04'N, 116°15'W)*, a rounded headland 300 m in elevation, there are steep cliffs which are broken close NE of Cape Smyth, and again close SE of Cape Victoria, by deltas with narrow valleys behind them.

200 The shores of **Warrington Bay** are formed of striking cliffs rising to about 300 m. An island about 30 m high lies in the north part of the bay.

201 **Cape Cyclops** is a prominent headland which rises sharply to a high tableland. The unnamed headland 4 miles WNW rises even more abruptly to a flat-topped summit with about the same elevation.

202 For 16 miles WNW from Cape Cyclops there are steep cliffs broken by a number of ravines and by a wide flat alluvial valley 5 miles WNW of the cape.

203 About 2 miles SE of Cape Russell the cliffs give way to a fairly low coast.

204 **Cape Russell** *(75°15'N, 117°40'W)* is formed of low cliffs which gradually rise inland to 212 m.

Chart 7832

Cape Russell to Griffiths Point

205 Kellett Strait *(described in Chapter 11)* enters M'Clure Strait between Cape Russell and Pedder Point, 20 miles NW.

206 **Pedder Point** *(75°30'N, 118°34'W)*, the SE extremity of **Eglinton Island**, is a steep, flat-topped headland; the **point** is **conspicuous** but not much more than 30 m high. For 13 miles WNW from Pedder Point the coast is low. Precipitous cliffs rising to 90 m then dominate the coast for 2 miles NW to **Cape Nares** *(75°37'N, 119°25'W)*, a remarkable black, prominent headland at the SW end of Eglinton Island.

207 **Caution**. — **Shallow water** extends about 0.1 mile offshore in the central part of the SW coast of Eglinton Island. The coast is indented by a **shallow bay** with low shores.

208 Crozier Channel *(described in Chapter 11)* enters M'Clure Strait between Cape Nares and Cape Cam 18 miles NW.

209 **Cape Cam**, the SSE extremity of **Prince Patrick Island**, rises to 30 m about 1 mile inland.

210 **Walker Inlet**, entered between Cape Cam and **Cape Mecham** *(75°44'N, 121°03'W)* 12 miles SW, is bordered by high ground terminating in cliffs in its south half. Its north half is low and an extensive outwash plain is at its head. Limited soundings indicate the inlet is deep.

211 A **conspicuous pinnacle rock** lies close offshore 14 miles north of Cape Mecham.

212 **Giants Causeway**, the east entrance point of **Dyer Bay**, was named by McDougall, Master of HMS *Resolute* in the Belcher Expedition of 1852-54, from the peculiar appearance of the ice surrounding it.

213 Dyer Bay appears from limited soundings to be deep. **Domville Point**, at the west entrance of **Wolley Bay**, rises 0.5 mile inland to more than 30 m.

214 **Cape Manning**, which rises more than 30 m, and **Perseverance Point** are the SE and west extremities of an island forming the west entrance of Dyer Bay.

215 **Griffiths Point** *(76°05'N, 123°01'W)*, the NW entrance point of M'Clure Strait, is the pointed extremity of a tapering peninsula. **Bloxsome Bay** is surrounded by low-lying land, with numerous islands in its entrance.

M'Clure Strait — South shore

Chart 7572

Banks Island

216 Russell Point *(73°32'N, 115°19'W, described earlier in this chapter)* is the SE entrance point to M'Clure Strait. *(See earlier Caution note regarding Russell Point.)*

217 Between Russell Point and Parker Point, 10 miles NW, the coast is formed of rolling hills with elevations up to 180 m and with fairly deep-cut valleys and a few small cliffs in places.

218 The **tidal range** of large tides at Parker Point is 1 m.

219 The **ebb current** has been noted flowing NW along the coast off Parker Point at 1 to 2 knots; the **flood current** sets in the opposite direction at a similar rate. It is probable, however, that the flood current, aided by the general easterly flow in M'Clure Strait, will attain the higher of these rates.

220 **Parker Point** *(73°40'N, 115°35'W)* is a large, flat, muddy fan-shaped delta lying at the mouth of the **Parker River**. A continuous line of cliffs 150 to 210 m high begins about 5 miles NW of Parker Point. These cliffs may aid in the identification of Parker Point from offshore.

221 From 5 miles NW of Parker Point to Cape Vesey Hamilton, 57 miles NW, the whole coast, except where it is cut by ravines, is bordered by cliffs. The cliffs reach a maximum elevation of 260 m, at the east end of the sector, increasing to 330 m a little west of Pim Ravine. The only landmarks are the numerous ravines but they are so similar in appearance, particularly from offshore, that identification requires considerable care.

222 **Rodd Head** *(74°13'N, 117°19'W)*, 44 miles NW of Parker Point, consists of a very high, angular cliff face which

rises directly from the water to 329 m, producing a good radar response at 38 miles. Seams of coal have been found in the ravine on the east side of Rodd Head.

Chart 7832

223 **Pim Ravine**, 4 miles WNW of Rodd Head, penetrates 6 miles southward between near-vertical cliffs which rise over 300 m. The ravine can be identified by a **conspicuous coastal cliff** on its west side which has the appearance of a pyramid. Seams of coal have been found in the ravine.

224 **Cape Vesey Hamilton** *(74°17'N, 118°06'W)* rises abruptly from the water as a rocky cliff 30 m high, then rises in abrupt terraces to its maximum elevation. The cape is easily recognized because the land in its vicinity is relatively lower than that to the SE.

225 Observations taken over a three day period in 1953 indicated a **tidal range**, large tides of about 0.8 m.

226 The **ice** in this sector breaks up later than anywhere else along the north coast of Banks Island. In most years pack ice never moves far from the coast.

227 Between Cape Vesey Hamilton and Back Point, 11 miles WSW, there is an almost continuous beach of sand, gravel and pebbles. In most places within 20 to 40 m offshore the water is between 4 and 6 m and deepens rapidly to seaward. On the landward side of the beach in most of this sector there is a low, level strip of ground backed by hills rising with varying degrees of steepness from about 90 m to about 240 m at Cape Vesey Hamilton. This shoreline receives the full force of the prevailing northerly and NW'erly winds and catches the ice which is driven along the coast from the NW. Observations indicate moderate variable winds do not loosen the ice along this part of the coast but it seems probable that an east wind would be most effective in driving the ice away. A braided stream, the only notable feature apart from Cape Vesey Hamilton, enters the strait midway along this stretch.

228 **Mercy Bay** is where M'Clure of *Investigator* wintered in 1851 and 1852, having entered M'Clure Strait from the west, and where *Investigator* was abandoned. It is entered between **Back Point** and **Investigator Point** *(74°13'N, 119°05'W)*, 5 miles west. Behind the beach on both sides of the bay the ground is usually rather muddy and slopes gradually toward hills which rise near shore to about 120 m on the east side and 210 m on the west side of the bay. Greater elevations occur farther inland, particularly to the east. The most prominent features on the east side of the bay are **Gyrfalcon Bluff**, which rises to 190 m near the head of the bay, and an extensive delta formed off the mouth of a river 3 miles south of Back Point.

229 **Providence Point** *(74°07'N, 119°01'W)*, at the mouth of a stream, is estimated to be about 9 m high and is not particularly prominent.

230 **Caution**. — A muddy **shoal** extends 0.5 mile off Providence Point but **air photos** indicate the water deepens rapidly on its north and west sides.

231 The water along the western side of Mercy Bay is fairly deep except for the shoal off Providence Point. At the head of Mercy Bay, a narrow peninsula projecting north is reported to have an 8 m limestone cliff at its summit, which is about 30 m in elevation.

232 The small bay on the western side of the peninsula shoals gradually toward its head; the smaller bay on the east side is deeper.

233 **Caution**. — The greater part of the east coast of Mercy Bay, north of the peninsula, is bordered by **shallow lagoons** and **drying mud flats**.

234 **Mottley Island**, about 2 miles north of the peninsula just described, is about 12 m high and rocky. A bare rock, 3 m high, lies half way between Mottley Island and the east side of Mercy Bay.

235 The warm water from the rivers flowing into the head of Mercy Bay melts the **ice** in the SW portion in late June. The main part of the bay breaks up about the last week of July. In most years, the bay is never completely ice-free. This is partly due to the grounding of the larger and heavier floes within the bay thereby blocking the exit and also partly due to the fact that ice refills the bay with the high percentage of NW winds. Freeze-up is usually underway by mid September.

236 **Castel Bay** *(74°11'N, 119°34'W)* is entered west of **Mahogany Point**, a low point formed by the fan-shaped delta of a brook. The entrance to Castel Bay is protected by a bar; 3.4 m has been found over the bar at its western end. The current is quite strong on the east side of the bay. Outside the bar, the water probably deepens less rapidly than elsewhere along this coast as large pieces of ice, drawing perhaps a maximum of 9 m, ground about 1 mile off Mahogany Point. The bottom is mud, changing to sand and silt about 1 mile inside and is flat throughout.

237 Castel Bay has the general appearance of a fiord; the hills near the shore rise to about 90 m and are of fairly uniform height. The bay is bordered by a narrow beach.

238 Close inside the bar, depths vary from 2 m at its east end to 3.4 m at its west end. Shallow-draught vessels can enter Castel Bay between its west entrance point and the west end of the bar and find depths varying from 4.6 m just inside the entrance to 1.2 m 3 miles from the river mouth.

239 Manning reported that Castel Bay forms an excellent shelter for small craft and the ice which grounds on the bar will probably prevent other ice from entering the bay in sufficient quantities to cause more than slight inconvenience.

240 The **tidal range** at neaps is approximately 0.3 m and at springs 0.6 m.

241 **Tidal streams** flowing in and out of Castel Bay appear to be most pronounced just off Mahogany

Point where they probably reach a maximum of 1 to 1.5 knots. The ebb is considerably augmented in the spring by the Thomsen River freshet.

242 **Ice** in Castel Bay is well-broken up by the end of June and the bay is virtually ice-free by mid July. Not only does the bay itself thaw out early but the warm current flowing out of it soon cuts a channel 1 or 2 miles to seaward. Castel Bay acts as a funnel for southerly winds which sometimes clear the ice from its mouth for several miles to seaward without moving the ice offshore to the east or west. Freeze-up is usually underway by mid September.

243 **Thomsen River** enters the head of Castel Bay through a fairly wide but winding valley.

244 **Caution**. — Thomsen River terminates in a series of deltaic **shoals** off the head of the bay. The river can be entered only by small boats.

245 Between Castel Bay and Cape Crozier, 29 miles NW, hills rise steeply to between 30 and 100 m within about 0.5 mile of the coast. Inland the country gradually becomes higher and more rugged. West of Castel Bay the high land is deeply cut with steep-sided valleys and approaches closer to the coast. In the vicinity of Antler Cove the land is fairly level and slopes up gradually for the first few miles inland. The high hills between the coast and the inland plain have an elevation of about 300 m. Between the two rivers which enter the strait 5.5 and 12.5 miles SE of Antler Cove, there is some good but very soft coal; there is also coal near Castel Bay but the seams examined there were mixed with sand. The largest seam was between 3 and 4.6 m.

246 **Antler Cove** has a **conspicuous semi-circle of ridges** rising a short distance inland of its south corners.

247 Soundings taken in 1952 indicate Antler Cove would be a fairly safe harbour for vessels drawing up to 4.9 m.

248 The average **tidal range** during three days of neap tides, in 1952, was 0.2 m.

249 Although Antler Cove is apparently open and exposed, it is too shallow to admit the heavier ice which piles up against its entrance.

250 **Cape Crozier**, a distinctive point 6 miles NW, rises steeply from the water to 60 m. Steep cliffs front the coast for 4 miles SSE of the cape.

251 Between Cape Crozier and Colquhoun Point, 11 miles west, cliffs from 9 to 100 m rise direct from the sea above talus slopes; there are no beaches. The line of cliffs is broken by an occasional steep gully. Deep water exists close to shore.

252 **Cape M'Clure** *(74°32'N, 121°17'W)* is the most outstanding landmark in this sector. Its west and north sides rise almost sheer from the water to 190 m, giving a good radar response.

253 **Cape Wrottesley** *(74°33'N, 121°27'W)*, the north extremity of Banks Island, is not easy to identify. It has an elevation of 40 m, rising inland to 100 m.

254 At **Colquhoun Point** there are cliffs 30 m high, the westernmost outcrop of solid rock on this coast. About 1 mile inland the land rises to 80 m.

255 From Colquhoun Point to Cape Prince Alfred *(74°21'N, 124°46'W)* the coast comprises hills rising steeply from shore except where there are broad mud fan-shaped deltas at river mouths, or small valleys. The general level of the hills, about 1 mile inland, is about 30 m at the west end of this sector, 90 m in the middle part, and 60 m in the vicinity of Colquhoun Point. Deep water lies close offshore along this sector except off the mouths of rivers and streams.

256 A large braided stream flows through a **conspicuous** flat **valley** 3 miles SW of Colquhoun Point. **Ballast Brook**, 17 miles WSW, has similar easily identified features. Two islets lie offshore of **Ballast Beach**.

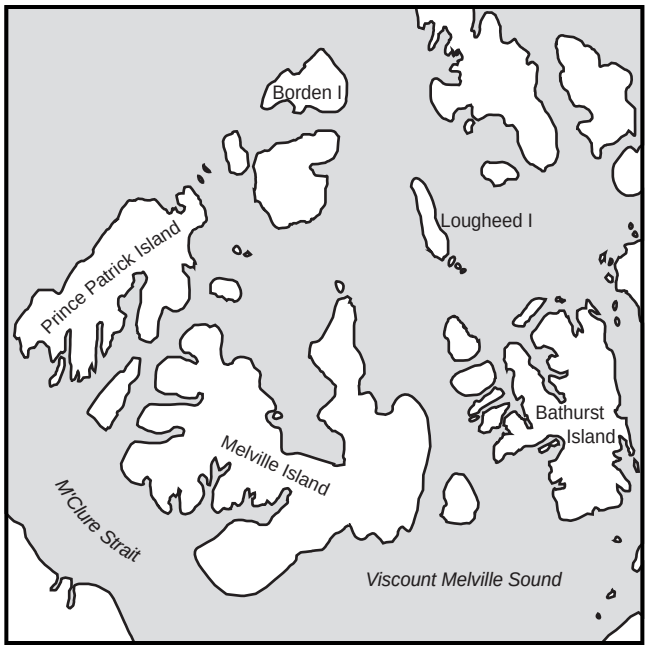
257 **Shelter Island** *(74°24'N, 124°11'W)* is flat, almost barren, with an estimated elevation of 2 m. The channel between it and the mainland has an estimated depth of 4 to 9 m.

258 **Bar Harbour** has a bar across its entrance with about 3.7 m over it. Once over the bar **anchorage** is available in about 7.6 m, mud or gravel bottom, with good protection from severe ice pressure.

259 **Caution**. — **Depths** over the bar and in the channel at Shelter Island are likely to change from year to year after severe **ice pressure**.

260 *(Cape Prince Alfred, the SW entrance point of M'Clure Strait, is described in Chapter 2.)*

Parry Islands
Channels west of Bathurst Island



General

Charts 7000, 7572, 7832, 7951, 7952, 7953, 7980

1 **Queen Elizabeth Islands** form the entire Canadian Arctic Archipelago north of Parry Channel and west of Nares Strait. *(The eastern portion of the Queen Elizabeth Islands is described in Sailing Directions booklet ARC 402 (ARCTIC CANADA VOL. II) — Eastern Arctic.)*

2 **Parry Islands** *(75°30'N, 106°00'W)*, the SW portion of the Queen Elizabeth Islands, comprise Cornwallis, Bathurst, Melville and Prince Patrick Islands and the adjacent smaller islands and channels lying north of Parry Channel together with Lougheed, Mackenzie King and Borden Islands farther north along with their adjacent channels and smaller islands. This chapter describes Parry Islands west and north from Cape Cockburn, the SW tip of Bathurst Island. *(For descriptions of the south and east sides of Bathurst Island, and Cornwallis Island, see Sailing Directions booklet ARC 402 (ARCTIC CANADA VOL. II) — Eastern Arctic.)*

3 *Northern Canada Vessel Traffic Services (NORDREG) Zone* covers all waters described in this chapter. The primary objective of this system is to assist the master in the safe and expeditious conduct of the vessel by promulgating information on ice conditions, giving advice on routes and providing icebreaker support where available and considered necessary.

4 Traffic clearance requests and reports required by this system shall be addressed to *NORDREG CANADA*. Requests and reports may be passed through any *Canadian Coast Guard Marine Communications and Traffic Services* centre free of charge. All times shall be given in *Co-ordinated Universal Time (UTC)*.

5 *(For further information concerning Vessel Traffic Services in the Arctic, consult Radio Aids to Marine Navigation, available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*

6 **Oil and gas exploration** in the Canadian Arctic Archpelago started circa 1960 and was suspended, in the Parry Islands, prior to 1990. The *Bent Horn* oil field, on the south side of Cameron Island, shipped a total of 2.8 million barrels of oil from 1985 to 1996. The *Bent Horn* oil field was abandoned in 1998.

7 In 1979 plans were developed to build a gas pipeline along Melville Island for transporting natural gas from the

vicinity of Drake Point to Bridport Inlet on the south coast of the island. A liquefaction plant and berthing facility was proposed for Bridport Inlet and the gas was to be transported south by LNG tankers; this plan has been abandoned.

8 **Airstrips** operated *(1985)* for oil and gas exploration activities in the area covered by this chapter are at: Cameron Island *(76°22'N, 104°05'W)*, Drake Point *(76°24'N, 108°32'W)*, Lougheed Island *(77°27'N, 105°05'W)*, Rea Point *(75°22'N, 105°44'W)* and Sherard Bay *(76°05'N, 108°30'W)*. These airstrips are now abandoned. The airstrip for a weather station at Mould Bay *(76°14'N, 119°19'W)* is abandoned.

9 **Caution**. — **Depths** over the major portion of the area have been obtained by spot soundings through the ice, or by track and reconnaissance surveys; it should be noted that **shoal depths** in these areas generally have **not** been **examined**. *(For details see Source Classification Diagrams shown on the charts.)*

10 **Ice conditions** allow surface navigation through the channels in the south part of Parry Islands generally from the latter part of August until the end of September. These southern channels consist of Austin Channel, Byam Channel and Byam Martin Channel, and Kellett Strait, Crozier Channel and Fitzwilliam Strait.

11 Navigation through some of the straits north of Penny Strait, Byam Martin Channel and Fitzwilliam Strait is periodically possible but conditions are difficult.

12 *(For general **ice conditions** in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For detailed information on present and forecast ice conditions in this area, visit: http://ice-glaces.ec.gc.ca.)*

13 *(For general **weather** conditions in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For present and forecast weather conditions, visit: http://www.weatheroffice.gc.ca/canada_e.html. For maps relating to general weather patterns, visit: http://atlas.nrcan.gc.ca/site/index.html.)*

14 *(For **climate** normals and averages for selected locations in this area, visit: http://www.climate.weatheroffice.gc.ca. For maps relating to general weather patterns, visit: http://atlas.nrcan.gc.ca/site/index.html.)*

15 The **magnetic compass** is useless in the area described in this chapter.

Austin Channel

Chart 7980

16 **Austin Channel**, separating the SW side of **Bathurst Island** from Byam Martin Island, trends NW connecting Viscount Melville Sound with Byam Martin Channel. Its south entrance is between Cape Cockburn *(75°02'N, 100°22'W)* and Cape Gillman, 60 miles west; its north entrance is between Herbert Point and Fanshawe Point, 24 miles SW. Both sides of the channel are generally low and the east side is considerably indented.

17 **Caution**. — **Keene Bank** *(75°10'N, 102°00'W)*, in the centre of Austin Channel, consists of three east/west ridges covering an area of 8 miles in a north/south direction and 10 miles in an east/west direction. The bank is **steep-to** on its north, east and south sides therefore soundings will give little warning of its proximity; **least depth** over the bank is 3.1 m.

18 **Caution**. — Most depths in Austin Channel have been obtained by standard surveys but those on the west side of the channel along the east coast of Byam Martin Island are **spot soundings** through the ice and **shoal depths** in this area **have not been examined**. Depths in Bracebridge Inlet *(75°31'N, 100°30'W)* have been obtained by **reconnaissance** and **track soundings**. *(See the Source Classification Diagram on Chart 7890.)*

19 **Currents** in Austin Channel set mainly in a 140° direction at 0.3 knot between Schomberg and Fanshawe Points; mean flow in winter is less than 0.1 knot and can run either way in the channel. Tidal streams are 0.2 knot in mid-channel on large tides. The maximum observed current is 0.6 knot near Cape Cockburn.

20 The predominant **ice** in Austin Channel is first-year; the amount of multi-year ice present is related to the extent of the break-up in Byam Martin Channel to the NW.

21 Fracturing of the consolidated ice cover normally occurs during the first week of August with open water prevailing in the east half by the last week of August. During seasons when the ice cover in the north part of Byam Martin Channel remains solid, Austin Channel will be mainly open water by the last week of August.

22 **Caution**. — During those years when the ice cover in Byam Martin Channel breaks-up, large quantities of **multi-year ice** can drift into the west half of Austin Channel causing considerable ice congestion, particularly near Byam Martin Island.

23 New ice usually begins to form by mid September with the ice throughout the channel becoming consolidated during the third week of October.

24 *(For more information on **ice conditions** in this area see ARC 400 — General Information, Northern Canada, or visit: http://www.ice-glaces.ec.gc.ca.)*

Austin Channel — East Side

25 From Cape Cockburn *(75°02'N, 100°22'W, described in Chapter 10)*, the flat featureless coast of Bathurst Island, crossed by numerous streams, trends 8 miles north to **Peddie Bay**, a minor indentation with a shelving beach rising to a

sandy area several square miles in extent. About 2 miles NE of Peddie Bay, **Mount Bullock** rises gently to a round domed summit with an elevation of 186 m.

26 **Caution**. — An unexamined **shoal bank** extends 2 miles offshore from the south entrance point of Peddie Bay; the outer edge of the bank is surveyed and has a depth of 20 m over it.

27 **De la Beche Bay**, 4 miles north of Peddie Bay, is entered between Harding Point and an unnamed point 7 miles farther north. The bay divides into two arms 3 miles inside its entrance and its shores are low or rise gently to about 30 to 60 m.

28 **Caution**. — **Harding Point** is very low, with **shallow water** offshore.

29 A remarkable, steep-sided, level-topped **conspicuous hill** with an elevation over 150 m is 1 mile inland on the north side of the bay.

30 De la Beche Bay is normally free of **ice** from the last week of August until mid September.

31 **Playfair Point** *(75°21'N, 100°48'W)* is the low, flat elbow of a hooked peninsula.

32 **Caution**. — A **shoal bank**, with a least depth of 3.2 m, lies 3 miles off Playfair Point.

33 **Graham Moore Bay**, entered between Playfair Point and an unnamed point 30 miles WNW, indents the west coast of Bathurst Island.

34 **Caution**. — Depths in the approach to Graham Moore Bay are from standard surveys; in its associated bays and inlets the **depths** are from **reconnaissance surveys** and **track soundings**.

35 **Hooker Bay**, between Playfair Point and a long narrow peninsula 5 miles NE, is surrounded by gently sloping terrain; east of its head the land rises to rounded hills with elevations of 90 to 120 m. The small island lying off the north side of the bay is low-lying.

36 The north entrance point of Graham Moore Bay is low but rises to the NE to a broad, **radar-conspicuous hill**, 139 m in elevation, with a fairly steep slope on its west side.

37 First-year **ice** prevails in Graham Moore Bay during winter and spring months. Fracturing of the consolidated ice cover normally occurs during the first week of August with the bay clearing of ice by the end of the month. Freeze-up usually begins about mid September with a solid ice cover forming in the third week of October. Considerable variation in break-up and freeze-up can occur from one year to the next.

38 The north shore of Graham Moore Bay is generally low or of moderate elevation with numerous minor irregularities. About 10 miles inside the entrance, on the north side, cliffs 152 m in elevation front the bay.

39 **Bradford Island**, the largest of three islands 3 miles off the north shore, rises in its central part to 102 m. Islands off its east end and off **Scoresby Point**, its west end, have elevations of 30 and 6 m, respectively.

40 **Bracebridge Inlet**, entered between the north entrance point of Hooker Bay and an unnamed point 11 miles NNW, trends 19 miles ENE to where it narrows to about 0.5 mile and connects with a narrow inlet which trends 13 miles ENE.

41 The greater part of the land on both sides of Bracebridge Inlet attains elevations of 120 to 150 m. The coast on the north side is moderately indented but its south side has numerous peninsulas consisting of long, narrow limestone ridges projecting west, with narrow inlets between them. The slopes are generally gentle, rising to heights of 150 m.

42 The large island in Bracebridge Inlet has an elevation of 155 m. Three small elongated islands, each about 30 m in elevation, lie in a NE/SW direction about 2 miles south of the large island. Another island, about 60 m in elevation, lies about 1.5 miles NE of Hooker Bay. Two more small islands, with elevations of 30 and 60 m, are near the head of Bracebridge Inlet.

43 **Variscan River** and **Crying Fox Creek** flow into inlets on the SE side of Bracebridge Inlet. **Bracebridge River** flows into the north side of the inlet, north of the large unnamed island.

44 **Schomberg Point** *(75°33'N, 102°47'W)*, broad and low with a hill, reaches an elevation of 190 m, about 0.5 mile inland.

45 **Herbert Point**, 6 miles NNW, is the extremity of a peninsula which rises to an elevation of 90 m. About 7 miles to the east the land rises to an elevation of 240 m.

Austin Channel — West Side

46 **Byam Martin Island** separates Austin Channel to the east from Byam Channel to the west. Byam Martin Channel lies to the north of Byam Martin Island.

47 **Caution**. — **Langley Point** *(75°10'N, 103°35'W)*, the east extremity of Byam Martin Island, and **Hall Point**, 13 miles NNW, are bordered by **shoal water**.

48 **Fanshawe Point**, the low north extremity of Byam Martin Island, marks the junction of Austin, Byam and Byam Martin Channels.

49 **Caution**. — **Reconnaissance surveys** indicate Fanshawe Point is bordered by **shoal water**, extending about 2.5 miles off the north shore. However, when *St. Roch* rounded Fanshawe Point 0.25 mile offshore, constant depths of 18 m were found.

50 About 1 mile inland from Fanshawe Point, the land rises to an elevation of 78 m.

Byam Channel

51 **Byam Channel** lies between Byam Martin Island and the SE side of **Melville Island**; it is entered from Viscount Melville Sound between Cape Gillman and Nelson Griffiths Point, 27 miles west. Byam Channel trends 30 miles north to its junction with Byam Martin Channel between Fanshawe Point and Richardson Point, 20 miles WNW.

52 **Caution**. — **Depths** in the south approach to Byam Channel are from **spot soundings** through the ice and **shoal depths have not been examined**. The cross section of the channel between Kay Point and May Cove is based on a standard survey but it should be noted soundings were not obtained close to shore. Depths in the north approach are from **reconnaissance and track soundings**. *(See Source Classification Diagram shown on the chart.)*

53 **Caution**. — A **shoal** with a depth of 17.4 m, position approximate, is 3 miles east of Rea Point.

54 In Byam Channel, between Fanshawe and Richardson Points, the flood stream sets between 000° and 025° at 0.25 knot and the ebb stream in a 200° direction at up to 0.75 knot.

55 Fracturing of the consolidated **ice** cover normally occurs during the second week of August and the ice cover reduces in concentration through the remainder of the month. During seasons when the ice cover in the north part of Byam Martin Channel remains solid, Byam Channel will be mainly open water during the first part of September until freeze-up starts.

56 **Caution**. — During those years when the ice cover in Byam Martin Channel breaks up, large quantities of **multi-year ice** can rapidly drift into Byam Channel causing considerable ice congestion.

57 New ice starts to form in the open water areas of Byam Channel in mid September. Consolidation of the ice cover is usually complete by the third week of October.

58 The amount of multi-year ice in Byam Channel during winter and spring months is directly related to the break-up of Byam Martin Channel, to the north, in the previous summer. In most years first-year ice predominates.

59 *(For a more detailed description of **ice conditions** in this area, visit: http://www.ice-glaces.ec.gc.ca.)*

Byam Channel — East Side

60 The west side of Byam Martin Island rises gently across an alluvial plain to elevations inland of 120 m.

61 **Kay Point**, 12 miles WNW from Cape Gillman, is the low-lying west extremity of Byam Martin Island. The coast to May Cove, 8 miles NNE, is fringed by light limestone cut by numerous streams. **May Cove**, a square-shaped bay, is between two deltas. Fanshawe Point lies 14 miles to the NE.

Byam Channel — West Side

62 The land north from Nelson Griffiths Point *(75°03'N, 105°59'W, described in Chapter 10)* is low-lying; it is marked with the lines of raised beaches and has large deltas projecting seaward. Low hills with elevations of 150 m rise gently 6 miles inland.

63 **Robertson Point**, 8 miles NNE of Nelson Griffiths Point, is a low, rounded point formed by a broad, south trending ridge of slightly greater elevation than the surrounding land.

64 **Consett Head**, 8 miles NNE, is a low point formed by a delta.

65 **Rea Cove** *(75°21'N, 105°40'W)*, entered south of **Birch Point**, is 0.5 mile wide and indents the coast for 0.5 mile. The coast is quite low, rising gradually inland. **Rea Point**, 2 miles NNE, is a low delta with a sand and clay beach extending 0.5 mile inland.

66 **Caution**. — **Shoal depths** of 18 m exist at the entrance to Rea Cove, reducing gradually to 9 m near the beach. The deepest water lies close off the north shore where 8 m depths can be found at a distance of 30 m off the beach.

67 A former landing beach, 0.2 mile west of Birch Point, is composed of fine sand and clay; it is 0.15 mile long and 0.2 mile wide. In 1969, a 61 m long barge with a ramp provided a temporary wharf with a depth of 7 m alongside.

68 The **tidal range**, mean tides, is 0.8 m at Rea Point; for large tides the range is 1.3 m. Weather induced, non-tidal fluctuations had a maximum range of 0.3 m during the course of a year.

69 Hourly **weather data** for Rea Point may be viewed at: *http://www.climate.weatheroffice.ec.gc.ca/climateData/canada_e.html*.

70 Rea Point gravel airstrip, 1 mile north of the landing beach, is abandoned.

71 **King Point**, 5 miles NNE of Rea Point, is the broad, flat delta of **Baldwin River**.

72 Between King Point and Richardson Point, 5 miles north, the coast is indented by a bay with a broad, low peninsula projecting from its central part. An island lies about 0.5 mile south of the peninsula. Oil and gas exploration has taken place in this area.

73 **Caution**. — The broad, low peninsula is bordered by **shoals**.

Byam Martin Channel

Charts 7951, 7980

74 **Byam Martin Channel** *(76°00'N, 105°00'W)*, between the islands lying off the NW side of Bathurst Island and the east side of Melville Island, connects the north entrances of Austin and Byam Channels to the unnamed water area between Desbarats and Hazen Straits. The channel is entered from south between Herbert, Fanshawe and Richardson Points, and trends 90 miles NNW to its north entrance between Success Point on Cameron Island and Cape George Richards, at the north extremity of Melville Island, nearly 60 miles WNW. The channel varies in width from 20 to 55 miles. Its east side comprises four large islands and the channels between them; its west side is generally low, indented with bays and rises inland to moderate elevations.

75 **Oil and gas exploration** was conducted along the east and west sides of Byam Martin Channel, and from winter ice in the waters to the north, for a number of years. An oil well on the south end of Cameron Island, near Bent Horn Creek, is now abandoned. All freight for the exploration and exploitation of oil and gas was airlifted from a staging area at Rea Point.

76 **Abandoned** oil and gas exploration airstrips are at Cameron Island *(76°22'N, 104°05'W)*, Drake Point *(76°24'N, 108°32'W)* and Sherard Bay *(76°05'N, 108°30'W)*.

77 **Caution**. — **Depths** along the west side of Byam Martin Channel, as far north as Bradford Point, are from **reconnaissance surveys** and **track soundings**. Depths north of a line between Cape Aldrich and Bradford Point have been obtained by **spot soundings** through the ice and **shoal depths have not been examined**. *(See Source Classification Diagram shown on the chart.)*

78 The **tidal range**, large tides, at the south end of the channel near Longford Point is 1.2 m and at the north end near Maria Point 0.6 m.

79 Residual **current** flows of 0.1 knot have been observed in late winter. A **tidal stream** of 0.4 knot has been observed off Maria Point and the maximum **tidal stream** observed in the channel is 0.5 knot.

80 **Caution**. — The north portion of Byam Martin Channel contains mainly **multi-year ice** while the south portion contains varying amounts of first-year ice depending upon the extent of break-up the previous year.

81 Giant multi-year ice floes sometimes become trapped across the narrowest part of the channel between Melville Island and Île Vanier. When this occurs, the south part of the channel clears of ice during the last week of August and only first-year ice is found there the following year. These giant floes break up during warm summers resulting in considerable quantities of multi-year ice drifting into Viscount Melville Sound through Byam and Austin Channels. During particularly cold summers, the ice cover sometimes remains unbroken as far south as the north tip of Byam Martin Island.

82 The consolidated ice cover in Byam Martin Channel normally begins to fracture in the south part during the second week of August and in the north part by the end of the month. New ice begins to form in the north part during the second week of September and spreads rapidly to the remaining areas by the middle of the month. The ice cover usually consolidates in the north part during the fourth week of September with the whole channel attaining solid ice cover during the third week of October.

83 *(For a more detailed description of the **ice conditions** in this area visit: http://www.ice-glaces.ec.gc.ca.)*

Byam Martin Channel — West Side

84 **Richardson Point** *(75°33'N, 105°26'W)* is a low, flat point formed by the delta of a stream. The coast between Richardson Point and **Burnett Point** is low-lying, rising a short distance inland to elevations of about 150 m 5 miles inland. A small bay, close north of Burnett Point, has low shores and a low islet close inside its north entrance point.

85 **Towson Point**, 8 miles north of Burnett Point, is low, free of deltas and has numerous raised beach lines. **Bradford Point** is also low and free of deltas although several streams enter the channel nearby.

86 Between **Boat Beach** and **Domett Point** the coastal plain is about 2 miles wide.

87 **Caution**. — **Air photos** indicate **shoals** and sand flats extend off Domett Point.

88 **Sabine Peninsula**, west of Domett Point, extends about 60 miles north and forms the NE end of Melville Island.

89 **Weatherall Bay**, west of Domett Point, is divided into east and west arms by a broad peninsula formed by **Spencer Range**, which attains elevations of 360 m. **Baldwin Walker Range**, elevation 150 to 300 m, lies along the east side of Weatherall Bay; the east arm of the bay has cliffs for most of its length. About 6 miles inside the east arm another inlet branches off to the east. The west arm of Weatherall Bay trends 11 miles SW. Its entrance is marked by high ground on both sides; that to the west rises to an elevation of 210 m. Cliffs are on the east side near the head of the west arm. A large river enters the arm near the cliffs through a braided channel; another river enters on the west side of the west arm.

90 The coast is low and flat west of Weatherall Bay, but 1 mile inland a line of hills rise steeply to elevations of 150 m.

91 **Cape Selwyn** *(76°04'N, 107°51'W)* and **Maori Point**, 3 miles SE, are low, rising to sandstone hills with elevations of 90 and 120 m.

Chart 7951

92 **Sherard Bay** *(76°08'N, 108°00'W)* has a low coastline; several river deltas extend into the south part of the bay. **Hiccles Creek** enters the south coast of the bay 3 miles west of Cape Selwyn. Hills behind the south coast rise to elevations of about 150 m; **Mount Grey** attains an elevation of 180 m. Hills behind the west coast rise to elevations of 60 m. Considerable oil and gas exploration has been undertaken in this vicinity.

93 An airstrip *(76°05'N, 108°30'W)* at Sherard Bay is abandoned.

94 **Warren Point**, **Invincible Point** and **Marryatt Point**, north of Sherard Bay, are low, flat spits formed by deltas. Inland the coast is backed by rolling hills. **Barrow Range**, extending north along the centre of Sabine Peninsula, attains its maximum elevation of 290 m at its north end abreast Eden Bay.

95 **Drake Point** *(76°28'N, 108°24'W)* is low, rising a short distance inland to a hill with an elevation of 63 m. Several oil and gas wells have been drilled in the vicinity.

96 Drake Point airstrip, on the south side of the unnamed bay south of Drake Point, is abandoned.

97 **Caution**. — **Submerged obstructions** and **submerged pipelines** exist in the inshore area off Drake Point and a **submerged oil well-head** is about 7 miles ENE of the point in 76°30'N, 108°00'W.

98 **Cape Collingwood**, north of Drake Point, is a low, flat point formed by a delta.

99 **Cape Caledonia** *(76°33'N, 108°29'W)* rises to an elevation of 60 m.

100 **Caution**. — Cape Caledonia has a foreshore of flat beaches that terminate in a gravel ridge caused by **ice pressure**.

101 **Eden Bay**, between Cape Caledonia and **Gore Point**, has low shores. Two deltas form low points which project into the bay.

102 **Cape Colquhoun** *(76°44'N, 108°23'W)* is the east extremity of a **conspicuous promontory** that rises to an elevation of 219 m; this is the east end of **Henrietta Range**. The lower slopes of the promontory are formed of gradually sloping sandstone, the upper slopes by limestone that rises steeply; the slopes are deeply cut by ravines.

103 **Cape George Richards**, the NW entrance point of Byam Martin Channel, is the north end of a small low-lying island at the north extremity of Sabine Peninsula.

Pell Inlet

Chart 7980

104 **Pell Inlet**, entered from the east side of Byam Martin Channel between Herbert Point *(75°38'N, 102°52'W)* and **Longford Point**, leads NE to Erskine Inlet.

105 **Caution**. — Do not round Herbert Point in less than 100 m of water due to the **uneven bottom topography** and **unexamined shoals**. The MV *Arctic*, accompanied by CCGS *Des Groseilliers*, used Pell Inlet August 26, 1985 when proceeding north from Rea Point to the Bent Horn oil field on Cameron Island.

106 **Caution**. — Although the route through Pell Inlet has been surveyed **not all shoal depths have been examined** because of ice cover.

107 The **tidal range** of large tides off Longford Point is 1.2 m.

108 A steady westerly **current** was observed to flow through the west entrance of Pell Inlet for several days during August and September 1977.

109 Pell Inlet is free of **ice** during August in most years.

110 Ski-wheel equipped aircraft have landed on frozen shore leads at Longford Point.

111 **Alexander Island** forms the north side of Pell Inlet. The island attains an elevation of 148 m near its SW end and 198 m near its NE end. It is divided by a low east/west trending valley that crosses the island about 8 miles ENE of Longford Point. There are two bays on the south shore of the island, about 8 miles east of Longford Point. Each bay has a west trending bar that projects from its east entrance point.

Boyer Strait

112 **Boyer Strait** leads ENE from the east side of Byam Martin Channel to Erskine Inlet between Alexander Island and **Massey Island**. **Île Marc** lies 1 mile south of Massey Island in the west entrance to Boyer Strait.

Pearse Strait

113 **Pearse Strait** leads ENE from the east side of Byam Martin Channel to Erskine Inlet between Massey Island and **Île Vanier**. **Île Pauline**, near mid-channel in the west entrance to Pearse Strait, has an elevation of about 9 m. The coasts of the strait are very low with numerous streams. The narrow coastal lowland is backed by gently sloping hills; those on Île Vanier attain an elevation of 254 m in the **Adam Range**.

114 **Caution**. — Pearse Strait is bordered with **shoal water** close inshore. **Depths** have not been

obtained close to shore in the east and west entrances to Pearse Strait.

115 Pearse Strait, due to the warmer water of the run-off streams flowing into it, clears of **ice** long before Austin Channel and Erskine Inlet.

116 **Cape Aldrich** *(76°06'N, 104°23'W)* rises to elevations between 60 and 90 m. **Air photos** indicate a potentially good harbour, 6 miles ESE of Cape Aldrich.

Arnott Strait

117 **Arnott Strait** leads ENE from the east side of Byam Martin Channel to Erskine Inlet and separates Île Vanier from **Cameron Island**. Except for low cliffs on Cameron Island, about 4 miles east of Cape Kennedy, both the north and south shores of Arnott Strait are low and flat; the shores rise a short distance inland to hills.

118 **Historical note**. — The MV *Arctic*, accompanied by CCGS *Des Groseilliers*, entered Arnott Strait from Erskine Inlet August 26, 1985 and loaded 100,000 barrels of oil in the vicinity of Bent Horn Creek on Cameron Island. MV *Arctic* left Cameron Island August 27 and proceeded through the west entrance then south down Byam Martin Channel; this was the first full load of oil shipped from Cameron Island.

119 **Caution**. — **Depths** in Arnott Strait were obtained by **spot soundings** through the ice in 1985. **Shoals** in the east entrance to the strait, which may be dangerous to deep-draught vessels, **were not examined** because of ice coverage; those in the west entrance were examined.

120 The central part of Arnott Strait becomes free of **ice** during the summer melt season.

121 **Caution**. — The east and west entrances of Arnott Strait generally remain congested with **multi-year ice**.

122 The **tidal range** of large tides off Cape Kennedy, at the west entrance, is 0.7 m.

123 A **tidal stream** of 1.2 knots was observed close to shore on the north side of the strait.

124 **Cape Hotspur** *(76°10'N, 104°27'W)* rises from a low point to a rounded hill about 120 m in elevation. **Key Point**, 4 miles NNE, is a small, low, rocky peninsula; about 2 miles inland a prominent hill rises to an elevation of 198 m.

125 **Cape Kennedy** *(76°20'N, 104°23'W)* is the west extremity of a low-lying peninsula forming the SW extremity of Cameron Island.

126 **Caution**. — The low-lying peninsula is bordered by a narrow belt of **shoal water**.

127 **Bent Horn Creek**, 7 miles east of Cape Kennedy on the south coast of Cameron Island, flows into Arnott Strait.

128 Crude oil production, storage and shipping facilities at Bent Horn Creek were abandoned in 1998. No structures remain.

129 **Cape Clerk** *(76°25'N, 103°01'W)*, at the NE end of Arnott Strait, is a low delta. **Sophie Point**, 6 miles south, rises to an elevation of 150 m about 0.5 mile inland.

Cameron Island — West Coast

130 **Pym Point** *(76°24'N, 104°28'W)* is low and has a small bay on its south side.

131 **Caution**. — A low islet in the small bay is bordered with **shoals**.

132 **Maria Point**, 7 miles NNW of Pym Point, is also low. A low valley extends NE across Cameron Island from the head of the bay between Pym and Maria Points to the head of Robert Harbour.

133 The **tidal range**, large tides, at Maria Point is 0.6 m.

134 A **tidal stream** of 0.4 knot has been observed in the vicinity of Maria Point.

135 **Success Point**, 5 miles NNW of Maria Point, is low and formed by a delta. A hill midway between Maria and Success Points rises to an elevation of 104 m.

136 **Cameron Island Rise** *(76°45'N, 105°40'W)* extends 45 miles NW from the NW side of Cameron Island. Depths over the rise are in excess of 100 m about 10 miles offshore.

Desbarats Strait

137 **Desbarats Strait**, about 24 miles wide, separates the north side of Cameron Island from the **Findlay Group** of islands. **Desbarats Basin** *(76°40'N, 103°00'W)*, at the east end of Desbarats Strait, extends SE along the east side of Cameron Island and has depths in excess of 600 m.

138 An island *(76°50'N, 103°20'W)*, reported in 1982, lies in the north end of Desbarats Basin in the centre of the east end of Desbarats Strait.

139 **Caution**. — **Depths** in Desbarats Strait are from **spot soundings** through the ice and **shoal depths have not been examined**.

140 The tide is semi-diurnal in this area with a **tidal range**, large tides, of 0.5 m.

141 **Patterson Island** *(77°03'N, 103°41'W)* and **Grosvenor Island**, 2 miles NW, have gently sloping coasts and attain elevations of 58 and 56 m.

142 **Edmund Walker Island**, 3 miles NW of Grosvenor Island, has low coasts but inland green fertile slopes rise to an elevation of 134 m. Surface coal has been found on the island.

143 **Stupart Island**, in the narrow channel separating Edmund Walker Island from Lougheed Island, is low, flat and sandy. A dome shaped islet lies off its SW side.

144 **Caution**. — **Air photos** indicate **shoal water** surrounding Stupart Island except off its SE side where it appears relatively deep.

145 **Lougheed Island**, the largest island of the Findlay Group, rises from low, sometimes marshy, shores to a central ridge well covered with vegetation that attains a maximum elevation of 137 m near the north end of the island. Caribou, wolves and several species of birds have been seen on the island. The SE part of Lougheed Island is a wide, low plain and, along the coast north of Stupart Island, a 5-mile long black mass of surface **coal** is **conspicuous**. Gas and oil exploration has taken place offshore in the general vicinity of the island.

146 **Skybattle Bay** is at the SW extremity of Lougheed Island. **Cape Rondon** *(77°19'N, 104°25'W)* is a low point on the east side of the island. **Cape Ahnighito**, the NW extremity of Lougheed Island, is low.

147 **Caution**. — Cape Ahnighito has numerous beach ridges caused by **ice pressure**.

148 Lougheed Island airstrip, about 11 miles NW of Cape Rondon on the shore of a large bay on the east side of the island, is abandoned.

149 **Lyall Point** *(76°41'N, 104°15'W)*, the north extremity of Cameron Island, is low, rising to an elevation of 73 m about 2 miles inland. **Toms Point**, 3 miles SW, is low-lying.

150 **Robert Harbour** indents the NE coast of Cameron Island close south of **Cape Davis**. A river flows into the head of the harbour through a wide valley that crosses Cameron Island in a SW direction.

151 **Caution**. — **Air photos** indicate the inner part of Robert Harbour is **shallow**.

152 **Cameron Bay**, between **Cape Fleetwood** and **Cape Fortune**, has a very low shoreline; several braided streams flow into the bay. **Mount Richards**, 3 miles west of Cape Fleetwood, attains an elevation of about 60 m. The low plain around Cameron Bay rises to the **Murray Hills**.

153 **Charles Point** *(76°27'N, 103°00'W)* is a low point rising to an elevation of 193 m at **Mount Wilmot** about 2 miles inland.

Erskine Inlet

154 **Erskine Inlet** indents the NW side of Bathurst Island and the outer part of its west side is formed by Alexander Island, Massey Island, Île Vanier and Cameron Island. Its north entrance lies between **Acheron Head** *(76°27'N, 101°54'W)* and Charles Point. From the west it can be entered by way of Pell Inlet, Boyer Strait, Pearse Strait or Arnott Strait.

155 **Caution**. — The west and central part of Erskine Inlet, north of Pell Inlet, was surveyed from 1973 to 1985. **Shoals** in the east entrance to Arnott Strait, which may be dangerous to deep-draught vessels, **were not examined** *(1985)* because of ice coverage. The south end and bays on the east side of Erskine Inlet are **not surveyed**. **Depths** in the north entrance are from **spot soundings** through the ice.

156 The **tidal range**, large tides, off Charles Point is 0.6 m.

157 A **tidal stream** of 0.3 knot was observed off Charles Point.

158 **Caution**. — The amount of **multi-year ice** in Erskine Inlet increases from south to north and is highly dependent on the extent of break-up and the frequency of NW winds during the melt season.

159 **Cape Elphinstone** *(76°19'N, 102°43'W)* is the NE point of Île Vanier. **Turnbull Point**, 7 miles SSE, is a low, round, rocky point. Between Cape Elphinstone and Turnbull Point the coast of Île Vanier rises steeply to elevations of 150 m. A low-lying spit extends from the SE end of Île Vanier, 4 miles south of Turnbull Point.

160 **Cape Head** *(76°04'N, 102°18'W)*, the east extremity of Massey Island, rises gradually to an elevation of 150 m about 1.5 miles inland.

161 **Hingston Harbour** *(76°22'N, 102°00'W)* has a small stream entering its NW side through a steep sided valley; another stream enters the head of the harbour through a broad low valley.

162 **Evans Bay** is 5 miles south of Hingston Harbour. A long narrow point, on the north side of the bay, attains an elevation of about 30 m and **Cape Hooper**, on its south side, rises steeply to an elevation of about 150 m.

163 An unnamed bay, south of Cape Hooper, penetrates Bathurst Island for 11 miles. The land on the south side of the head of the bay is low-lying. A steep ridge on the north side of the bay commences about 6 miles east of Cape Hooper and rises steeply from shore to elevations of 245 m; this ridge extends east across the peninsula to the north side of Dampier Bay.

164 **Caution**. — The unnamed bay south of Cape Hooper is **not surveyed**, but contains several **shoal areas**.

165 A small island lies 1 mile off the east shore of Erskine Inlet abreast the entrance to Boyer Strait.

166 An unnamed bay penetrates the shore of Bathurst Island opposite Pell Inlet; the bay has low shores, an island in its central part, and another island at the head near the south shore.

167 Erskine Inlet, south of Pell Inlet, has steep shores rising to elevations of about 150 m and several islands. A river flows through a wide, low valley at the head of the inlet.

168 **Caution**. — The unnamed bay opposite Pell Inlet, and Erskine Inlet, south of Pell Inlet, are **not surveyed**.

Hazen Strait

Chart 7951

169 **Hazen Strait** *(77°00'N, 110°00'W)*, west of the Findlay Group, separates Mackenzie King Island from Sabine Peninsula; it connects Byam Martin Channel to Ballantyne and Fitzwilliam Straits.

170 The strait is entered from the east between an unnamed point on Mackenzie King Island, 4 miles south of Cape Mamen, and Cape George Richards *(76°51'N, 108°45'W)*, 45 miles SSE. Its west entrance is about 30 miles SW between the unnamed south extremity of Mackenzie King Island and Macdougall Point *(76°27'N, 110°28'W)*, 57 miles SSE.

171 **Caution**. — **Depths** in Hazen Strait have been obtained by **spot soundings** through the ice and **shoal depths have not been examined**. A depth of 49 m, existence doubtful, is reported to lie in the west end of the strait 36 miles south of Mackenzie King Island in surveyed depths of 400 m.

172 Tides in Hazen Strait are semi-diurnal with a **tidal range**, large tides, of 0.5 m.

173 Consolidated **multi-year ice** covers Hazen Strait for much of the year with the exception of some breaks and narrow leads, in most years, during the first three weeks of September.

174 **Caution**. — Due to **ice** conditions, Hazen Strait is considered **unnavigable** *(2010)*.

175 *(For a detailed account of **ice conditions** in this area, see ARC 400 — General Information, Northern Canada, or visit: http://www.ice-glaces.ec.gc.ca.)*

Hazen Strait — North Approach

176 **Lougheed Island Basin** has depths in excess of 500 m and extends NNE from north of Sabine Peninsula, across the east entrance of Hazen Strait, and into the channel separating Lougheed Island from Mackenzie King Island.

177 The east coast of **Mackenzie King Island** is shelving and rises gradually to elevations of 60 to 90 m about 3 miles inland. Broad rocky exposures occur in the NE part of the island. A large, wide bay indents the east coast and has low shores especially at its head where a huge outwash plain is covered by a maze of braided streams. In the SW part of the bay three small islands lie close offshore and another island lies at the head of the bay.

178 **Cape Mamen** *(77°36'N, 110°02'W)* is one of several points, formed by deltas, on the east coast of Mackenzie King Island.

Hazen Strait — North Side

179 The south coast of Mackenzie King Island is similar to its east coast and has numerous points, formed by deltas, extending into Hazen Strait. **Cape Norem** is near the east end of the strait.

180 **Caution**. — The south coast of the island is bordered with **shallow water** and **shoals**.

181 West of the south extremity of Mackenzie King Island, Hazen Strait leads into Ballantyne Strait *(described later in this chapter)*.

Hazen Strait — South Side

182 The SE shore of Hazen Strait, formed by the NW coast of **Sabine Peninsula**, is irregular, low-lying and generally featureless. The shore is difficult to distinguish from the sea ice in places. It appears to be without vegetation or animal life. Inland the land rises to the Henrietta Range and further south to the Barrow Range.

183 **Vesey Hamilton Island** *(76°55'N, 109°10'W)*, with cliffs on its north side, rises to serrated peaks 90 m in elevation. A coastal plain on the south side of the island slopes gently seaward from the higher ground and is marked by numerous parallel streams. The east end of the island is a low, sharp point 7 m in elevation.

184 **Murray Harbour**, 3 miles SW of Cape George Richards, indents the north end of Sabine Peninsula and is protected on its north side by a low island.

185 **Roche Point** *(76°44'N, 109°27'W)* is the southernmost of two finger-shaped deltas at the mouths of two large braided streams 10 miles SW of Murray Harbour. The river bank south of the point rises steeply to a height of 18 m for about 1 mile inland.

186 **Hoyle Bay**, south of Roche Point, is a shallow bight on the west side of Sabine Peninsula.

187 **Caution**. — **Shoal water** extends 1 mile or more offshore between Hoyle Bay and Macdougall Point.

188 **Macdougall Point** *(76°27'N, 110°28'W)* is the west extremity of a narrow island with an elevation of about 2 m. The coast to the NE and south of the point is bordered by numerous low islets.

189 **Caution**. — **Shoal water** extends 4 miles offshore in the vicinity of Macdougall Point.

Hecla and Griper Bay

190 **Hecla and Griper Bay**, entered between Macdougall Point and Cleverly Point, on Sproule Peninsula, deeply indents the north coast of Melville Island and generally has low-lying coasts.

191 **Caution**. — **Depths** in Hecla and Griper Bay have been obtained by **spot soundings** through the ice and **shoal depths have not been examined**.

192 The consolidated **multi-year ice** cover usually begins to fracture in the fourth week of August; the ice cover reconsolidates during the fourth week of September.

193 **Caution**. — Due to **ice** conditions, Hecla and Griper Bay is considered **unnavigable** *(2010)*.

194 *(For a detailed account of **ice conditions** in this area see ARC 400 — General Information, Northern Canada, or visit: http://www.ice-glaces.ec.gc.ca.)*

195 **Chads Point**, 17 miles SE of Macdougall Point, is a large but inconspicuous finger-shaped river delta projecting 3 miles south from Sabine Peninsula.

196 **Eldridge Bay**, a large bight on the east side of Hecla and Griper Bay, is entered between Chads Point and Cape Mudge, 18 miles south.

197 **Caution**. — The shore of Eldridge Bay is bordered with **shoal water**.

198 **Cape Mudge**, the extremity of the peninsula separating Eldridge Bay from Sabine Bay to the south, is a bluff headland terminating in a low point. Its south side is steep and rises to an elevation of 100 m.

199 **Caution**. — Heavy **ice pressure** has been reported on the low point of this cape.

200 **Sabine Bay**, the SE part of Hecla and Griper Bay, is entered between Cape Mudge and Nias Point and trends ESE at the base of the Sabine Peninsula. **St. Arnaud Hills**, reddish in colour, rise inland on the north side of the bay to an elevation of 210 m. **Sabine River** enters the SE corner of the bay through a wide delta. **Reid Point**, on the south shore of the bay, is low.

201 **Caution**. — The shores of Sabine Bay are low, bordered with **shoal water**, and in some places flood plains extend 10 miles inland.

202 **Nias Point** *(75°35'N, 110°26'W)*, 30 m in elevation, forms the south entrance point of Sabine Bay. Parry reported "a continuous line of very large hummocks extended from Nias Point, about 2.5 miles in a NNE direction; they are the kind of hummocks that always indicate the ice having met with resistance by grounding; I had little doubt that a reef was clearly marked out by them".

203 An **islet** is 8 miles WNW from Nias Point.

204 The south shore of Hecla and Griper Bay extends 12 miles west from Nias Point, then trends 20 miles north to Cape Fisher along a flat, eroded coast where alluvial deposits from innumerable streams create low, poorly drained promontories.

205 **Cape Fisher**, a bold headland, rises to an elevation of 45 m and is connected to the mainland by a narrow neck of land.

206 **McCormick Inlet**, entered between Cape Fisher and an unnamed point 6 miles NW, has a low south shore rising inland to the **Blue Hills**. In this vicinity, the Blue Hills have elevations of 150 to 250 m. A river at the head of McCormick Inlet runs over a large outwash plain. The north shore of the inlet rises gradually and the steep faces of the **Raglan Range** occur in places.

207 **Caution**. — A large **shoal area** at the head of McCormick Inlet has been formed by sediment from the river.

208 **Middle Island**, with **Middle Point** its narrow east extremity, is in the entrance to McCormick Inlet and rises to an elevation of 90 m. A smaller island and several islets off its south shore lie near the head of the bay.

209 **Hillock Point**, 6.5 miles NW, was named by M'Clintock because of the confused mounds of shingle, varying between 6 and 18 m in elevation, found here.

210 Between Hillock Point and Long Point, 16 miles NW, the north margin of the Raglan Range approaches within 1 mile of the coast. At the seaward end, the range has an elevation of 150 m; about 10 miles inland it reaches an elevation of 470 m.

211 **Long Point** is an extensive delta formed by the **Kitson River**.

212 **Cape Grassy** *(76°17'N, 113°00'W)*, 10 miles NW of Long Point, is a small rocky peninsula enclosing a small cove. It is covered with grass which even in winter sticks up through the snow *(1994)*. A steep-faced ridge rises 0.5 mile inland to between 60 and 90 m.

213 A large unnamed bight indents the north end of the west shore of Hecla and Griper Bay, between Cape Grassy and Cleverly Point, 20 miles NW. The coast in the south part of this bight is well vegetated and musk-oxen, caribou, lemmings, seals, ptarmigan and various birds have been seen here. Several streams discharge into the bight. Coal has been found, 5 miles west of Cape Grassy, and oil and gas exploration has also taken place in this area.

214 A large outwash point is 5 miles north from the head of the unnamed bight between Cape Grassy and Cleverly Point. **Depot Island**, low and featureless, lies 1 mile offshore, 3 miles further north. The low coast, cut by numerous streams, continues north to **Cleverly Point** *(76°29'N, 114°09'W)*. To the SW of Cleverly Point, the land rises gradually to an elevation of 100 m. Cleverly Point is the low west entrance point of Hecla and Griper Bay.

215 *(The coast west of Cleverly Point and the islands to the north are described later in this chapter.)*

Kellett Strait

Charts 7000, 7572, 7832, 7952

216 **Kellett Strait** *(75°30'N, 118°00'W)* leads NE from M'Clure Strait to Fitzwilliam Strait and separates Melville Island to the east from Eglinton Island to the west. Cape Russell and Pedder Point form its south entrance; its north entrance lies between Cape De Bray and Wilkie Point. The Melville Island shore has steep cliffs rising to elevations in excess of 300 m a short distance inland and is deeply indented by Purchase and Ibbett Bays. To the west is Eglinton Island; its low-lying shores provide a distinct contrast.

217 **Depths** in Kellett Strait have been obtained by **spot soundings** through the ice. They indicate deep water and no evidence of any dangers.

218 The solid **ice** cover in Kellett Strait begins to fracture during the last week of July in the south end with the ice becoming completely mobile by the end of the first week of August. Much of the first-year ice melts by the time freeze-up starts during the second week of September. Consolidation of ice in the strait usually begins in the north end during the last week of September and is complete before mid October.

219 **Caution**. — About 20% surface coverage by **multi-year ice** can be found in the strait during a normal year.

Chart 7000

Kellett Strait — East Side

220 Steep cliffs front almost the entire east side of Kellett Strait. The strait is deeply indented on this side by Purchase and Ibbett Bays.

Chart 7572

221 North of Cape Russell *(75°15'N, 117°40'W) (described in Chapter 10)* the cliffs are interrupted by **Comfort Cove**. A large braided stream flows seaward through a ravine and over a large delta at the south side of the cove. A remarkable peaked cliff rises to an elevation of 279 m 2.5 miles north of Comfort Cove. The cliffs continue NNE, with an inland elevation of 320 m; at Kelly Point *(not named on the chart)*, 9 miles NNE, the land 2.5 miles inland has an elevation of 300 m.

222 **Caution**. — Comfort Cove is filled with **shoals**.

Chart 7000

223 *(None of the following features are named on the chart.)*

224 **Purchase Bay**, entered between **Kelly Point** *(75°28'N, 117°17'W)* and Stevens Head, 7 miles NNE, extends 19 miles east and then 17.5 miles NE to its head. A stream discharges through high cliffs and over a delta at the head of the bay.

225 The south side of Purchase Bay is lined with cliffs with elevations between 150 and 180 m; these are cut by streams discharging through steep-sided gorges and backed inland by hills rising between 300 and 375 m. **Giddy River**, about 15 miles east of Kelly Point where the shore is much lower, enters Purchase Bay over a large delta; 6 miles further east an unnamed river enters the bay over a smaller delta. A small bay indents the south shore 6.5 miles SW of the head of Purchase Bay. A large braided stream, fed by three glaciers, enters the head of Purchase Bay. The land in the vicinity of the glaciers rises to over 600 m.

226 Two small islands are about 6 miles SW of the head of the bay, and a larger island is about 1 mile off the north shore, about 18 miles east of Stevens Head.

227 **Leopold Glacier** *(75°49'N, 114°45'W, shown on Chart 7952)* is 5 miles NE of the head of Purchase Bay.

228 The north side of Purchase Bay is similar to the south side; it also is steep-sided and broken by numerous deep gorges and streams, with high land backing the coast.

229 The few **depths** *(not charted)* available have been obtained by **spot soundings** through the ice and indicate deep water in the bay.

230 **Stevens Head** *(75°35'N, 117°14'W)*, the north entrance point of Purchase Bay, is at the mouth of a stream which enters the bay through a break in the cliffs.

Chart 7952

231 From Stevens Head to Humphries Head *(75°48'N, 116°49'W)*, the coast is formed of steep cliffs with elevations between 210 and 300 m. The cliffs are mainly dark sandstone rock with some layers of pale reddish-yellow, broken at intervals by ravines and streams.

232 **Cape Terrace** is the most prominent of these coastal cliffs. This cape, the extremity of a central ridge, can be recognized by the absence of ravines.

233 **Humphries Head** rises in steep cliffs to comparatively low tableland. The coast in the vicinity is a series of cliffs and terraces, with several rows of buttresses and pinnacles, rising at an angle of about 40° from the sea.

234 **Ibbett Bay**, entered between Humphries Head and **Nisbet Point** 6 miles north, penetrates 29 miles east into Melville Island. The south shore of the bay is lined with cliffs with elevations of 180 m, rising to a tableland with an elevation of 610 m. About 9 miles east of Humphries Head, a braided stream breaks the line of cliffs. A comparatively low point is 8 miles farther east. Two small islands lie 1.5 and 3.5 miles SW of the head of the bay. A large braided stream enters the head of Ibbett Bay. On the north shore the **Canrobert Hills**, steep-faced with many ravines, also reach

an elevation of 610 m. The foreshore is narrow and for 7 miles east of Nisbet Point the coast is cliffy.

235 The few **depths** available have been obtained by **spot soundings** through the ice and indicate fairly deep water throughout.

236 **Blackley Haven**, 5 miles north of Nisbet Point, indents the coast for 3 miles; a large braided stream enters at its head. A **conspicuous** perpendicular **cliff** on the south shore of Blackley Haven, 450 m in elevation, is the highest land bordering the coast and has been reported to be visible at a distance of 45 miles.

237 **Cape De Bray** *(76°07'N, 116°37'W)*, 6 miles farther north, is cliffy and cut by a ravine where a stream flows to the sea. The cape is backed by hills rising between 90 and 150 m and reaching an elevation of 445 m inland.

Charts 7832, 7952

Kellett Strait — West Side

238 **Eglinton Island** *(75°50'N, 118°20'W)* separates Kellett Strait from Crozier Channel and its south coast borders on M'Clure Strait. Fitzwilliam Strait extends north from the north side of the island. Three irregular flat-topped ridges, with elevations of 150 to 200 m extend north from the south end of the island. Its north and east coasts are low.

239 The west side of Kellett Strait is low and almost featureless. **Samuel Point** *(75°32'N, 118°26'W)* is the outlet of a small stream.

240 **Catherine Point** *(75°44'N, 117°55'W)*, 20 m in elevation, lies at the mouth of a stream on the north side of **Moreton Bay**. A prominent flat-topped hill with an elevation of 200 m lies 5 miles west of Catherine Point and **Hill of Barra (Barra Hill)**, 6 miles SSW of the same point, rises to about 150 m. North of Catherine Point the coast of Eglinton Island is low and featureless.

241 Kellett Strait meets Crozier Channel between the NE extremity of Eglinton Island and Wilkie Point.

Crozier Channel

242 **Crozier Channel** *(75°55'N, 119°00'W)* leads NE from M'Clure Strait to Fitzwilliam Strait and separates Eglinton Island from the SE side of Prince Patrick Island. Crozier Channel is entered from the south between Cape Nares and Cape Cam and from the north between the unnamed point 3.5 miles SE of Gardiner Point and Wilkie Point.

243 **Depths** in Crozier Channel have been obtained by **spot soundings** through the ice. They indicate deep water and no evidence of any dangers.

244 The **tidal range** of large tides at Mould Bay, on the west side of Crozier Channel, is 0.7 m.

245 The solid **ice** cover in Crozier Channel begins to fracture during the last week of July in the south end with the ice becoming completely mobile by the end of the first week of August. Much of the first-year ice melts by the time freeze-up starts during the second week of September. Consolidation of the channel usually begins in the north end during the last week of September and is complete before mid October.

246 **Caution**. — About 20% surface coverage by **multi-year ice** can be found in the channel during a normal year.

Chart 7832

Crozier Channel — East Side

247 Between Cape Nares *(described in Chapter 10)* and **Callaghan Point**, 19 miles NE on the west coast of Eglinton Island, there are several braided streams whose deltas have apparently been washed away by the velocity of the current as it flows into M'Clure Strait. From Callaghan Point to **Gardiner Point**, 21 miles NE, the deltas of similar streams curve to the south also apparently in response to the action of the southerly current flowing through Crozier Channel.

248 The land rises to an elevation of 212 m NE of Cape Nares and south of Callaghan Point it reaches 207 m.

Chart 7952

Crozier Channel — West Side

249 **Butter Bay** *(75°52'N, 120°08'W)* penetrates 4.5 miles north into Prince Patrick Island between cliffs with elevations of 80 m on its west side and over 120 m on its east side. The land rises to 280 m 4 miles NNE of the head of the bay.

250 **Caution**. — **Drying shoals** exist at the head of Butter Bay, especially on the west side.

251 Cliffs, 30 m in elevation, front the coast between Butter Bay and **Cape Frederick**, 5.5 miles NE; a ravine cuts the cliffs. Behind Cape Frederick, the land rises to an elevation of 198 m.

252 **Caution**. — A **shoal depth** of 18.3 m lies 1.5 miles south of Cape Frederick.

253 A T-shaped peninsula, rising on its east side to an elevation of 90 m, projects ESE from the coast 2.5 miles north of Cape Frederick. The land, at the head of the bay south of the peninsula, also rises to 90 m.

254 **Carter Bay**, between the T-shaped peninsula and **Dames Point**, has low shores. Near the south end of Dames Point the land rises to an elevation of 60 m.

Mould Bay

255 **Mould Bay**, entered between Dames Point and **Manson Point** 9.5 miles NE, extends 19 miles NNW.

256 Narrow beaches of coarse sand and shingle, interspersed with wide deltas and muddy flats, border the bay. Behind the shore, rolling hills rise to the most rugged highlands of Prince Patrick Island. The land on the west side of the bay rises steeply to elevations between 210 and 250 m, on the east side of the bay cliffs rise abruptly to 120 m and further inland the hills rise to a plateau with an elevation of 180 m. The head of the bay is divided into two arms by a headland with an elevation of 150 m. Along the west shore of the bay streams discharge into the heads of three small, steep-sided bays.

257 **Caution**. — **Depths** in Mould Bay are from **spot soundings** through the ice; very deep water is indicated throughout the bay. The bay has a fine mud bottom.

258 **Ice** in Mould Bay normally begins to break up in the last week of June with the bay clearing early in the second week of August. The bay does not completely clear of ice every year. Freeze-up usually begins during the second week of September with a solid ice cover forming by the end of the third week. Two to three weeks variation in break-up and freeze-up can occur. The average thickness attained by winter shore-fast ice in the bay is 201 cm with a record maximum thickness of 234 cm measured in 1957.

259 Mould Bay **weather station** is on the east shore of the bay, 9.5 miles within the entrance. Coal has been found nearby.

260 Mould Bay was once a manned weather station; now, an automated system relays weather data to *Environment Canada* via satellite. The **conspicuous** abandoned weather station **buildings** are the only structures in the area. *(These buildings are badly deteriorated; Environment Canada plans to remove them and remediate the site, commencing in 2011.)*

261 An airstrip *(76°14'N, 119°19'W)* at Mould Bay is abandoned.

262 **Caution**. — There are no facilities or services available at Mould Bay.

263 *Mould Bay (Index No. 6955)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

264 *(For **climate** normals and averages for Mould Bay, visit: http://www.climate.weatheroffice.ec.gc.ca/climate_normals/index_e.html.)*

Intrepid Inlet

265 **Intrepid Inlet**, 14 miles NNE of Mould Bay, penetrates Prince Patrick Island for 31 miles to the north. The inlet is entered between Disappointment Point and an unnamed point 12 miles ENE, at the mouth of a braided river. **Disappointment Point** and the coast to the south are low. To the north, as far as **Snowpatch Point**, cliffs rise almost vertically from the water to 230 m in elevation.

266 **Caution**. — The coast south of Disappointment Point is bordered with **shoal water**.

267 The west side of Intrepid Inlet is much higher than the east side and the terrain less rugged than around Mould Bay. **Salmon Point** is the north entrance point of **Green Bay**, an indentation 5 miles long in the west side of the inlet. An island lies off the south shore of Green Bay. North of Salmon Point, the shore is broad; behind the shore hills rise to between 90 and 150 m.

268 On the east side of the inlet, between its east entrance point and **Cape Canning**, 6.5 miles NNW, the terrain decreases in elevation. Further north it rises to an elevation of 90 m toward the head of the inlet. An elevation of 186 m lies 9 miles NNE of Cape Canning, inland from **Hiccles Cove**.

269 **Caution**. — **Depths** in the inlet have been obtained by **spot soundings** through the ice. No dangers are apparent but caution should be exercised as the inlet **has not been fully sounded**.

270 **Wilkie Point** *(76°15'N, 117°18'W)* is the low, flat, reddish-coloured limestone extremity of a peninsula which rises 0.5 mile inland to 50 m; the point is at the junction of Crozier Channel, Kellett and Fitzwilliam Straits.

Fitzwilliam Strait

271 **Fitzwilliam Strait** trends 34 miles NE from the junction of Kellett Strait and Crozier Channel; it separates **Sproule Peninsula** and the adjacent NW part of Melville Island from the east side of Prince Patrick Island. Fitzwilliam Strait is entered from the south between Cape De Bray and Wilkie Point and from the north between Cape Scott and Giddie Point; it has an average width of 14 miles.

272 **Caution**. — **Depths** in Fitzwilliam Strait have been obtained by **spot soundings** through the ice and **shoal depths have not been examined**.

273 Fracturing of the consolidated **ice** cover usually occurs during the third week of August with the ice becoming solid again during the last week of September. In a cold summer, break-up of the ice cover may not occur at all.

274 **Caution**. — The greatest percentage of the ice cover in Fitzwilliam Strait is normally **multi-year ice**.

Fitzwilliam Strait — East Side

275 **Marie Bay** indents the coast of Melville Island south of Sproule Peninsula. The south coast of the bay is steep with cliffs in places. Low land lies around two river deltas 4 and 12 miles from the head of the bay. The north coast of Marie Bay, formed by Sproule Peninsula, is much lower with low cliffs near its inner end. **Marie Heights**, close north of the entrance, is flat-topped with steep sides rising over 150 m.

276 Canrobert Hills, on the south side of the bay, have bluish-grey rounded outlines; in contrast the country to the

north, on Sproule Peninsula, is a reddish colour where not covered with vegetation.

277 **Depths** in Marie Bay have been obtained by **spot soundings** through the ice *(1973)* and appear to be deep.

278 Between Marie Bay and Sandy Point, 14 miles north, the coast is low and cut by several streams. **Sandy Point** projects 1 mile north from the coast.

279 **Cape Scott** *(76°31'N, 114°41'W)*, 11 miles farther NE, is a wide, low finger-shaped delta. It is the north point of Sproule Peninsula and Melville Island. Cleverly Point *(previously described)* is 7.5 miles east of Cape Scott. A deltaic point, with an islet on its east side, lies midway between them. The coast in this section is low, rising very gradually inland.

280 **Caution**. — **Depths** of 16 and 18 m lie about 3 miles offshore midway between Sandy Point and Cape Scott and NW of Cleverly Point. The channel to the north is deep.

Fitzwilliam Strait — West Side

281 **Jameson Bay**, 10 miles NE of Wilkie Point, is 6.5 miles from mouth to head. The west side of the bay rises to 150 m; at the head, the land rises gently to hills with elevations of 46 m 4 miles inland. Several large braided streams enter the head of the bay.

282 **Brown Bluff** is the low deltaic point that forms the north entrance to Jameson Bay. **Snow Hill** rises to an elevation of 60 m close west. **The Redoubt**, close north of Snow Hill, is a **conspicuous** mesa-like circular **hill**, with vertical sides and a flat top, rising to an elevation of 96 m.

283 Between Brown Bluff and Giddie Point, the coast is a wide, flat, sandy beach backed by low rocky tableland. Large braided streams enter Fitzwilliam Strait over several deltas at **John Point**.

284 **Giddie Point** *(76°42'N, 115°53'W)*, the NW entrance point of Fitzwilliam Strait, is a low point formed by a delta.

Prince Patrick Island — East Coast

285 From Giddie Point to a position 38 miles NNE at Cape Ludlow Rich, the SE entrance to Ballantyne Strait, the east coast of Prince Patrick Island is low and muddy; the coast is crossed by numerous braided streams and backed by mesa-like hills with elevations of 70 m.

286 **Cape Hemphill**, 14 miles north of Giddie Point, is the low, flat extremity of a peninsula. This peninsula, with an elevation of 75 m, separates an unnamed inlet from **Moore Bay**, farther north.

287 **Caution**. — **Shoal depths** of 15 m lie 1 mile off Cape Hemphill. **Shoal water** appears to extend up to 2 miles offshore in Moore Bay. Further north, off Cape Ludlow Rich, **shoal depths** under 20 m extend 3 miles offshore.

288 **Cape Ludlow Rich** *(77°18'N, 115°21'W)* is the extremity of a low, flat, narrow neck of land projecting 2 miles east from the NE coast of Prince Patrick Island.

Chart 7951

Off-lying Islands

289 **Emerald Isle** *(76°48'N, 114°07'W)* lies 15 miles ESE of Cape Hemphill in the NE approach to Fitzwilliam Strait. The island rises gradually from low shores, with numerous large deltas, to a maximum elevation of 70 m near its west end. Emerald Isle has a prolific covering of arctic vegetation.

290 **Caution**. — **Shallow water** extends 2.5 miles offshore around the island and islets are reported off its west end. Further offshore, the island is surrounded by deep water.

291 **Fitzwilliam Owen Island**, 22 miles ESE of Cape Ludlow Rich in the SE approach to Ballantyne Strait, rises from low coasts to a flat dome with an elevation of 55 m.

292 **Caution**. — Fitzwilliam Owen Island is bordered with **shoals**.

293 **Eight Bears Island**, 3 miles east of Fitzwilliam Owen Island, has an elevation of 48 m. The south coast of the island is steep; its SW point is low and sandy.

Prince Patrick Island — West Coast

Chart 7952

294 The west coast of **Prince Patrick Island** is flat and seldom attains an elevation greater than 30 m; during winter months the land cannot be distinguished from the sea ice. The drying area between high and low water is several miles wide, particularly toward the south end. Numerous small islands border the coast.

295 **Caution**. — The west coast of Prince Patrick Island is bordered by **shallow water**. **Depths** west of Prince Patrick Island have been obtained by **spot soundings** through the ice and **shoal depths have not been examined**.

296 **Ice** from the Arctic Ocean, under the influence of wind and current, grounds off the west coast of Prince Patrick Island due to the gradual shoaling. **Pressure ridges**, with a maximum known depth of 46 m, have their outermost line between 10 and 12 miles offshore. A belt of shore-fast ice lies between these ridges and the land. During summer the thaw water from the land forms a lane along the entire coast. At the mouths of creeks and rivers, bays form far out into the ice but this open water does not reach the edge of the Arctic pack.

297 *(For more information on **ice conditions** visit: http://www.ice-glaces.ec.gc.ca.)*

298 **Lands End** *(76°22'N, 122°40'W)* is a group of small, low islands close offshore 17 miles NNE of Griffiths Point. Two offshore islands are 4 miles farther west and SW.

299 **Caution**. — Lands End is surrounded by **shoal water**.

300 **Houghton Head** is 4 miles NE of Lands End. Small islands lie close west of the head and an offshore island, with an elevation of 11 m, is 3 miles NE. **Hardinge Bay** is 6 miles farther ENE and has **Richards Point** at its north entrance. Several large braided streams flow into Hardinge Bay.

301 **Tullett Point** *(76°45'N, 121°10'W)*, 10.5 miles NNE of Richards Point, is the west extremity of the largest of a group of islands close off the coast. It is topped by a large knoll, 12 m in elevation. Numerous small islands are nearby and several small islands lie about 8 miles NE.

302 Between Tullett Point and the unnamed east entrance point of Satellite Bay, 70 miles farther NE, there is 18 m of water or more, close offshore.

303 From **Discovery Point** *(77°02'N, 120°00'W)*, 23 miles NE of Tullett Point, past **Cape Andreasen**, 26 miles farther NE, and onward east to M'Clintock Point, the coast has many braided streams and offshore islands.

304 **M'Clintock Point** *(77°23'N, 117°51'W)* is the extremity of a narrow peninsula projecting 2 miles NE across the mouth of a braided stream. The point itself is low and flat, but the land at the base of this peninsula is about 30 m in elevation; about 7 miles inland, it rises to 44 m.

305 Four islands, the highest with an elevation between 24 and 31 m, lie between 3 and 5 miles WNW of M'Clintock Point.

306 **Satellite Bay**, entered east of M'Clintock Point, is divided into two arms by a peninsula projecting NW from the head of the bay.

307 Several islets lie in Satellite Bay; the island 2 miles SW of the east entrance point has an elevation of 23 m; a second island 3.5 miles north of the same point rises to about 30 m and has a sand spit off its south side. A stone **cairn** is on the summit of the second island.

308 **Depths** across the entrance to the bay range from 49 to 221 m and deep water exists to within 2 miles of its head, where there are soundings of 97 to 117 m.

309 From Satellite Bay to **Cape Leopold M'Clintock**, 11.5 miles NE, the coast is low and flat; a peninsula 1 mile wide extends west from the coast about midway between these features.

310 **Caution**. — **Shallow water** extends up to 5 miles offshore along this stretch of coast.

Ballantyne Strait

Chart 7951

311 **Ballantyne Strait** leads between Prince Patrick Island, to the SW, and Mackenzie King and Brock Islands to the NE. Ballantyne Strait is entered from Hazen Strait, to the SE, between Cape Ludlow Rich and an unnamed point 38 miles ENE on Mackenzie King Island. From the Arctic Ocean, to the NW, the strait is entered between Cape Leopold M'Clintock, and Cape Murray *(77°57'N, 115°05'W)*, 28 miles NE, on Brock Island.

312 **Caution**. — In a normal year, Ballantyne Strait contains **consolidated multi-year ice** except for some breaks and leads during the first three weeks of September. *(For a detailed account of ice conditions in this area visit: http://www.ice-glaces.ec.gc.ca.)*

313 **Caution**. — **Depths** in Ballantyne Strait have been obtained by **spot soundings** through the ice and **shoal depths have not been examined**.

314 **Polynia Islands**, in the NW entrance to Ballantyne Strait, consist of two long narrow islands and several small islets. The SW island has an elevation of 26 m and is almost surrounded by sand bars and lagoons. The NE island has an elevation of 17 m and is surrounded by a less completely developed sand bar. Several islets and sand bars lie within 2 miles of the north and east sides of the NE island. A low island lies 8 miles SE of Polynia Islands.

315 **Ireland's Eye** *(77°51'N, 115°31'W)* is a low island lying in the north entrance of Ballantyne Strait, about halfway between Polynia Islands and Brock Island. Several low islands lie in the channel separating Polynia Islands from Brock Island.

Ballantyne Strait — SW Side

316 The coast of Prince Patrick Island between Cape Ludlow Rich and Cape Leopold M'Clintock *(both capes previously described)* forms the SW side of Ballantyne Strait.

317 **Caution**. — The coast is low and bordered with **shoal water**. Gravel ridges with elevations of 20 to 25 m appear as islets and are the only distinctive features.

318 **Cape Krabbé** *(77°30'N, 116°01'W)* is a slight projection, with an elevation of 12 m, on the north side of an unnamed bay.

Ballantyne Strait — NE Side

319 **Cape Beuchat** *(77°31'N, 113°12'W)* is a low delta composed of mud and sand projecting from the west coast of Mackenzie King Island. **Leffingwell Crags**, 15 miles NE of Cape Beuchat, are a group of sharp peaks and the most prominent features on Mackenzie King Island, reaching an

elevation of 107 m. The west coast of Mackenzie King Island is low with several deltas.

320 **McConnell Island** *(77°39'N, 113°18'W)*, close off the west coast of Mackenzie King Island, has an elevation of 14 m.

321 The unnamed strait separating Mackenzie King Island from Brock Island leads north from Ballantyne Strait to Wilkins Strait.

322 **Caution**. — **Shallow water** fronts the low, marshy, Mackenzie King Island side of the unnamed strait.

323 **Brock Island**, with a maximum elevation of 67 m, separates the Arctic Ocean entrances of Ballantyne and Wilkins Straits. The SW coast of Brock Island is marked by raised beaches.

324 **Caution**. — Numerous islets and **shoals** are off the SW coast of Brock Island. The north coast is lined with **ice pressure ridges** 15 to 25 m in height.

325 **Caution**. — A bank of **shallow water** with several islets and depths under 20 m extends up to 6 miles off the SW coast of Brock Island.

326 **Cape Murray**, the west extremity of Brock Island, is mostly a sand flat.

Wilkins Strait

327 **Wilkins Strait**, entered from the Arctic Ocean between the north extremity of Brock Island and Jenness Island, leads east between Borden and Mackenzie King Islands and Jenness Island to Prince Gustaf Adolf Sea.

328 **Caution**. — **Depths** in Wilkins Strait have been obtained by **spot soundings** through the ice.

329 **Caution**. — Except for some breaks and leads during the first three weeks of September, Wilkins Strait is usually covered by **consolidated multi-year ice**. *(For a detailed account of **ice conditions** in this area visit: http://www.ice-glaces.ec.gc.ca.)*

Wilkins Strait — South Side

330 The NW coast of Brock Island, low and traversed by several streams, extends 12 miles NE from Cape Murray to its north extremity, where an elevation of 23 m is found.

331 **Caution**. — A **shoal bank** with several islets and depths under 20 m extends 8 miles off the NW shore of Brock Island.

332 The NE coast of Brock Island, which is very indented, trends from its unnamed north extremity *(78°03'N, 114°20'W)* 10 miles SE to the entrance of the unnamed channel separating Brock Island from Mackenzie King Island. The land is light coloured and rises to 67 m, the highest on the coasts of this island.

333 The north shore of Mackenzie King Island, 45 miles west to east, is indented by several small bays and is generally very low, with numerous deltas projecting into the sea. Inland the land rises gently to elevations of 30 to 60 m. Several islets lie offshore.

334 **Caution**. — **Shoals** and **shoal water** border the west and central portions of the north shore of Mackenzie King Island. To the east, the north shore is steep-to.

Wilkins Strait — North Side

335 **Cape Mackay** is the west extremity of **Borden Island**.

336 **Jenness Island** *(78°17'N, 113°55'W)*, 8 miles west of Cape Mackay, is the outermost of a scattered group of small islands with elevations of about 12 m.

337 **Caution**. — The Jenness Island group is surrounded by **shoals**, **drying shoals** and islets extending 11 miles west of Cape Mackay.

338 East from Cape Mackay, the south coast of Borden Island is low. A broad peninsula, 58 m in elevation, midway along the south coast separates two large bays. The land around the west bay is dark, with braided streams entering the strait, while around **Piper Bay** and the remainder of the south shore the terrain is light coloured. **Oyster Creek** enters the east side of Piper Bay. The coast rises inland to an elevation of 140 m.

339 **Caution**. — **Shoal water** borders much of the south coast of Borden Island.

Borden Island — NW Side

Chart 7953

340 The NW coast of Borden Island between Cape Mackay *(78°20'N, 113°17'W)* and Cape Malloch, 40 miles NE, faces the Arctic Ocean. The coast, except in its central part, is an extensive alluvial plain, bordered by **ice pressure ridges** 12 to 18 m in elevation.

341 **Caution**. — **Shoals** and islets extend 4 to 5 miles offshore.

342 **Cape Malloch** *(78°46'N, 110°43'W)* is the north extremity of Borden Island and of the Parry Islands. Hills with elevations of 60 m rise 15 miles inland.

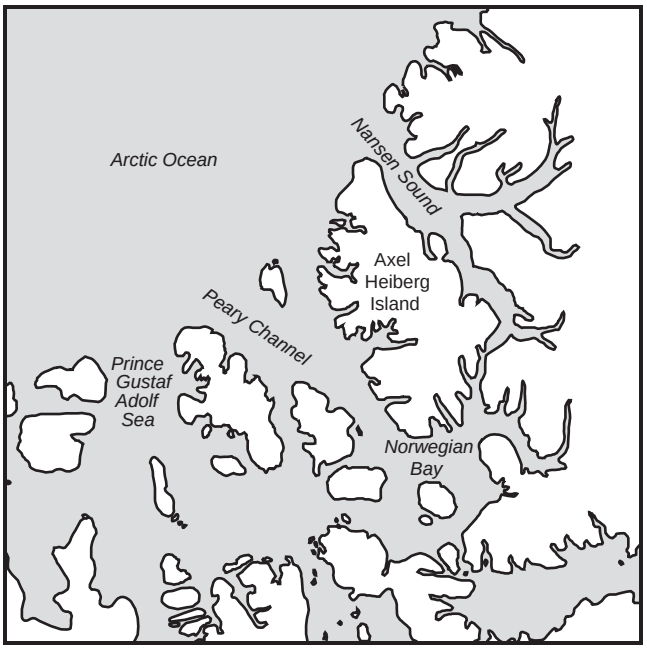
343 **Caution**. — Islets, **shoals** and a **shoal depth** of 14.6 m extend 4 miles north of Cape Malloch.

Borden Island — East Side

344 The east side of Borden Island, facing Prince Gustaf Adolf Sea, is low and irregular. It slopes evenly, 4 miles inland, to elevations over 60 m and is crossed by numerous streams. Some of the streams have braided channels and deltas. **DuVernet River** enters the sea 13 miles SE of Cape Malloch.

345 **Caution**. — The east side of Borden Island is bordered with islets and **shoals**.

Sverdrup Islands
Channels west of Axel Heiberg Island



General

Charts 7000, 7950, 7951, 7953

1 This chapter describes the waters adjacent to **Sverdrup Islands** *(79°00'N, 96°00'W)*. The Sverdrup Islands include Ellef Ringnes Island, Amund Ringnes Island, Cornwall Island and the west coast of Axel Heiberg Island.

2 *Northern Canada Vessel Traffic Services (NORDREG) Zone* is in effect in all waters described in this chapter. The primary objective of this system is to assist the Master in the safe and expeditious conduct of the vessel by promulgating information on ice conditions, giving advice on routes and providing icebreaker support where available and considered necessary.

3 Traffic clearance requests and reports required by this system shall be addressed to *NORDREG CANADA*. Requests and reports may be passed through any *Canadian Coast Guard Marine Communications and Traffic Services* centre free of charge. All times shall be given in *Co-ordinated Universal Time*.

4 *(For further information concerning this system consult Radio Aids to Marine Navigation, available at: http://www.ccg-gcc.gc.ca/eng/CCG/MCTS_Radio_Aids.)*

5 Because of severe **ice** conditions, surface navigation is almost non-existent in these areas except in a few isolated channels in the south part during late summer and early fall. Generally there is very little break-up before freeze-up resumes. Local conditions are described in the text. *(For more details on **ice** conditions see ARC 400 — General Information, Northern Canada, or visit: http://www.ice-glaces.ec.gc.ca.)*

6 **Caution**. — **Depths** in the area described in this chapter are based mainly on controlled **spot soundings** through the ice to 1982, partly on controlled surveys to 1982 and partly on **reconnaissance surveys** and **track soundings**. Most of the **inshore waters** of all the areas described in this chapter **have not been sounded**. *(Some charts covering the Sverdrup Islands have Source Classification Diagrams.)*

7 **Caution**. — Many features in the Sverdrup Islands and the north portion of the west part of the Queen Elizabeth Islands are named "fiords" although the physical configuration of the adjacent land may not correspond with the generally accepted definition of a fiord. Consequently

mariners **should not assume** that deep, obstruction-free water will be found in water features named fiords but not possessing the corresponding physical characteristics. The wide spacing of soundings in many such areas can also contribute to the illusion of deep obstruction-free waters.

8 **Oil and gas exploration** was conducted in the south part of Sverdrup Islands for a number of years.

9 **Airstrips** operated *(1985)* for oil and gas exploration activities in the area covered by this chapter are at King Christian Island *(77°46'N, 101°02'W)* and Malloch Dome *(78°13'N, 101°03'W)*. These airstrips are now abandoned.

10 *(For general **weather** conditions in this area, see Chapter 4 of Sailing Directions booklet ARC 400 — General Information, Northern Canada. For present and forecast weather conditions, visit: http://www.weatheroffice.gc.ca/canada_e.html.)*

11 *(For maps relating to general weather patterns, visit: http://atlas.nrcan.gc.ca/site/index.html.)*

12 The **magnetic compass** is useless in the area described in this chapter.

Hendriksen Strait

Chart 7950

13 **Hendriksen Strait** *(77°50'N, 96°00'W)* separates Cornwall Island from the south side of Amund Ringnes Island and leads west from Norwegian Bay. The strait is entered from the east between McLeod Head *(77°47'N, 95°00'W)* and Cape Ludwig, 10 miles NNW, and from the west between an unnamed island off the west extremity of Cornwall Island and the unnamed SW extremity of Amund Ringnes Island.

14 The solid **ice** cover in Hendriksen Strait normally fractures during the second week of August and consolidates in the first week of October. Ice conditions during the summer melt season can vary from mainly open water to only a few small openings in the ice cover.

15 *(For more details on **ice** conditions in this area visit: http://www.ice-glaces.ec.gc.ca.)*

16 **Caution**. — **Depths** in Hendriksen Strait have been obtained by **spot soundings** through the ice and **shoal depths have not been examined**. Incomplete and approximate depth contours exist in the west end, and reported **shallow water** is in the centre of the strait.

Hendriksen Strait — South Shore

17 The north coast of Cornwall Island, from its west end to McLeod Head, is very low; it is composed of sand, gravel and mud, and is crossed by numerous streams. This low coastal plain extends about 3 miles inland, then rises to hills attaining elevations of about 120 m.

18 Two low islands are off the west side of the bay west of McLeod Head.

19 At **McLeod Head** *(77°47'N, 95°00'W)*, the coast changes abruptly from low-lying to bold vertical cliffs. A **cairn** was erected on McLeod Head by the Crocker Land Expedition. **Mount Nicolay**, 2 miles ESE of McLeod Head, attains an elevation over 300 m. About 7 miles east of Mount Nicolay the low coastal plain resumes and continues to the east end of the island.

20 **Jaeger River**, 13 miles east of Mount Nicolay, crosses the low coastal plain and forms a wide delta.

21 **Northeast Point** *(77°44'N, 93°15'W)* is the low flat NE extremity of Cornwall Island.

22 **Caution**. — A **drying spit** extends north from Northeast Point.

Hendriksen Strait — North Shore

23 **Cape Ludwig** *(77°57'N, 95°08'W)* is a low point with a small group of hills, about 4 miles NW, rising to an elevation of 133 m. West of these hills the south coast of Amund Ringnes Island comprises a very low, barren, sandy plain cut by numerous streams.

24 **Caution**. — The south coast of Amund Ringnes Island is bordered by low islets and **shallow water**. An irregular bay indents the SW part of the coast with more islets offshore and farther SW an island and **shoal water** lie 1 mile offshore.

Massey Sound

Charts 7950, 7953

25 **Massey Sound** *(78°30'N, 94°00'W)*, between Axel Heiberg and Amund Ringnes Islands, connects the NW part of Norwegian Bay with the south ends of Peary Channel and Sverdrup Channel. The sound is entered from the south between Cape Southwest and Cape Ludwig, 40 miles WSW. Its north entrance, nearly 60 miles NNW, is between Cape Levvel and Cape Sverre, 50 miles west.

26 **Caution**. — **Depths** in Massey Sound have been obtained by **spot soundings** through the ice and are too widely spaced to provide adequate depth contours. An islet, position approximate and reported in 1973, lies 3 miles north of Haig-Thomas Island on the west side of the sound.

27 The **tidal range** of large tides at Cape Southwest, on the east side of the sound, is 1 m.

28 The consolidated **ice** cover normally begins to fracture near the south entrance around mid August and in the north end by the last week of August. Reconsolidation of the ice cover usually occurs by the last week of September.

29 **Caution**. — Massey Sound contains a high percentage of **multi-year ice** throughout the year.

30 *(For more details on **ice** conditions in this area visit: http://www.ice-glaces.ec.gc.ca.)*

Chart 7953

Massey Sound — East Side

31 **Cape Southwest** *(78°12'N, 92°03'W)*, the SW point of Axel Heiberg Island, is a prominent, steep-sided, level-topped bluff. The cape has an elevation of 530 m extending 4 miles NE, dropping gradually to the surrounding lowland.

32 Between Cape Southwest and Cape Maundy Thursday, 20 miles NNW, the coast is a series of hills with elevations over 305 m with low sections of coast between them. The edge of a large ice field is about 12 miles inland, terminating in broad lobes at elevations about 600 m.

33 **The Two Craters**, 6 miles NNW of Cape Southwest, are two prominent conical formations with an elevation of 390 m. Several streams discharge into a small bay close NW of The Two Craters.

34 **Cape Maundy Thursday** *(78°28'N, 92°59'W)*, a **conspicuous headland** capped with a small ice field, rises almost sheer to an elevation of 845 m. It has been sighted at a distance of 60 miles.

35 **Good Friday Bay**, penetrating 18 miles east, is entered between Cape Maundy Thursday and an unnamed low point 7 miles NNW. The head of the bay is cliffy. Elevations of 450 m occur close to shore at the east end of the north side of the bay. The main feature at the head of the bay is a glacial lobe, 3 miles wide, filling the valley within 0.5 mile of tide water. Several other lobes descend from the west slope of the ice field to within 3 miles of Good Friday Bay but terminate at an elevation of 300 m.

36 Large outwash deposits occur around the head of the bay, particularly on its north side. The central part of the south side and the west part of the north shore are low. Several deltas mark streams entering the bay. Two sand spits project into the bay from the south shore.

37 **Caution**. — A **shoal patch**, with a depth of 10 m, is off the end of the sand spit midway along the south shore of Good Friday Bay.

38 From the low, sandy, north entrance point of Good Friday Bay to Skrugar Point, 13 miles NNW, the coast is steep with elevations between 250 and 300 m. A small unnamed bay with low shores and a braided stream at its head is 5 miles north of Good Friday Bay.

39 **Skrugar Point** *(78°46'N, 93°50'W)*, the south entrance point of Sand Bay, rises steeply to an elevation of 290 m. **Sand Bay** trends 10 miles SE into Axel Heiberg Island. The land is low on the north side of the bay but the south side has cliffs in places. To the north of the bay a small ice field is on one of the remnants of a tableland over 300 m in elevation.

40 **Cape Levvel** *(78°59'N, 94°20'W)*, the north entrance to Massey Sound, is a headland over 120 m in elevation with steep cliffs.

Charts 7950, 7953

Massey Sound — West Side

41 **Amund Ringnes Island** *(78°00'N, 96°00'W)* lies on the west side of Massey Sound. It is characterised by low land lying between the coast and crumbling cliffs. The land rises to an uneven interior plateau seldom over 215 m in elevation.

42 From Cape Ludwig, for 10 miles NNE then 10 miles NNW to an unnamed bay, the low coast of Amund Ringnes Island is generally under 30 m in elevation. Several large braided streams discharge into the unnamed bay, extending the shore eastward with alluvial deposits. The delta of the **Structural River** forms the north entrance to the bay.

43 **Haig-Thomas Island** *(78°15'N, 94°28'W)*, 10 miles east of the unnamed bay, is generally low-lying but attains a peak of 89 m in its central part. An islet, position approximate and reported in 1973, lies 3 miles to the north.

44 **Caution**. — Two rocky islets are on a **shoal bank** extending from the west side of Haig-Thomas Island to the coast to the SW. Elsewhere the unnamed bay is deep.

Chart 7953

45 **Geologist Bay**, 25 miles NW of Haig-Thomas Island, penetrates 4 miles SW into the Amund Ringnes Island coast. Several large braided streams enter the head of the bay and three small islands lie about 1 mile off its east side.

46 **Caution**. — **Depths** in Geologist Bay are **unknown**.

47 From Geologist Bay the coast trends 28 miles WNW to **Cape Sverre**, the north extremity of Amund Ringnes Island. **Stratigrapher River** enters the sound 7 miles WNW of Geologist Bay.

Hassel Sound

Charts 7951, 7953

48 **Hassel Sound**, between Amund Ringnes Island and Ellef Ringnes Island, connects the unnamed sea area north of Bathurst Island with Peary Channel, 50 miles north. The sound is entered from the south between the unnamed SW extremity of Amund Ringnes Island and Cape Nathorst *(77°47'N, 99°53'W)*, 35 miles west. Hassel Sound is entered from the north between Cape Sverre and Cape Cairo, 25 miles west.

49 The coasts on both sides of Hassel Sound are low and characterized by immense, flat outwash plains.

50 **Caution**. — Most **depths** in Hassel Sound have been obtained by **spot soundings** through the ice and **shoal depths have not been examined**. A few **soundings** at the south end, off the coast of Ellef Ringnes Island, have been obtained by **reconnaissance surveys** and **track soundings**.

51 **Caution**. — **Shoal water** extends as far as 11 miles west from the SW extremity of Amund Ringnes Island.

52 **Linckens Island** *(77°46'N, 97°45'W)* is flat and has an elevation not very much above sea level; it is only about 30 m in diameter. A plugged exploratory oil well-head is on the island.

53 **Caution**. — Linckens Island is surrounded by a large bank of **shoal water**, part of which **dries**.

54 The consolidated **ice** cover normally begins to fracture in the south part of the sound during the second week of August and in all the more northern areas by the last week of the month. The ice usually consolidates again in the north part of the sound during the third week of September and in the remaining areas by mid October.

55 **Caution**. — Hassel Sound contains mainly **multi-year ice** with some clearing in the south end during some years, usually the last week of August and first week of September.

56 Some years the ice cover in Hassel Sound will remain solid for the whole melt season.

57 *(For more details concerning **ice** conditions in this area visit: http://www.ice-glaces.ec.gc.ca.)*

Chart 7951

Hassel Sound — East Side

58 The entire east side of Hassel Sound is low and a large outwash plain is the principal feature of its central part.

59 **Caution**. — Extensive **drying shoals** and **shoal water** off the unnamed SE entrance point of Hassel Sound *(77°48'N, 97°10'W)* extends 6 miles NW.

60 **Fog Bay**, 6 miles north of the entrance point, has two large streams entering its head. Fog Bay is separated from Temperance Bay by **Slime Peninsula**, less than 30 m in elevation.

61 **Temperance Bay** *(78°10'N, 97°30'W)* penetrates Amund Ringnes Island for 12 miles. **Temperance River** and an unnamed stream enter the head of the bay.

62 **Caution**. — There is a **shoal depth** of 24 metres 3 miles NW of Slime Peninsula in the approaches to Temperance Bay. The head of Temperance Bay has **shoals** and islets just offshore.

Chart 7953

63 NE of Temperance Bay *(78°14'N, 98°00'W)* the land rises in a series of steep-faced but low escarpments to an elevation of 60 m.

64 For 15 miles north from Temperance Bay, the coast is a great outwash plain. Several large streams enter Hassel Sound through braided channels. The remainder of this side, although low, rises gradually to higher terrain which terminates at Cape Sverre *(previously mentioned)*.

65 **Caution**. — **Shoal water** extends about 4 miles west of Cape Sverre. A small island, with an elevation of 18 m, lies within the shoal water.

Chart 7951

Hassel Sound — West Side

66 **Meteorologist Peninsula**, the south part of **Ellef Ringnes Island**, is composed mainly of large outwash plains with streams and deltas extending the low shores seaward; the peninsula is notable for its raised beach lines.

67 Inland there are a few steep-faced hills. **Hoodoo Dome** *(78°06'N, 99°48'W)* attains an elevation of 175 m.

68 **Cape Nathorst** *(77°47'N, 99°53'W)* is a large delta and forms the south extremity of Ellef Ringnes Island.

69 **Otter River** *(78°04'N, 98°54'W)*, **Hoodoo River** *(78°17'N, 99°32'W)* and **Divergent River** *(78°24'N, 99°45'W)* have deltas that form unnamed points.

70 **Fisher Island** lies close offshore 2 miles north of the mouth of Divergent River.

Chart 7953

71 **Cape Bagdad** *(78°35'N, 99°30'W)* rises steeply to an elevation of 171 m.

72 **Helicopter Bay**, 7 miles farther NW, is narrow and penetrates the coast for 3 miles; **Contour River** enters the head of the bay. Close south of the bay the coast is high and rocky, and backed by cliffs and ridges rising from 90 to 120 m.

73 Between Helicopter Bay and **Cape Cairo**, 10 miles NW, the land slopes gently seaward from the foot of a NE-facing escarpment 3 miles inland.

Maclean Strait

Chart 7951

74 **Maclean Strait** *(77°30'N, 103°30'W)* separates the Findlay Group *(described in Chapter 11)*, to the west, from the SW coast of Ellef Ringnes Island and the nearby large offshore islands, to the east.

75 Maclean Strait is entered from the south between the SW point of Paterson Island, in the Findlay Group, and Bardin Point *(77°40'N, 101°45'W)*, 44 miles NE. The north entrance of the strait lies between the north extremity of Lougheed Island and Mocklin Point *(78°16'N, 104°26'W)*, on Noice Peninsula.

76 **Caution**. — Most **depths** in Maclean Strait have been obtained by **spot soundings** through the ice. These indicate deep water throughout. A few **soundings** across the strait and off Ellef Ringnes Island have been obtained by **reconnaissance surveys** and **track soundings**.

77 **Ice** in Maclean Strait normally begins to break-up in the SE entrance about mid August and progresses to all areas by the end of the month. Consolidation of the ice cover usually begins about the first of October and is complete by the middle of the month.

78 **Caution**. — **Multi-year ice** predominates in Maclean Strait throughout the year.

79 *(For more details concerning **ice** conditions in this area visit: http://www.ice-glaces.ec.gc.ca.)*

King Christian Island

80 The highest point of **King Christian Island** *(77°50'N, 102°00'W)*, a round area of light coloured rock roughly in the centre of the island, is 165 m in elevation. Because of the low east part of the island, when approaching the island from SE between Cape Abernethy and Bardin Point, the high point appears to lie nearer its east end. The land slopes gradually west from the high point, becoming steeper near the west end of the island.

81 An abandoned and eroded *(2010)* airstrip *(77°46'N, 101°02'W)* is near the east end of King Christian Island.

82 Midway between **Bardin Point** *(77°40'N, 101°45'W)* and **Sutherland Point**, 9 miles NNW, a large delta forms a low, rounded point. The coast rises gently to elevations of 60 m 2 or 3 miles inland.

83 Eight miles north of Sutherland Point, the coast is low and trends east, facing Danish Strait. The coast is backed by a hinterland of low, rolling hills.

84 **Caution**. — **Shoals**, formed at the mouths of the numerous streams on this side of the island, can extend over 1 mile offshore.

85 Between **Scallon Point**, a delta at the north extremity of the island, and **Cape Abernethy**, the low east extremity 15 miles SE, the NE coast of King Christian Island is low-lying and backed by low, rolling hills. The coast is crossed by numerous streams ending at small deltas.

86 Natural gas has been discovered on King Christian Island.

Danish Strait

87 **Danish Strait** is separated from Maclean Strait by King Christian Island. It is entered from the south between Cape Abernethy and Cape Allison and from the north between the unnamed NW extremity of King Christian Island and Cape Thorstein on Thor Island.

88 **Oil and gas exploration** has taken place throughout the strait.

89 **Caution**. — **Depths** in the narrowest part of Danish Strait, between King Christian Island and Meteorologist Peninsula, are from r**econnaissance surveys** and **track soundings**. In the east and west entrances and in Kristoffer Bay **depths** are from **spot soundings** through the ice.

90 The consolidated **ice** cover in Danish Strait normally begins to fracture during the second week of August at its south entrance but is not completely fractured throughout the whole strait until the end of the month. Freeze-up usually begins during the first half of September with consolidation of the ice cover complete by mid October.

91 **Caution**. — The ice type found in Danish Strait is dependent upon the extent of break-up during the previous year. In cold years when there is a minimum amount of break-up, **multi-year ice** will prevail the following season. However, when break-up is early and the ice drifts out of the strait, open water will be extensive resulting in mainly first-year ice prevailing the following year.

92 *(For more details of **ice** conditions in this area visit: http://www.ice-glaces.ec.gc.ca.)*

Danish Strait — West Side

93 *(The west, or King Christian Island, side of Danish Strait is previously described.)*

Danish Strait — East Side

94 **Cape Allison** *(77°49'N, 100°14'W)*, on Meteorologist Peninsula, is low and flat. Braided streams enter the east side of Danish Strait through wide, flat, valleys interspersed by hills rising to 40 m in the south and 60 to 90 m in the north.

95 **Caution**. — **Shallow water** extends over 1 mile into Danish Strait from the west shore of Meteorologist Peninsula.

96 **Jackson Bay** is a small indentation 17 miles NW of Cape Allison. **Angle River** and several other small streams flow into the head of the bay.

97 **Caution**. — **Shoal depths** lie up to 2.5 miles offshore near Jackson Bay.

98 **Kristoffer Bay** is entered between Jackson Bay and Cape Thorstein, 30 miles west. At the head of the bay the land slopes up gently as an immense outwash plain. Several large rivers with braided channels discharge across the plain; **Transection River** is the only named one.

99 An unnamed island separates Kristoffer Bay into SE and NW parts. **Elve Point**, the south extremity of the island, has an elevation of about 30 m.

100 **Malloch Dome** *(78°12'N, 101°15'W)*, a **conspicuous hill** over 120 m in elevation, forms a peninsula that separates the SE part of Kristoffer bay into two smaller bays.

101 An abandoned airstrip *(78°13'N, 101°03'W)* is at Malloch Dome.

102 **Caution**. — **Shoal depths** under 20 m extend from the SW extremity of the unnamed island across the NW part of Kristoffer Bay.

103 **Thor Island**, with an elevation of 99 m near its north end, separates Kristoffer Bay from Dome Bay; the bays are connected by a narrow channel.

104 **Dome Bay** is entered between **Cape Thorstein**, on Thor Island, and the SE extremity of Noice Peninsula, 11 miles NW. The bay is 15 miles long; at its head several braided streams flow through a large outwash plain. **Isachsen Dome** *(78°28'N, 102°10'W)*, with an elevation of 267 m, is 10 miles NE of the head of the bay.

105 The shore of **Noice Peninsula**, at the NW side of Dome Bay, is a flat, muddy plain crossed by numerous streams. The plain is backed by low hills with elevations of 150 m 5 miles inland.

106 **Caution**. — **Depths** in Dome Bay are from sparse **spot soundings** through the ice. These indicate depths exceeding 100 m in the middle of the bay.

Prince Gustaf Adolf Sea

Charts 7951, 7953

107 **Prince Gustaf Adolf Sea** *(78°30'N, 107°00'W)* lies between the NW side of Ellef Ringnes Island and the northern Parry Islands *(described in Chapter 11)*. The sea is entered from the south between Mocklin Point, on Noice Peninsula, and the north and NE extremities of Lougheed and Mackenzie King Islands. The north entrance lies between Cape Isachsen and Cape Malloch, 68 miles SW.

108 **Gustaf Adolf Trough** is a deep trough bordering the west coast of Ellef Ringnes Island.

109 **Caution**. — **Depths** in Prince Gustaf Adolf Sea have been obtained by **spot soundings** through the ice. These indicate deep water throughout the area.

110 The **tidal range** of large tides at Isachsen, on the east side of Prince Gustaf Adolf Sea, is 0.4 m.

111 The consolidated **ice** cover in Prince Gustaf Adolf Sea normally fractures by the end of August; freeze-up and consolidation are complete by the second week of October.

112 **Caution**. — Very close **multi-year ice** concentrations prevail in Prince Gustaf Adolf Sea at the height of the navigation season.

113 An open-water lead to seaward of the north entrance to Prince Gustaf Adolf Sea forms intermittently from April onward.

114 *(For more details of **ice** conditions in this area visit: http://www.ice-glaces.ec.gc.ca.)*

Chart 7953

Prince Gustaf Adolf Sea — East Side

115 Between Noice Peninsula and Cape Isachsen, 65 miles NNW, the NW coast of Ellef Ringnes Island is indented by several large bays.

116 From **Mocklin Point** *(78°16'N, 104°26'W)*, the coast trends 20 miles NNW to Slave Point. The coast is a flat muddy plain, rising inland to hills with elevations about 200 m.

117 **Deer Bay** is entered between **Slave Point** *(78°32'N, 104°45'W)*, the NW extremity of Noice Peninsula, and Reindeer Cape, 13 miles north. Deer Bay penetrates east into Ellef Ringnes Island for 10 miles, then splits into three smaller bays.

118 The unnamed south bay is bounded on the south by Noice Peninsula and on the north by **Horizon Hill**, a flat-topped peninsula with an elevation of 213 m, terminating in **Hazy Cape**. Braided streams enter the south and east sides of the south bay; small islands lie close offshore near its head.

119 **Station Bay**, the middle of the three bays, lies between Horizon Hill to the south and **Gabbro Peninsula**, to the north. Gabbro Peninsula rises to an elevation of 236 m.

120 The north side of Station Bay divides into three smaller bays. **Polar Bear Bay**, the outermost of the smaller bays, is entered between an unnamed point on the SE side of Gabbro Peninsula and **Tor Point** *(not named on the chart)*, 3 miles east, at the south extremity of **Tor Peninsula**. Polar Bear Bay penetrates 3.5 miles NNE; the inner part of the bay is divided into two arms by a steep bluff rising to 210 m. **Isachsen River** flows into **Bowl Cove**, the east arm of Polar Bear Bay. The land, on both sides of the inner part of Polar Bear Bay, has an elevation of 150 m.

121 **Parachute Bay** *(not named on the chart)*, the middle small bay on the north side of Station Bay, is entered between Tor Point and **Sock Point** *(not named on the chart)*, the south extremity of the steep sided, narrow **Sock Peninsula** *(not named on the chart)*.

122 **Louise Bay**, the innermost of the three bays on the north side of Station Bay, is entered between Sock Point and **The Mouse** *(78°45'N, 103°22'W, not named on the chart)*, a hill with an elevation of about 60 m at the SE entrance point. The east side and head of Louise Bay are low with several braided streams ending in deltas. The west side is the high, steep Sock Peninsula.

123 *Environment Canada* operates an automated weather station at **Isachsen**, on the NW side of Louise Bay. **Buildings** of an abandoned manned weather station here are **conspicuous** *(2007)*. An abandoned airstrip is close by.

124 Weather data from Isachsen automated weather station can be viewed at: *http://www.climate.weatheroffice.ec.gc.ca/climateData/canada_e.html*.

125 **Caution**. — The weather station at Isachsen is **unmanned**. There are no facilities or services here.

126 The north bay, of the three inner bays of Deer Bay, is bordered to the east by Gabbro Peninsula and to the west by **Reindeer Peninsula**. This peninsula extends 15 miles SSW from **Isachsen Peninsula** and terminates in **Reindeer Cape** *(78°47'N, 104°58'W)*. A ridge of hills runs down the length of Reindeer Peninsula, and toward its extremity, a **conspicuous hill**, 130 m in elevation, can be mistaken for an island.

127 *Isachsen (Index No. 6910)* is a secondary port in *Canadian Tide and Current Tables, Volume 4*.

128 **Caution**. — **Depths** are from sparse **spot soundings** through the ice. These indicate the outer part of Deer Bay to be deep. In the central parts of the north and south inner bays, there are depths over 100 m. Station Bay but the three bays on its north shore are **not surveyed**.

129 **Hospital Bay** penetrates 9 miles NE into Isachsen Peninsula close north of Deer Bay. Hospital Bay is entered between Reindeer Cape and **Cape Germain**, 14 miles NNW.

130 **Cape Isachsen**, 19 miles north of Cape Germain, is the NW extremity of Ellef Ringnes Island. The cape and the adjoining coasts, south to Cape Germain and east to the north entrance point of Peary Channel, are very low and flat and cut by numerous streams. A range of low hills, with an elevation of about 60 m, extends SE from the cape, rising gradually inland.

131 **Caution**. — The north and west coasts of Isachsen Peninsula are bordered by **drying shoals** and islets extending a considerable distance offshore. Consequently it is difficult to determine where the shoreline commences. **Drying shoals**, islets and **shoal water** extend 8 miles north of Cape Isachsen.

Peary Channel

132 **Peary Channel** lies between the NE Coast of Ellef Ringnes Island and the west side of Meighen Island. The channel is entered from Massey Sound, to the SE, between Departure Point, the south extremity of Meighen Island, and Cape Sverre, 44 miles south. The channel may also be entered from the north entrance of Hassel Sound between Cape Sverre and Cape Cairo, 25 miles west. The north entrance of Peary Channel is between Andersen Point, on Meighen Island, and an unnamed point *(79°22'N, 104°00'W)* on Ellef Ringnes Island.

133 **Caution**. — **Depths** in Peary Channel have been obtained by **spot soundings** through the ice. There are no known shoals.

134 **Ice** in Peary Channel is consolidated for much of the year except for some breaks normally occurring between the end of August and the third week of September.

135 **Caution**. — **Multi-year ice** predominates in Peary Channel, year-round.

136 A large open-water lead forms NW of the channel intermittently from April onward. The usual position for this lead stretches from 2.7 miles north of Cape Isachsen to 13.5 miles north of Meighen Island. Some shore leads in Peary Channel are open in July.

137 *(For more details concerning **ice** conditions in this area visit: http://www.ice-glaces.ec.gc.ca.)*

Peary Channel — West Side

138 **Haakon Fiord** *(78°50'N, 100°45'W)* is a square-shaped indentation in the NE coast of Ellef Ringnes Island. The fiord has a wide, flat, low-lying plain at its head formed by the **Haakon River** in the centre and **Dumbbells River** at the south extremity of the plain. A prominent hill, close east of Dumbbells River mouth, rises steeply to an elevation of 222 m. The west shore of Haakon Fiord rises gradually to elevations of 90 m. **Dumbbells Dome**, about 10 miles SW of the head of Haakon Fiord, attains an elevation of about 220 m.

139 The coast northwest of Haakon Fiord is fairly steep for 4 miles, rising to 120 m, then falling off to **Gypsum Point**, the end of a low peninsula forming the east side of a small bay. **Trio Island**, elevation about 60 m, lies in the entrance to the small bay. **Agate River**, 2 miles NW of Trio Island, is one of several rivers discharging along this low coast. **Cosens Island** is low and lies close offshore, 4 miles NW of Gypsum Point.

140 **Christopher Peninsula** separates Haakon Fiord from Louise Fiord. The interior of the peninsula rises to elevations of 180 m; the peninsula slopes steeply to Louise Fiord.

141 **Louise Fiord** indents the coast of Ellef Ringnes Island for 17 miles to the south between Christopher Peninsula on the east and Isachsen Peninsula on the west. The fiord has steep shores on both sides rising to elevations of 180 m. **Crochet River** enters Louise Fiord 2.5 miles SW of the east entrance point. Several streams flow into the low-lying east side of the head of the fiord. On the west shore **Brant River** enters 3 miles SE of **Contact River**, the west entrance point of the fiord. **Crab Claw Hills**, close south of Brant River, attain elevations of 150 m.

142 **Caution**. — Between the entrance to Louise Fiord and the north extremity of Isachsen Peninsula, 22 miles NW, a number of small islands and **drying shoals** are scattered along the coast but there is deep water close seaward of them.

Peary Channel — East Side

143 **Meighen Island**, almost barren, forms the east side of Peary Channel. The island is dominated by the smooth

rounded **Meighen Ice Cap** which rises to 268 m in its east central and highest part.

144 **Departure Point**, the extremity of a low flat peninsula 3 miles long, is the south point of Meighen Island. Departure Point is marked by a **cairn**. The coast trends 8 miles NW to **Bjare Bay**, a large bight indenting the coast for 5 miles. The bay is entered between **Akiuk Point** and **Andersen Point**, 11.5 miles farther NW. A large **conspicuous cairn** is on Andersen Point. Around the head of the bay, the coast is prominent with elevations exceeding 90 m; on the west side of the bay the coast is low.

145 From Andersen Point to **Stefansson Point**, the north extremity of Meighen Island, the coast is low but is backed in places by low cliffs. **Krueger River** and **Decca River** drain from the Meighen Ice Cap through this section of the coast.

146 A small **unnamed island** lies close offshore 11 miles north of Andersen Point.

Axel Heiberg Island — West Side

147 The west side of **Axel Heiberg Island** is deeply indented by Strand Bay, entered between Cape Levvel *(previously described)* and an unnamed point 18 miles NNW.

Strand Bay

148 **Strand Bay** extends 25 miles NE before dividing into two fiords and a short bay. Along the north side of Strand Bay, three smaller fiords penetrate north into Axel Heiberg Island. **Sounding Island** lies in the middle of Strand Bay.

149 Numerous streams cut the low south coast of Strand Bay from Cape Levvel to an unnamed cape 15 miles NE. **Vantage Hill** rises to about 300 m behind the unnamed cape.

150 **Duck Bay**, 5 miles farther east, is a square-shaped bay about 2 miles wide. Several streams empty into the head of the bay.

151 **Strand Fiord** is entered between the east entrance point of Duck Bay and the SW extremity of Kanguk Peninsula, 5 miles north. The fiord penetrates 27 miles ENE; the south side, for 7 miles inside the entrance, is low and cut with several streams. **Amarok River**, a braided stream draining the ice fields to the SE, empties into the fiord about 3 miles east of its south entrance. The remainder of the south side of the fiord rises to elevations of 600 to 900 m and is deeply ravined.

152 Two large braided streams, draining extensive ice fields to the east, discharge through wide valleys into the head of Strand Fiord.

153 The land north of Strand Fiord, though not as steep as the south side, rises from 150 to 460 m. **Hidden River** flows into the north side of the fiord, near the head, draining **Hidden Icefield** to the east.

154 **Kanguk Peninsula**, separating Strand Fiord from Expedition Fiord to the north, is about 20 miles long. It has sharp ridges, rising centrally to elevations over 460 m.

155 **Expedition Fiord** is entered between the NW extremity of Kanguk Peninsula and an unnamed point 4 miles north. This fiord penetrates 8 miles east, then 9 miles ENE to its head. **Expedition River** empties through a delta at the head of the fiord, draining **Thompson Glacier** 7 miles to the NE. **White Glacier** *(not named on the chart)* terminates at the foot of Thompson Glacier. A lobe of the **Crusoe Glacier** *(not named on the chart)* extends to within 0.5 mile of the head of Expedition Fiord.

156 **Colour Peak**, on the north side of the fiord near its head, is a strikingly colourful geological formation, rising to 450 m.

157 The shores of Expedition Fiord are, in general, high rock walls formed by pyramidal peaks, former nunataks and sharp-crested ridges with elevations of 300 to 450 m. **Index Peninsula** extends 2 miles NW from the south shore and has an islet close off its extremity. Five islands, some of which are more than 120 m in elevation, are scattered in mid-channel. **Erratics Island** is the eastern island.

158 **Iceberg Bay**, north of and adjacent to Expedition Fiord, is 6 miles long. Its shores reach elevations of 450 to 760 m. **Iceberg Glacier** is at the head of the bay; some well-weathered icebergs are at the terminus of the glacier.

159 **Agate Fiord**, 6 miles long, is close west of Iceberg Bay; they share an unnamed entrance point. The high sides of this fiord rise to 760 m on the east and 450 m on the west. Braided streams flow to the sea through a wide valley at the head of Agate Fiord.

160 **Triangle Peninsula** separates Agate Fiord from East Fiord. The peninsula is steep-walled and topped by a sharp saw-toothed ridge with an elevation of 450 m. The peninsula is less steep on its west side.

161 **East Fiord**, entered 5.5 miles SW of Agate Fiord, penetrates 7 miles north. The fiord has steep sides rising over 300 m and a large braided stream enters the head. Three miles north, the land rises steeply to an ice field with an elevation over 900 m.

162 The south point of an unnamed peninsula, SW of the entrance to East Fiord, forms the east entrance point of **South Fiord**. The unnamed peninsula rises to an elevation of 450 m. South Fiord, a wide bay penetrating 10 miles NE, has low shores cut by several braided streams. At its head the land rises steeply to **South Fiord Dome**, with an elevation of 466 m; the dome is backed by an ice cap rising over 1,200 m. Several islands lie in the entrance to the fiord; the largest, with an elevation of 137 m, lies 5 miles ESE of the west entrance point. The west entrance point of South Fiord is also the north entrance point of Strand Bay.

163 The coast between South and Middle Fiords is generally low with lines of raised beaches extending 0.5 mile inland.

Sverdrup Channel

164 **Sverdrup Channel** separates Axel Heiberg Island from Meighen Island. The channel is entered from the south between the unnamed point on Axel Heiberg Island at 79°25'N, 95°46'W and Departure Point, 37 miles WNW, the south extremity of Meighen Island. The north entrance, from the Arctic Ocean, lies between Bad Weather Cape and Noice Point, 25 miles west.

165 The east side of the channel, between Middle Fiord and Bad Weather Cape, is very rugged with elevations of 600 m being common; inland, the **Princess Margaret Range** attains elevations of 1,800 m.

166 The west side of the channel, between the south tip of Meighen Island and Perley Island, 30 miles north, is low.

167 **Caution**. — **Depths** in Sverdrup Channel are from **spot soundings** through the ice and **shoal depths have not been examined**. A sounding with a depth of 192 m, brown clay bottom, has been obtained 6 miles SW of Bad Weather Cape.

168 **Caution**. — Consolidated **multi-year ice** usually covers Sverdrup Channel, except for some breaks and small leads which normally occur between the last week of August and the third week of September.

169 *(For more details concerning **ice** conditions in this area visit: http://www.ice-glaces.ec.gc.ca.)*

Fay Islands

170 **Fay Islands** *(79°38'N, 97°25'W)*, a group of small islands, islets and rocks, lie in the middle of the south entrance to Sverdrup Channel, about 15 miles ESE of Departure Point. They are generally low-lying; the largest has steep cliffs rising over 120 m on its NE side. Another unnamed island is about 10 miles farther south.

171 **Caution**. — A **shoal depth** of 16 m lies 4 miles east of the unnamed island. A group of above-water and **submerged rocks** lies 3 miles SE of the main group of Fay Islands.

Sverdrup Channel — East Side

172 **Middle Fiord**, entered between unnamed points 7 and 14 miles inside Sverdrup Channel, penetrates 13 miles east and then 5 miles NE to its head. Braided streams cross large outwash plains to reach the head of the fiord. The fiord is gradually being filled by deposits brought down from ice fields and glaciers on its north side and on the south side of its inner part.

173 **Caution**. — A **shoal**, minimum depth 15 m, is 5 miles west of the unnamed south entrance point of Middle Fiord. Several islets and **submerged rocks** lie in the NE portion of the fiord.

174 The north side of Middle Fiord is formed by very high headlands which rise from a rough, rocky shore to 420 m. A small ice field surmounts this upland area.

175 North of Middle Fiord, the coast of Sverdrup Channel is low with a few offshore islands. The shore is backed by rounded hills. Low, sharp ridges and mesas are further inland. These ridges increase in elevation and terminate in bold headlands 25 miles north.

176 **Caution**. — There are **submerged rocks** scattered around the offshore islands north of Middle Fiord.

177 **North Fiord** is the largest of several small inlets along this coast. A narrow unnamed inlet, 5 miles north, has a bold headland on its south side. The headland rises precipitously to nearly 300 m, with a sharp-edged summit of 610 m.

178 **Bad Weather Cape** *(80°09'N, 96°40'W)*, at the north entrance to Sverdrup Channel, is backed by a **conspicuous headland** with an elevation of 622 m.

Sverdrup Channel — West Side

179 The west side of Sverdrup Channel is formed by Meighen Island *(previously described)*. The south part of the east coast of Meighen Island is very low. Farther north the rugged shore is cut by several ravines and streams as the land rises gently to the Meighen Ice Cap. Alluvial fans forming along this shore suggest slow inshore currents in the channel.

180 A bight in the north shore of Meighen Island, west of **Noice Point** *(80°08'N, 99°04'W)*, has low shores backed by cliffs in places. **Perley Island**, fronting this bight, is low, rocky and has offshore banks and ice pressure ridges on its north side.

Li Fiord to Nansen Sound

181 Between the north entrance to Sverdrup Channel and the north entrance to Nansen Sound, 70 miles NNW, the coast is rough and rocky. A line of cliffs, about 1 mile inland, rises to 240 m; behind them are rounded ridges with elevations approaching 610 m.

182 The coast is frequently indented by small fiord-like inlets which lead to steep-sided valleys inland.

183 **Caution**. — **Depths** in this area have been obtained by **spot soundings** through the ice and **shoal depths have not been examined**.

184 **Li Fiord**, entered between Bad Weather Cape and **Cape Northwest** *(80°21'N, 96°36'W)*, 12 miles north, penetrates Axel Heiberg Island 13 miles SE, then 5 miles east where the fiord divides into two arms trending 8 and 7 miles NE and SE, respectively.

185 The sides of Li Fiord rise sharply to elevations of 300 m, about 1 mile from shore, and rise to 610 m farther inland.

186 **West Cape Fiord**, 8 miles within the north side of Li Fiord, is entered between **Li Point** and an unnamed point 2.5 miles NW. The north shore of West Cape Fiord has an elevation of about 120 m but rises inland to mesas and nearby ice caps with elevations over 610 m.

187 **Bals Fiord** penetrates 9 miles SE from its entrance between Cape Northwest and an unnamed point 9 miles NNE. Near its head, the fiord is divided into two arms by a short peninsula. The south side of the fiord is bordered by cliffs between 300 and 370 m in elevation. Near the head of Bals Fiord, the cliffs become lower but are backed by pyramidal peaks with elevations exceeding 900 m.

188 **Rum Islands**, two moderately sized islands, lie close off the north entrance to Bals Fiord.

189 **Bjarnason Island** *(80°40'N, 95°30'W)*, 660 m in elevation and the largest island on the west side of Axel Heiberg Island, lies 7 miles farther north in the entrance to Bunde Fiord.

190 **Bunde Fiord** extends 20 miles ESE from the east extremity of Bjarnason Island. The land at the head of this fiord rises steeply to flat-topped tableland, scarred by deep ravines, with elevations of nearly 1,800 m.

191 Rocky cliffs form most of the south shore of Bunde Fiord. Elsewhere the foreshore extends 1 mile before inland cliffs rise to elevations of 610 m. **Camp Five Creek** empties midway along the south shore over an extensive outwash plain. **Bunde River** enters the head of the fiord from a broad-floored valley. There is little evidence of alluvial deposits at its mouth. **Blizzard River** enters Bunde Fiord from the low and flat north shore.

192 The west face of the peninsula separating the heads of Bunde and Bukken Fiords is formed of steep cliffs rising to elevations of 650 m about 1 mile inland. The cliffs form a series of tilted terraces with steep, high, west-facing escarpments.

193 **Bukken Fiord**, north of Bjarnason Island, extends 17 miles east. The north side of the fiord rises fairly sharply to elevations of about 450 m a short distance inland. Valleys radiating from the head of the fiord have steep, high walls rising to sharp ridges. Streams enter the fiord through these valleys; **Bukken River**, near the head of the fiord, is the largest.

194 A small inlet, 5 miles inside Bukken Fiord, has several islands and islets off its west entrance point and NW side.

195 Close north of Bukken Fiord, the coast is indented for 4 miles by an island-filled inlet.

196 Between this inlet and Aurland Fiord, 12 miles NNE, the coast is low and irregular with streams and deltas. Several islands and islets lie offshore.

197 **Aurland Fiord**, a roughly square-shaped indentation, trends 6 miles SE and is entered between the unnamed point at 81°03'N, 94°51'W and the extremity of an unnamed peninsula 5 miles NE. The shores surrounding the fiord, and the islands within, are low. Scattered highlands occur to the south and east.

198 **Rens Fiord**, entered between the north entrance point of Aurland Fiord and an unnamed point 7 miles NNW, penetrates 13 miles east. Several islands lie centrally within the fiord and another lies SW of the north entrance point. The south shore of the fiord is bold, rugged and backed by rounded weathered terrain. The north shore, in contrast, is generally low but rises to 150 m in places.

199 A **conspicuous** conical **hill** north of Rens Fiord has an elevation over 300 m; it has a 430-m ridge, backed by an ice field, trending NW/SE behind it.

200 Between Rens Fiord and Cape Thomas Hubbard, 10 miles north, the coast is bold and rocky with several steep, rounded hills rising close inland.

201 **Cape Thomas Hubbard** *(81°21'N, 94°07'W)* is the west entrance point of a triangular-shaped unnamed bay which indents the north end of Axel Heiberg Island for 5 miles. The shores of the bay, low and rocky, are backed by rounded hills partially capped with ice. Several small islands lie in the centre of the bay.

202 **Cape Stallworthy**, the north extremity of Axel Heiberg Island, lies 5 miles east of Cape Thomas Hubbard and is the east entrance point of the unnamed bay. The cape rises gradually to elevations of 60 to 90 m, is steeply banked with snow, and backed by a range of mountains rising to 490 m.

203 *(For descriptions of the north coast of Bathurst Island, Belcher Channel, Norwegian Bay, Eureka Sound, Nansen Sound and the NW coast of Ellesmere Island, see Sailing Directions booklet ARC 402 — Eastern Arctic.)*

Sail Plan

Adapted from Transport Canada Publication TP 511E.

Fill out a sail plan for every boating trip you take and file it with a responsible person. Upon arrival at your destination, be sure to close (or deactivate) the sail plan. Forgetting to do so can result in an unwarranted search for you.

Sail Plan

Owner Information

Name: _____

Address: _____

Telephone Number: _____ Emergency Contact Number: _____

Boat Information

Boat Name: _____ Licence or Registration Number: _____

Sail: _____ Power: _____ Length: _____ Type: _____

Colour Hull: _____ Deck: _____ Cabin: _____

Engine Type: _____ Distinguishing Features: _____

Communications

Radio Channels Monitored: HF: ☐ VHF: ☐ MF: ☐

MMSI (Maritime Mobile Service Identity) Number: _____

Satellite or Cellular Telephone Number: _____

Safety Equipment on Board

Lifejackets and PFD's *(include number)*: _____

Liferafts (include type and colour): _____ Dinghy or Small Boat *(include colour)*: _____

Flares (include number and type): _____

Other Safety Equipment: _____

Trip Details — Update These Details Every Trip

Date of Departure: _____ Time of Departure: _____

Leaving From: _____ Heading To: _____

Proposed Route: _____ Estimated Date and Time of Arrival: _____

Stopover Points (include date and time): _____

_____ Number of People on Board: _____

Search and Rescue Telephone Number: _____

The responsible person should contact the nearest Joint Rescue Coordination Centre (JRCC) or Maritime Rescue Sub-Centre (MRSC) if the vessel becomes overdue.

Act smart and call early in case of emergency. The sooner you call, the sooner help will arrive.

JRCC Victoria (British Columbia and Yukon) 1-800-567-5111
+1-250-413-8933 (Satellite, Local or out of area)
727 (Cellular)
+1-250-413-8932 (fax)
jrccvictoria@sarnet.dnd.ca (Email)

JRCC Trenton (Great Lakes and Arctic) 1-800-267-7270
+1-613-965-3870 (Satellite, Local or Out of Area)
+1-613-965-7279 (fax)
jrcctrenton@sarnet.dnd.ca (Email)

MRSC Québec (Quebec Region) 1-800-463-4393
+1-418-648-3599 (Satellite, Local or out of area)
+1-418-648-3614 (fax)
mrscqbc@dfo-mpo.gc.ca (Email)

JRCC Halifax (Maritimes Region) 1-800-565-1582
+1-902-427-8200 (Satellite, Local or out of area)
+1-902-427-2114 (fax)
jrcchalifax@sarnet.dnd.ca (Email)

MRSC St. John's (Newfoundland and Labrador Region) 1-800-563-2444
+1-709-772-5151 (Satellite, Local or out of area)
+1-709-772-2224 (fax)
mrscsj@sarnet.dnd.ca (Email)

MCTS Sail Plan Service

Marine Communications and Traffic Services Centres provide a sail plan processing and alerting service. Mariners are encouraged to file Sail Plans with a responsible person. In circumstances where this is not possible, Sail Plans may be filed with any MCTS Centre by telephone or marine radio only. Should a vessel on a Sail Plan fail to arrive at its destination as expected, procedures will be initiated which may escalate to a full search and rescue effort. Participation in this program is voluntary. *See Canadian Radio Aids to Marine Navigation.*

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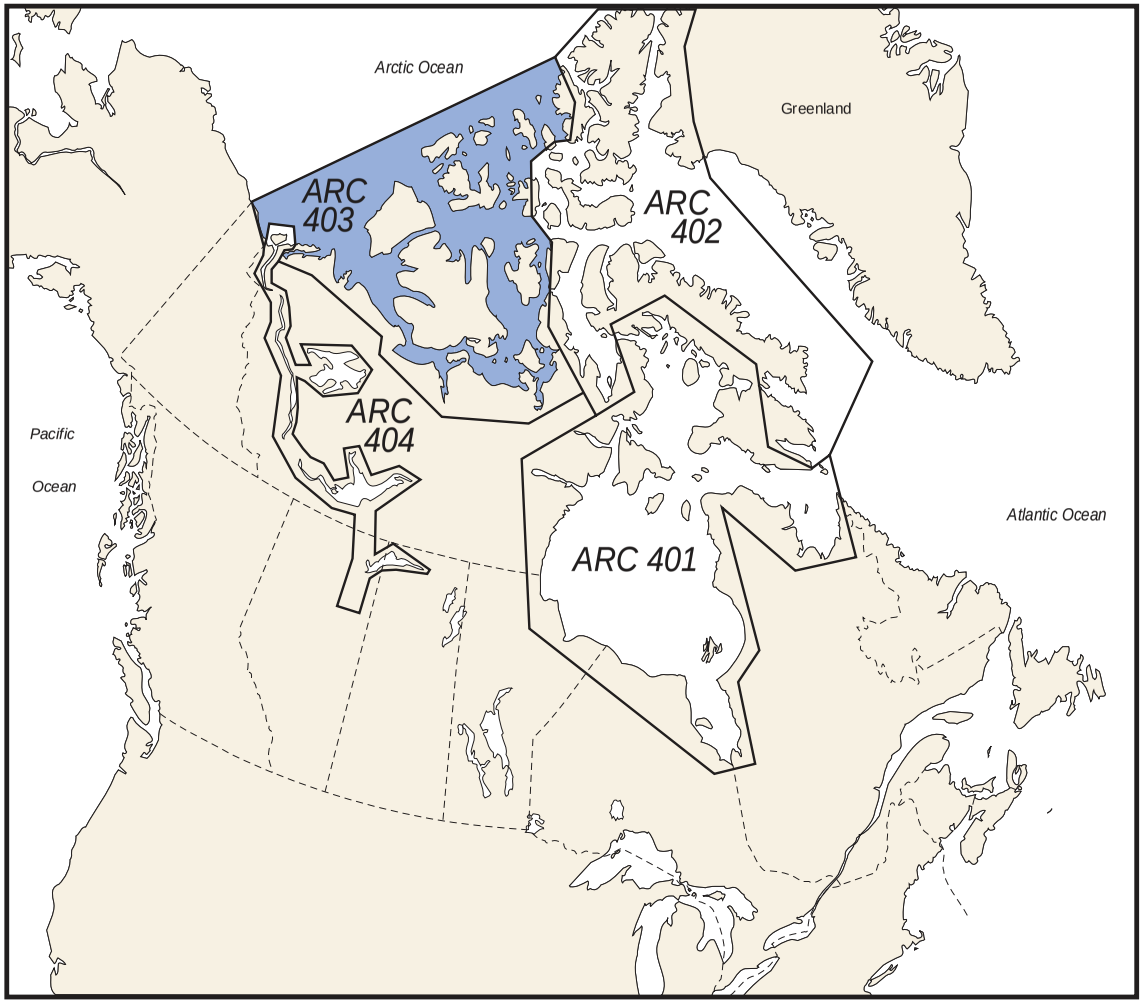

Sailing Directions Booklets

ARC 400
General Information, Northern Canada

ARC 401
Hudson Strait, Hudson Bay and Adjoining Waters

ARC 402
Eastern Arctic

ARC 403
Western Arctic

ARC 404
Great Slave Lake and Mackenzie River